

Enterprise ‘Knowledge +’ in the Internet Era: Conceptual Exploration and Practical Strategies (Postprint)

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Date: 2023-10-08T00:00:00+00:00

Abstract

[Purpose/Significance] Against the backdrop of the knowledge economy, with the “Internet +” concept gaining prevalence, researching how knowledge management can keep pace with the times and enhance an organization’s foundational accumulation in the Internet era undoubtedly holds significant guiding importance. [Method/Process] Based on the smile curve theory of the industrial value chain, this paper expounds on a new concept of knowledge management in the Internet era—the “Knowledge +” strategy; after conducting an extended analysis of the meaning of “Knowledge +”, it identifies key strategies such as “connecting talent”, “integrating into business”, and “enabling value-added”; subsequently, it elaborates on and analyzes how the “Knowledge +” strategy is practiced within enterprises, and validates the empirical results. [Result/Conclusion] The “Knowledge +” strategy is an important ideology, tool, and method for organizations to enhance core capabilities in the Internet era, serving as a beneficial supplement to “Internet +”. The two are mutually complementary, jointly providing strong support for enterprises’ Internet transformation and reform.

Full Text

Study on the Concept and Strategies of Organizational “Knowledge Plus” in the Internet Era

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Abstract:

[Purpose/significance] Under the background of knowledge-based economy, the

“Internet plus” strategy for enterprise transformation has prevailed. The research of knowledge management keeping pace with the times improves the organizational thickness and depth in the Internet era, which undoubtedly has great significance. [Method/process] In this paper, based on the smile curve theory of the industry value chain, it is necessary to put forward the new concept of “knowledge plus” strategy on knowledge management in the Internet era. With the analysis of the meaning of “knowledge plus”, the key strategies—“talent connected”, “business embedded”, and “organization empowered”—have been identified. Then, based on the case study about “knowledge plus” strategy exploration and implementation in enterprises, the results are validated through empirical practices.[Result/conclusion] The “knowledge plus” strategy is one of the important concepts and methods to enforce the organizational core competence in the Internet era. It is also a useful complement to the “Internet plus” strategy. Both strategies interact together and provide strong support for enterprise transformation and reformation to Internet.

Keywords: knowledge plus; knowledge management; Internet plus; knowledge-based economy; Internet era

1 Background of “Knowledge Plus”

The world has entered an era of intensive innovation, characterized by the rapid emergence of knowledge, explosive technological development, and concurrent scientific innovation and industrial transformation, with various trends converging historically. China is currently in a golden period of economic and social development, a period of prominent contradictions, and a period of transformation in its development model. Facing the heavy tasks of transforming its growth model and adjusting its economic structure, knowledge spiral escalation and sustainable innovation will be key drivers for China to promote industrial upgrading, structural adjustment, and value creation under the new economic normal as it moves from manufacturing to intelligent manufacturing.

1.1 The Proposal of the “Internet Plus” Concept

The Government Work Report delivered at the Third Session of the Twelfth National People’s Congress first proposed the formulation of an “Internet Plus” action plan to promote the integration of mobile Internet, cloud computing, big data, and the Internet of Things with modern manufacturing, and to foster the healthy development of e-commerce, industrial Internet, and Internet finance [?].

As one of the proposers of the “Internet Plus” initiative, Ma Huateng, Chairman of the Board and CEO of Tencent, believes that “Internet Plus” combines the Internet with various industries to create new business forms, such as Internet finance, Internet transportation, and Internet healthcare. Subsequently,

the “Internet Plus” concept gained widespread popularity, exemplified by applications like Uber, Airbnb, Didi Kuaidi, and Yu’eobao, which demonstrate the tremendous power of the sharing economy model through the reconstruction of industrial value chains. “Internet Plus” does not simply add the Internet to existing industries; rather, it reconstructs original industries using entirely new Internet thinking. Leveraging the Internet’s inherent characteristics of reducing intermediaries, lowering transaction costs, promoting specialization, and enhancing efficiency, “Internet Plus” encourages industrial innovation through cross-boundary integration, upgrading and transforming existing industries to release new growth points.

1.2 The Proposal of the “Knowledge Plus” Concept

As one of the Internet giants, Baidu has been actively seeking transformation. On June 23, 2015, at the 10th anniversary celebration of Baidu Zhidao, the company released its “Knowledge Plus” strategy. Baidu Vice President Li Mingyuan stated that Baidu Zhidao had completed a strategic transformation from “connecting people with information” to “connecting people with services.” Relying on its comprehensive leading advantages accumulated in the knowledge domain, Baidu Zhidao would embark on the path of a “service-oriented ecosystem.” Through the “Knowledge Plus” strategy, Baidu Zhidao would achieve segmentation and penetration, delivering knowledge accessible anytime, anywhere, and on any device based on technologies such as mobile Internet, smart devices, IoT, LBS, and O2O [?]. However, the industry has since lacked deeper interpretation and analysis of the “Knowledge Plus” concept.

As early as March 12, 2015, knowledge management practitioners from organizations including China Aerospace, COFCO, Huawei, New Oriental, China Merchants Securities, Alibaba, Hopes Chemical, Yuexiu, Tencent, and Sohu gathered to conduct peer reviews of crowdsourced knowledge management practice cases from various enterprises. During a brainstorming session for the title of this crowdsourced book, the term “Knowledge Plus” was proposed (the final title was determined as *The Secret of Knowledge Plus in Practice*, with the first edition published in October 2015). From October 28-29, 2015, the theme of the top-tier Chinese knowledge management event, the “China Knowledge Management Alliance 2015 Annual Summit,” was also set as “Knowledge Plus: Empowering Chinese Enterprises’ Intelligent Manufacturing Upgrade.” The conference featured keynote speeches, high-level dialogues, knowledge bazaars, roundtable discussions, and guest interviews to exchange ideas on knowledge management and economic development, as well as Chinese enterprises’ intelligent manufacturing upgrade and knowledge innovation. Since then, the term “Knowledge Plus” has spread rapidly and begun to attract increasing attention and research.

2 The Connotation of “Knowledge Plus”

2.1 The Industry Value Chain Smile Curve

More than 20 years ago, Stan Shih, founder of Acer Group, proposed the famous smile curve theory [?], which posits that the most value-added regions of the industrial value chain are concentrated at its two ends—R&D and marketing. If an organization lacks both innovative R&D capabilities and brand marketing capabilities, it can only earn minimal hard-earned money. An analysis of globally outstanding companies such as Apple, Google, GE, IBM, Microsoft, Coca-Cola, Daimler-Benz, BMW, Siemens, and ABB reveals that they either invest heavily in R&D and innovation at the left end of the smile curve or focus on marketing and brand building at the right end, ultimately capturing high added value in the industry. Currently, concepts such as “Industry 4.0,” “Industrial Internet,” and “Made in China 2025” have demonstrated that with continuous breakthroughs in intelligent manufacturing technology in the big data era, the deep integration of industrialization and informatization can redefine the industries and related sectors that people are familiar with.

[Figure 1: see original paper]

Most Chinese enterprises currently remain in the middle segment of the smile curve, earning meager profits from traditional manufacturing and assembly. Therefore, they urgently need to extend upward along the value chain through technological upgrading. There are three main paths for transformation and upgrading: one is overall technological and process upgrading; another is global operations centered on market and brand; and the third is emphasizing innovation and R&D. The core of these three paths is the secret to building corporate depth and substance in the Internet era—“Knowledge Plus”!

2.2 The Definition of “Knowledge Plus”

The so-called “Knowledge Plus” refers to connecting people and scenarios, integrating into business operations, empowering organizations, and achieving value creation through the management of data, information, knowledge, and wisdom.

2.3 The Extended Meaning of “Knowledge Plus”

The “Knowledge Plus” strategy can be extended to three layers of meaning: (1) The plus sign “+” is homophonic with “家” (jiā, meaning “home” or “family”), corresponding to the English word “Engaged,” which signifies the need to connect talent. This approach is people-oriented, focusing on each individual’s knowledge and capabilities, enhancing everyone’s participation, and enabling each person to grow into an expert or master through continuous learning and cultivation; (2) The plus sign “+” is homophonic with “加” (jiā, meaning “add” or “increase”), corresponding to the English word “Embedded,” which signifies integration into business. This involves connecting business entities, focusing on the accumulation and increase of organizational knowledge assets, ensuring

that knowledge is generated from business and serves business, and that knowledge can be embedded in business operations to match corresponding knowledge when business needs arise; (3) The plus sign “+” is homophonic with “佳” (jiā, meaning “excellent” or “good”), corresponding to the English word “Empowered,” which signifies enabling and adding value. This involves empowering organizations through knowledge-driven approaches to solve business problems efficiently and innovatively, achieving business result multiplication and value creation, and ultimately creating excellent performance.

[Figure 2: see original paper]

3 The Practice of “Knowledge Plus”

Using knowledge as wings to enhance organizational core competitiveness has gradually gained recognition from more and more organizations. Many domestic enterprises and organizations have begun to experiment with knowledge management, hoping to fully leverage this powerful tool in the knowledge economy era, follow the development laws of the knowledge economy, and ultimately surpass competitors to become truly outstanding organizations. The COFCO Nutrition & Health Research Institute (hereinafter referred to as “the Institute”) is a central-level R&D and innovation institution of COFCO Group. With a mission to create new knowledge and a concentration of knowledge-based talent, the Institute is a typical knowledge- and technology-intensive organization. Since its preparation and establishment, knowledge management has been accompanying the Institute with high expectations [?]. After undergoing a “construction phase” (2011-2013), the Institute began moving toward an “expansion phase” (2014-2016), experiencing many twists and turns but also achieving remarkable accomplishments. The following analysis of the Institute’s knowledge management case illustrates how it has implemented and executed the “Knowledge Plus” strategy.

3.1 Connecting Talent

McKinsey & Company believes that 75%-90% of an organization’s most valuable knowledge assets are often invisible, hidden in employees’ minds. Therefore, strengthening connections among people, stimulating communication, and enhancing collaboration are particularly crucial. The Institute had previously launched two different knowledge management software systems in 2010 and 2012. The first system was simply named KM, and the second was called newKM. The initial KM system was temporarily established during the Institute’s preparation period by purchasing off-the-shelf knowledge management software products. As a transitional solution, this KM system accumulated approximately 3,300 knowledge items before being ultimately abandoned. The second newKM system was designed with three major modules: a knowledge base, an expert database, and communities. With guidance from a third-party knowledge management service provider, the project underwent various activities including planning knowledge categories, mapping knowledge landscapes,

organizing document upload campaigns, improving platform points systems, developing a professional nutrition metabolism database, and formulating a knowledge management white paper. However, due to multiple factors such as project manager turnover, insufficient internal professional capabilities, unstable system performance, and poor user interface friendliness, the newKM system, after more than a year of development, only launched the knowledge base module and eventually evolved into a simple document management system within the Institute.

After these two systems, the Institute reflected internally on what kind of knowledge management system they truly needed. Is knowledge management software merely a tool for mechanically uploading documents according to fixed categories? The team later realized that without stimulating people's innate desire for free creation and sharing, without integrating with R&D and innovation business processes, and without driving content generation and application through work scenarios, knowledge management would be futile and lack long-term viability. Consequently, the C3 large platform strategy was formally proposed, centered on the core concepts of "Connect," "Communicate," and "Collaborate" for social knowledge-based communication and collaboration. By introducing Web 2.0 elements such as social networks, communities of practice, interactive commenting, Weibo and WeChat integration, and mobile Internet, the initial phase focused on "attracting people and traffic," while the later phase shifted toward "protecting business and promoting innovation." With "serving innovation and empowering R&D" as its core guiding principle, the C3 large platform broke through the traditional state-owned enterprise model that overemphasized centralization, execution, obedience, rules, and top-down control, supplementing and perfecting the open, agile, personalized, unconventional, and bottom-up self-management model required for R&D and innovation.

Since late November 2013, the Institute has successively launched various C3 modules closely related to employees' daily work, including the C3 web portal, personnel profiles, communities, expert directories, news, blogs, microblogs, greeting cards, leave requests, meetings, calendars, events, interviews, visitor management, wikis, tasks, and points systems, accompanied by corresponding promotional activities, mechanism development, and cultural initiatives. The new C3 large platform was immediately well-received and favored by all upon its launch. Adhering to the spiral upward principle of "small steps, fast running, and agile iteration," the overall C3 planning continuously absorbed frontline user needs for upgrades and optimization, breaking down the system into individual modules for rapid development, release, and improvement. Simultaneously, aligned with work scenarios, a series of knowledge themes were introduced, such as regulations and systems, commonly used templates, science and technology conferences, Institute introductions, and new employee onboarding. Additionally, the C3 mobile app was officially launched in June 2014, enabling employees to access personnel profiles, news, announcements, and blogs anytime and anywhere via smartphones, greatly enhancing work efficiency and effectiveness.

[Figure 3: see original paper]

For instance, the “Personnel” module on the C3 platform embodies the concept of strengthening connections among people within the organization. Each employee can independently maintain their personal profile, skill specialties, basic information, contact details, work experience, training certifications, and technical expertise on C3. Mechanisms such as profile pictures, following, and mutual following enhance mutual understanding, while features like verified badges (V), virtual coins, user levels, and personal influence help shape professional images and personal brands. Through multiple dimensions including organizational structure, alphabetical sorting, user activity levels, and personnel search, users can quickly locate desired colleagues. Meanwhile, employee personal homepages aggregate their related activities and information, providing a three-dimensional understanding of each individual. If employees provide their birthday information, the C3 platform automatically sends birthday reminders on the homepage daily, allowing others to send birthday greetings and choose from virtual birthday cartoon gifts (such as blessing cakes, thank-you bouquets, heart-shaped pillows, or red sports cars) to express heartfelt care. Subsequently, C3 launched a monthly program called “Xiaotao’s Appointment,” which selects different employees for offline interviews and uploads the transcribed content to the C3 platform, delving deeply into employees’ thoughts and ideas from multiple dimensions including life, work, and perspectives on the Institute, thereby creating more three-dimensional employee profiles.

Currently, C3 has achieved good application results and become the most popular work platform within the organization. According to statistics, C3’s page views (PV) average 18 times per person per workday, and unique visitors (UV) average 55% of the total organizational population daily. At the end of 2014, an internal satisfaction survey revealed that C3 had become everyone’s favorite application system, with a penetration rate as high as 98% and 89% of users expressing satisfaction. The latest survey at the end of 2015 showed further improvement in C3’s satisfaction, with 91% of users expressing satisfaction.

3.2 Connecting Business

“How to integrate knowledge management into business” has always been one of the greatest challenges facing knowledge management practitioners and an ultimate question that all knowledge management practitioners must contemplate and resolve. In practice, the Institute prefers to contextualize knowledge, that is, to connect knowledge with business scenarios, relying on “the right time,” “the right place,” “the right person,” and “the right matter” to construct knowledge contexts. Therefore, it is essential to combine contextual background to form a comprehensive knowledge field. Specifically, it refers to the process in which a particular role (person), at a specific time and in a specific setting, applies their professional skills, experience, and network to solve and handle a specific matter. This knowledge management approach tailored to specific business scenarios—“adapting to time, place, person, and matter”—is called

scenario-based knowledge management. As the saying goes: with the right timing, advantageous location, harmonious people, and proper matter, success is achieved. Only in this way can knowledge management truly become embedded in business, focusing on value-output-oriented business activities as the main thread and emphasizing human experience and feelings, allowing knowledge to closely integrate with people and matters to achieve business objectives.

Guided by the core principle of “serving innovation and empowering R&D” and based on an analysis of core R&D and innovation business processes, the Institute’s knowledge management has chosen to focus on the following key areas for breakthrough: academic resources, intelligence management, idea management, communities of practice, project management, document management, patent management, and internal journals. Of course, stable KM infrastructure support is a prerequisite for good operation. The relevant work strategies are as follows: (1) Academic Resources: Build a one-stop integrated academic resources platform, integrating academic journals, conference papers, dissertations, standard patents, e-books, foreign literature, and other resources. (2) Intelligence Management: Conduct feasibility studies on the intelligence management system based on existing intelligence needs, complete requirement specifications, establish an intelligence management system, and strengthen industry intelligence push efforts. (3) Communities of Practice: Optimize various columns on the C3 platform, with community operations considering thematic promotion models closely integrated with the Institute’s culture and development stage. (4) Idea Management: Institutionalize and standardize idea management processes, requiring that all project proposals originate from the idea system, emphasizing idea promotion, and attempting to expand idea collection from external sources. (5) Project Management: Improve R&D processes and PLM (Product Lifecycle Management) system construction, continue PLM Phase II optimization and expansion, and explore models for promotion and expansion to external institutions beyond the Institute. (6) Document Management: Build a library and archives management system, cooperate with the project department to complete infrastructure archives organization and shelving. Establish document management mechanisms based on technology and product projects, embedding knowledge harvesting at milestone nodes and project closure phases. (7) Patent Management: Continuously conduct patent mining, continuously improve patent quality on a certain quantity basis, and attempt to research the feasibility of establishing an intellectual property trading center. (8) Internal Journals: Attempt to organize R&D outcomes and create internal publications to enhance the Institute’s industry influence.

[Figure 4: see original paper]

By the end of 2015, the Institute had established 46 communities of practice, included 442 experts, accumulated over 10,000 documents, more than 13,000 comments, over 16,000 microblogs, more than 600 blog posts, over 1,250 news announcements, more than 850 forum posts, over 135 events, and more than 2,200 wiki entries. These knowledge resources provide a solid foundation for

subsequent employee browsing, searching, retrieval, and processing.

3.3 Empowering Value-added

After several years of quiet cultivation, the Institute's knowledge management work has accumulated strength and began to demonstrate results in 2014 and 2015, achieving recognition within the industry. In 2014, the Institute won the China "Most Admired Knowledge Enterprise (MAKE)" Award. In 2015, after successfully defending its 2015 China MAKE Award and winning the 2015 Asian MAKE Award, the Institute achieved a triple jump, capturing the 2015 Global IOU (Independent Operating Unit) MAKE Award honor. This was the only enterprise from mainland China to break into the Global MAKE Awards in 2015 and is the second enterprise from mainland China to receive this honor to date.

As a foundational project for the Institute, knowledge management can generate benefits from three levels: (1) "Having Evidence"—leaving traces of work: capturing sparks of wisdom, reducing turnover losses, avoiding organizational amnesia, etc. For example, since the launch of C3, the Institute has effectively 沉淀 ed its knowledge assets, with various types of knowledge accumulating year by year. (2) "Being Useful"—processing and reusing existing knowledge: reducing repetitive labor, improving work efficiency, accelerating talent development, etc. For instance, after the academic resources system began trial operation on April 8, 2015, it received widespread praise from R&D personnel. By the end of 2015, literature downloads reached 230,000 articles, science and technology novelty search requests exceeded 100, proxy search requests surpassed 350, and document deliveries approached 10,000 items. The library management system, launched on May 20, 2015, had 3,563 paper books and 16,138 e-books on its shelves, with over 1,200 paper books borrowed by the end of 2015. (3) "Being Advantageous"—improving and creating new knowledge: enhancing innovation capabilities, gaining business insights, improving organizational intelligence, etc. For example, in terms of patents, the Institute achieved a major breakthrough in 2014 with 102 new patent applications (a 222% increase from 2013), including 86 invention patents, 12 utility model patents, and 4 design patents, earning the Institute COFCO Group's "Most Effective Patent Management Award." In 2015, patent work continued to yield fruitful results with 108 new patent applications, including 87 invention patents, 9 utility model patents, and 12 design patents. In terms of idea collection, the Institute launched the "2015 COFCO Nutrition & Health Institute University-Enterprise Joint Idea Competition" in partnership with China Agricultural University, Jiangnan University, and Hebei University of Technology, collecting 55 outstanding food-related ideas relevant to the Group's business, with 13 excellent ideas successfully completing the incubation process.

[Figure 5: see original paper]

The value of knowledge management is revealed in subtle details. The true

thought deep inside every employee's mind is often: only when knowledge management is truly valuable to me will I be willing to consider it my personal responsibility. The daily accumulation of bit by bit may seem trivial and ordinary, but when this accumulation reaches a certain quantity, a genuine qualitative transformation may occur. What knowledge management aims to do is to establish and cultivate a large organizational knowledge "field" where everyone can empathize and resonate. Only when the balance point of individual and organizational knowledge transformation is broken and effectively leveraged can a virtuous cycle ultimately be formed. Ren Zhengfei, founder and CEO of Huawei, actively encourages employees to write their experiences into cases. He stated internally: "We are now in an information society where knowledge is very important. Writing down experiences allows young people to read the cases, compare them in practice, and achieve sublimation." Therefore, the value of knowledge management does not depend on knowledge or IT itself, but on the application of knowledge by organizational members.

Knowledge management itself is essentially a transformation. Hao Xiaoming, President of COFCO Nutrition & Health Research Institute, stated: "Through resource integration and unified management, we hope that the Knowledge Management Center can serve as a communication bridge between various centers and departments of the Institute, driving the Institute to become a knowledge management benchmark within COFCO Group, and simultaneously promoting COFCO Group to become a knowledge management benchmark among central enterprises, providing continuous momentum for sustainable enterprise development." Knowledge changes destiny! Knowledge creates wealth! In the Internet and big data era, new ideas, technologies, methods, and tools are surging forward against the backdrop of the grand knowledge economy! With China's economic structural adjustment and intelligent manufacturing transformation and upgrading, implementing the "Knowledge Plus" strategy, emphasizing knowledge management and operation, pursuing endogenous drivers, and enhancing organizational depth is undoubtedly the general trend!

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

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