

INFORMATION INNOVATION OF CONSTRUCTION ENTERPRISES WITH MACRO-ECONOMIC READJUSTMENT

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Abstract: The informationization in construction enterprises is attracting more and more people's attention. According to the "General Contracting Construction Enterprises' Superfine Qualification Standards" revised by the government has stipulated a list of superfine qualification standards conditions. Chinese construction enterprises must meet some demands to get the superfine qualification. This paper listed some necessary indexes in the evaluation system for certain enterprise's degree of informationization to make reference for construction enterprises.

1 INTRODUCTION

In 2007, the Ministry of Construction brought the enterprise informationization into the standard of construction quality for the first time. It is stated in the revised "the General Contracting Construction Enterprises' Superfine Qualification Standards" that the following standard conditions are required for the application of superfine qualification:

- Local area network (LAN) or management information platform has been established and the networking of internal work, information transfer and data exchange has come true;
- The external website has been set up and launched;
- The integrated project management information system, human management system and related software for engineering design were being used to make the archives and documents management available. This paper systematically discusses how the information construction in construction enterprise can meet the requirements of informationization of superfine qualification, making reference for construction enterprises.

2 THE INDUSTRIAL CURRENT SITUATION

At present, the industrial structure of Chinese construction enterprises is unreasonable: Size of the

enterprises is neither big nor small; the big enterprises are not so few while the small ones not so many. This presents as the typical inverted pyramid.

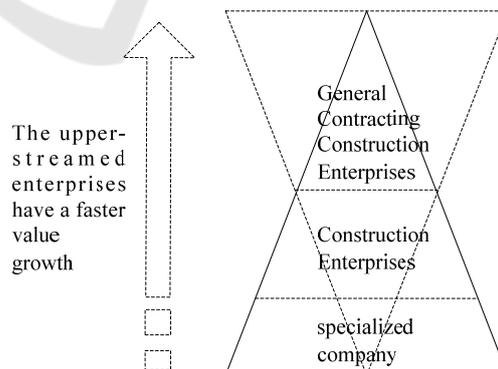


Figure 1: the inverted pyramid.

With the help of enterprises' qualification adjustment, the construction industry will get its own key enterprises step by step to lead the development of industrial economy. The industry will present as a pyramid. At the top of the pyramid are general contracting enterprises with serried, integrated and interdisciplinary capital, technology and management. At the middle of the pyramid are construction enterprises with specialized technology and management. The bottom enterprises with the largest number are all kinds of professional engineering company with professional and labour services.

At the same time, the industry will get the following improvements:

- The competition level will be separated and the market structure readjusted;
- The industry revenue will get distributed reasonably on the basis of market level and enterprise technology management level to change the averaging situation;
- The industry will be restructured and expanded. Chinese construction enterprises are facing with difficulties and challenges brought by the contradiction between lacking resource and expanding scale. The leading group will convert their concept and search for a way fitting with its own development to create maximal benefit with limited resources;
- Management and Control will be enhanced to increase benefits. To get quality and benefit, the enterprise cannot blindly chase for production increasing but to enhance its management and control too.

3 THE DEMANDS FOR INFORMATIONIZATION

Construction enterprise projects are often distributed at different places. The traditional management methods won't be helpful to projects supervising. But only informatization can give the biggest help to managers.

Chinese construction enterprises' development strategy has the following demands for informationization:

- Business Development (BD). Business development needs the information supporting from external market research and industry analysis. The new business unit asks future IT framework for a more open connector and expandability.
- Business Integration. Groundwork is still the core business and a business area that IT system needs to support mainly. Now the synergism among various business units is embodied in strategic positioning. There are few demands for business information integration among them.
- Strategy Implementation. Achieve decision layer's monitoring in the macro level on business. Realize decision support by analyzing and using internal and external information to find out the deviation and improve opportunity when strategy is implementing.
- Resource Allocation. Achieve the standardizati-

on and unity of management of enterprise basal information to support resource sharing, allocation and optimizing.

So, it is important to evaluate the informationization in the general contracting construction enterprises.

4 THE EVALUATION SYSTEM

The evaluation table of general contracting construction enterprise's superfine qualification standards and informationization is specific to construction enterprises' application demands about treating project management as core business. On the premise that enterprises are asked to carry on the informationizational infrastructure (including hardware capacities, network environment, guaranteed safety, guaranteed fund, guaranteed system and external web portals), focus the key point of informatization construction on integrated project management.

The necessary indexes in the evaluation table are as follows:

- Informationization of the key integrated project management;
- Informationization of the engineering design, human resource management and archives management;
- Collaboration management among various functions and between enterprise and the project;
- Integration application between integrated project management system and Human Resource Management System (HRMS), Financial Management System (FMS), Office Automation System (OAS), Archives Management System (AMS).

To promote the enterprise's deepen application of IT, the evaluation table have also set some leading indexes such as e-commerce, knowledge management, financial management and office automation. Although financial management and office automation are listed as leading indexes, office automation is the starting of many construction enterprises informationization for a long time and financial computerization management is the one of the main concerns in construction enterprises especially superfine qualification enterprises informationization.

It is clear that the superfine qualification evaluation system has given a blue print for construction enterprises informationization. Thereby achieving integrated project management informationization, achieving project management

collaborative platform, achieving management function field informationization. And finally, to improve the project management capability and comprehensive management level of the general contracting construction enterprises. It is proved that this is a explicit and significant industry policy guidance.

5 CONCLUSIONS

Facing with the information demands for superfine qualification, according to PMBOK and other international advanced project management theory, and learning from many domestic construction enterprises' experiences in project management, the enterprise can establish an integrated project collaboration management platform based on UAP centring on integrated project management. In this way, it can integrate all of the PM business of subsidiaries and project department in a unified platform. And then establish a platform for information publishing, flowing, communication, examining and approving to integrate the actual businesses of PM and improve the enterprises' collaboration management level. Further, integrate PM and other application system to achieve the integration of user, data and business among integrated project management, Human Resource Management (HRM), Archives Management (AM), engineering design management (EDM), market management, Office Automation (OA), knowledge management (KM), Financial Management (FM), Business Intelligence (BI) and e-commerce.

With integrated information management system, construction enterprises can establish a integrated project management system with distinct gradations, clear goal, comprehensive applications and integrated functions. At this level, with the help of software system, the enterprise can improve its informationization by doing the following things:

- Establish the business executive targets, including management target, control target, decision-making target and performance assessment target, to carry out the Delicacy Management (DM) upon PM's key elements;
- Establish a unified system of organizational environment, business process and data account to promote construction enterprises' transition to PM;
- Achieve all kinds of management function's integration, not only the horizontal project complete management but also the vertical business process and summarization of data. Thereby, promote the

enterprise management standardization, refinement, integration, collaboration;

- Integrate project management (PM) and business management (BM) to make BM's strategic objective match with PM's operations objective, production objective, profit objective and Quality Safety objective.

In the level of PM, informationization construction can help construction enterprises establish project operation and management system from planning, implementation to management. With management system and data system, the enterprises can establish a scientific PMS to strengthen the process management of contract, cost, schedule, quality and safety, and supportive management of material goods and mechanical equipment. And finally, improve the refining degree of PM.

In the level of BM, informationization construction can help construction enterprises establish operation system to arrange, manage and control PM's functions. With software system's help, an organizational system with functions and PM connecting better will be built. And multi-project implementation information feedback and collect mechanism will be set up. With the comprehensive control system which mixed the enterprise hierarchy organization, examine and approve process and information statistic analysis together, the following items can be done:

- A PM process standard was established. For instance, project approval, design, budget, plan, purchasing, work progress, completion et al.
- Process monitoring and goal control of contract, cost, schedule, quality, safety, materials, equipment and other main functions, to make all of the goal, plan, organizing, implement and feedback under control;
- Centralized purchasing and supply management of multi-project's resources for production will be built to optimize the product resources and assets operating efficiency furthest;
- The financial accounting management of unified value income and profit in project and subsidiary will be carried out to connect the PM and enterprise economic accounting system and monitor their financial operating status;
- Performance evaluation of PM core elements will be established to provide data for enterprise's analysis and decision-making on the overall operating status and strategy profile.

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