

# Strengthen the Digital Construction of Consulting Enterprises for Improving Project Management

**Hanzheng Shi**

China Academy of Industrial Internet, Beijing 100102, China

## ***Abstract:***

Entering the digital era, the deep integration of the new generation of information technology and traditional industries has brought great opportunities and challenges to the consulting industry. Enabling consulting service through digital construction will become an important driving force for the high-quality and healthy development of enterprises, and an important way to build new competitive advantages of enterprises. When carrying out digital construction, we should carry out systematic and comprehensive integrated construction around the core competence of consulting enterprises in "business management, collaborative management, knowledge management and data application", realize the internal and external driving of digital transformation, and continuously enhance the competitiveness, innovation, control and anti-risk ability of consulting enterprises.

***Keywords:*** *Digitization, Information technology, Engineering consulting, Management platform*

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## **I. INTRODUCTION**

A new round of information technology revolution is in the ascendant, digital construction is booming, and many new formats, new models and new services are emerging at present [1]. In particular, the superposition of epidemic factors highlights the necessity and urgency of digital construction, providing a rare opportunity to transform and enhance traditional industries and stimulate innovation potential. As far as the traditional construction industry is concerned, the speed of information development and application has obviously lagged the overall social level, and the application of new technologies is superficial, far from achieving the goal of improving the development of the whole industry [2, 3]. However, under the current policy requirements, technology development trend, huge economic volume of the industry and increasingly rich high-end talent reserve, the construction industry informatization may usher

in explosive growth, and the digital transformation is quietly changing the rules of the industry and market.

As an engineering technology consulting company facing the traditional construction industry, in order to adapt to the inevitable trend of market development, promote the transformation of old and new kinetic energy, realize innovation driven, optimize structure, improve quality and efficiency, and seek the rise of the industry chain to the high end of the value chain, an important task to be completed is to explore the integrated development of consulting business and the digital construction of service objects.

## **II. SIGNIFICANCE OF DATA CONSTRUCTION TO THE IMPROVEMENT OF CONSULTING SERVICE ABILITY**

### **2.1 Data Construction is an Important Engine to Realize the High-Quality Development of Consulting Services**

Digital construction is the innovation of service tools and means on the surface. It is to realize the optimization and reconstruction of traditional consulting service ideas, ideas, methods and measures based on information means. Digital construction is an infrastructure system that faces the needs of high-quality development and promotes the transformation and upgrading of service quality, innovation and coordination, resource allocation, experience accumulation and other factors [4]. It can play an important role in making up for weaknesses, strengthening support, improving quality and efficiency and providing excellent service, and provide new momentum for the high-quality development of consulting services.

### **2.2 Digital Construction is an Important Way to Build a New Competitive Advantage of Consulting Services**

The competition in the traditional engineering consulting industry is becoming increasingly fierce. Under the trend of industry digital transformation and the implementation of the whole process engineering consulting service, if company stick to the traditional point development idea, company will always stay at the bottom of the industrial chain and will eventually be marginalized by the market. The digital construction of consulting services is in line with the development trend of the industry, can provide enterprises with a service model with high added value and high-tech content, help enterprises reshape their core competitiveness, build new competitive advantages of consulting services, and stimulate market innovation power and market vitality.

### 2.3 Digital Construction is an Important Thrust for the Healthy and Sustainable Development of Consulting Enterprises

The consulting industry is an intelligence intensive industry. The cultivation of talents and the precipitation of knowledge and experience are of great value to the development of enterprises. In the whole process consulting service mode, it is particularly necessary to pay attention to the cultivation of compound talents familiar with planning, design, cost, bidding, supervision, construction and other businesses factors [5]. However, the current actual situation is that talent cultivation is difficult and the cycle is long, and after personnel training is formed, the brain drain phenomenon is serious, and knowledge and experience cannot be accumulated and disseminated in the process of enterprise development. The digital construction of knowledge base and collaboration platform will be conducive to personnel collaboration and the precipitation of knowledge and experience, accelerate the speed of personnel cultivation and the flow of knowledge and experience, and help the healthy and sustainable development of enterprises.

### **III. THINKING ON BREAKING THE SITUATION OF DIGITAL CONSTRUCTION OF CONSULTING ENTERPRISES**

Facing the future, when implementing digital construction, consulting enterprises should focus on the digital transformation of the four core competencies of "business management, collaborative management, knowledge management and data application" by means of platform construction. To reduce management costs, improve management efficiency, release inefficient labor and control project risks, the traditional consulting enterprises should under the data drive and business orientation through the construction of an integrated management and control platform [6]. The consulting enterprises can build a business management platform, transform the traditional operation and business management mode, and realize the standardization and online of internal management. The consulting enterprises can build a collaborative management platform, reshape collaborative processes, realize digital control and fine management of business processes and management elements, and adapt to the transformation trend of upstream and downstream. The consulting enterprises can build a knowledge management platform, collect project achievements, knowledge, experience materials, and realize intelligence precipitation. Through data application capacity-building, consulting enterprises can strengthen digital governance and indicator monitoring applications to assist users in perception, analysis and prediction.

### 3.1 Build a Business Management Platform to Realize the Standardization of Consulting Services

In order to adapt to the development trend of industry digital design, digital engineering, digital delivery, digital operation and digital decommissioning, it is necessary to resort out business processes and integrate and upgrade business systems. In terms of working mode, consulting enterprises should realize the electronation and networking of the whole work process, develop a new mode of mobile, collaborative and intelligent content of daily management and operation management, empower employees through new technologies and tools to improve work efficiency [7]. In terms of business management, consulting enterprises should take the project as the center, carries out data collection, storage, analysis and sharing around the composition of consulting business, opens the underlying data of business system, and constructs a model and a new data-driven consulting service model.

To realize the digital full coverage of management process, reduce management cost, improve management efficiency, and effectively improve the standardization, process and intensive level of management, the consulting company should establish a centralized and unified collaborative office information system covering human, financial, material, affairs and other businesses for operation management.

To realize the automatic collection and integration of multivariate and heterogeneous data, and form a service support foundation for the whole process for business management, the consulting company should build a technical base integrating advanced technologies such as GIS, artificial intelligence, Internet of things, virtual reality and digital model based on the building information model.

The consulting company should make an overall plan for communication protocols, interface standards, data specifications, etc., build external connection interfaces that can integrate engineering specialized software, data acquisition terminals and other external services, internally realize the integration of business systems, data fusion and sharing, realize the unified opening of ecology and constantly innovate data services.

### 3.2 Build a Collaborative Management Platform to Realize the Efficiency of Consulting Services

Digital transformation is not "fighting alone". Consulting companies should strengthen collaborative innovation between enterprises and external partners, customers, governments and other units [8,9]. Relying on digital technologies such as BIM, Internet of things, big data

and artificial intelligence, the digital transformation should build a collaborative management platform, connect upstream and downstream partners, promote the efficient cooperation of the whole industry elements, the whole process and all participants, promote data connection, resource sharing and business collaboration among enterprises, and solve the problem of information resource fragmentation in the whole process of consultation.

The collaborative management platform disassembles and reorganizes the work functions of the traditional engineering consulting participants, realizes the seamless connection of various business links, and meets the needs of communication and cooperation among the participants in the project. The collaborative management platform uses the workflow engine to realize process reengineering and organization reengineering, and provides multi-party collaborative office process online services [10]. The collaborative management platform integrates user element resources through data interface, solves the problems of multi-source heterogeneous and distributed storage of data, and promotes data flow and application. The collaborative management platform relies on statistical analysis software and building information model to establish two-way links between management data and visual data to optimize the collaborative experience.

### 3.3 Establish a Knowledge Management Platform to Realize the Dominance of Consulting Results

As a knowledge service-oriented unit, consulting enterprises will form a large amount of resource information and knowledge experience in the process of business development. The long-term accumulation will lead to the problems of multi-source information, messy knowledge and explosive growth of information and knowledge. If effective management and transformation cannot be realized, the resource value will not be brought into play, which will be detrimental to the sustainable development of enterprises. Establish a knowledge management platform to form a place for centralized knowledge management and application through knowledge aggregation, association, mining and statistics, so as to realize knowledge sharing and application.

To improve the level of management modernization, building a knowledge management platform should combine knowledge atlas, data analysis and artificial intelligence. During the construction of the platform, the overall construction plan shall be carried out first, the knowledge management framework system of consulting business shall be established, and the standards from sub database, classification, attribute, label to list shall be formed to lay the foundation for construction. The platform construction shall include knowledge management functions, provide various knowledge bases, knowledge topics and knowledge maps, and

facilitate knowledge retrieval and learning. The platform construction shall provide application functions, refine and form business knowledge tools and templates to facilitate knowledge application. The platform construction should establish the function of exchange and learning to facilitate the transformation of tacit knowledge.

### 3.4 Establish the Project Index Monitoring System to Realize the Agility of Consulting Service

The value of data lies in application. Consulting enterprise data has great mining potential. Enterprises should pay attention to data operation and big data analysis and mining, and strengthen enterprise data management and application ability. Under the new situation, consulting enterprises should establish a perfect index monitoring and control system to change consulting services from "experience driven" to "data driven", extract knowledge from data, predict the future, service engineering optimization, risk control, project management, etc. Consulting enterprises should achieve a comprehensive understanding of customers through behavioral data analysis, achieve agile service capability through big data prediction, and carry out personalized services driven by data interconnection.

In order to build the project index monitoring system, we should first unify the data standards and specifications, establish a data center, broaden the data sources, and promote the data connection and sharing between systems. Secondly, a monitoring index system should be established, which is guided by business management needs and covers all management levels, so as to facilitate the positioning, discovery and intervention of core business problems. Thirdly, the key index data are extracted by new technical means such as data mining, data analysis and artificial intelligence modeling, combined with the introduction of external data and the automatic collection of project data, and combined with expert analysis, intelligent mining and other methods, the construction project index data model is studied and established. Finally, the index monitoring results are presented in the form of data visualization to realize business dynamic perception, trend prediction and early warning, and assist in analysis and decision making.

## IV. CONCLUSION

Traditional engineering consulting enterprises urgently need to transform and upgrade their service mode under the intensification of internal competition in the industry, the improvement of service capacity requirements of external industrial chain and the squeeze of industry giants. In the digital era, the transformation and upgrading of enabling consulting services through digital construction provides an opportunity for the leapfrog development of traditional

consulting enterprises. Consulting enterprises should take the initiative to connect and implement the national digital development strategy, make full use of cutting-edge digital technology to reshape business forms and realize transformation and upgrading, so as to take the lead in the increasingly fierce competition, so as to realize the high-quality and sustainable development of the enterprise.

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