

Research on the development status and countermeasures of project management Informatization

-- Taking Henan Zhi Hui Crane Co., LTD as an example

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Abstract: With the continuous development of industry, computer science and electronic information industry, our country complies with The Times and puts forward the goal and route of high-quality development. How to improve the production capacity and quality of industrial products, how to use computer science and electronic information technology for industrial empowerment, has become a part of the need to focus on research. This paper takes Henan Zhi Hui Crane Co., LTD. 's engineering management informatization process as the research object, studies the enterprise' s engineering informatization start, development, effectiveness and make a summary of experience, hoping to be promoted and help the informatization construction of small and medium-sized enterprises.

Keywords: Project management informatization; Development status; Existing problems; Improvement measures; Experience summary.

1. Introduction

Since the beginning of the twenty-first century, the competition between countries has intensified, and the market has become more and more risky. In the face of the epidemic since 2020, import and export trade has been greatly affected. How many small and medium-sized enterprises survive and develop is a huge challenge for the country and every enterprise. Industry 4.0, Made in China 2035 and other concepts and strategies have been put forward one after another. Industry, computer science and electronic information industry are also developing continuously. The country has put forward the goal and route of high-quality development. How to improve the production capacity and quality of industrial products, how to use computer science and electronic information technology to empower the industry, has become a part of the need to focus on research. This paper takes the process of project management informatization of Henan Zhi Hui Crane Co., Ltd.as the research object, studies the start, development and effectiveness of the enterprise 's project informatization, and makes a summary of experience, hoping to be promoted and help the informatization construction of small and medium-sized enterprises.

2. The development process of engineering management informatization in Henan Zhi Hui Crane Co., Ltd.

2.1. The background of project management informatization of Henan Zhi Hui Crane Co., Ltd.

Henan Zhi Hui Crane Co., Ltd.is a company with lifting machinery and equipment as the main product. It has achieved great success since the establishment of the factory. It has a

large market share in the local market, but the market competition is becoming more and more fierce. The market has more and more strict requirements on the production time and quality of products. Through external consulting and market research, in order to further enhance the production capacity of enterprises and improve the quality control of products, the company's leaders decided to re-implement industrial informatization.

2.2. Henan Zhi Hui Crane Co., Ltd. Started the project management Informatization

The company decided to launch a variety of management systems in stages, initially determined the on-line target of OA / ERP / MES system, and finally decided to basically realize the stable operation of the three systems within two years, and formulated the corresponding investment conversion rate target, product quality improvement target, document management target, financial target, system operation target, etc. From January 2021, the company officially began to implement informatization.

The company first sorted out the business processes of the whole company. It mainly investigates the main business processes of management, office, production department, technology department, quality inspection department, supply and marketing department, finance department and other departments, and draws the process operation details of the main business of each department. Through the analysis of the business flow chart, it is found that there are many cases of duplication of business processes. Some processes can be simplified and optimized by means of merger and cancellation, so as to improve the efficiency of office.

Secondly, the company's human resource allocation is analyzed (see Fig.1). It is found that most of the employees of the company have bachelor 's degree or above, and their majors are mechanical design and manufacturing and automation, industrial design, mechanical engineering,

communication engineering, computer science and technology, enterprise management, accounting and other majors (see Fig.2), which meet the conditions of promoting industrial informatization. Among them, two employees

majoring in computer science and technology have experience in system operation and maintenance, and can follow up the follow-up system operation and maintenance.

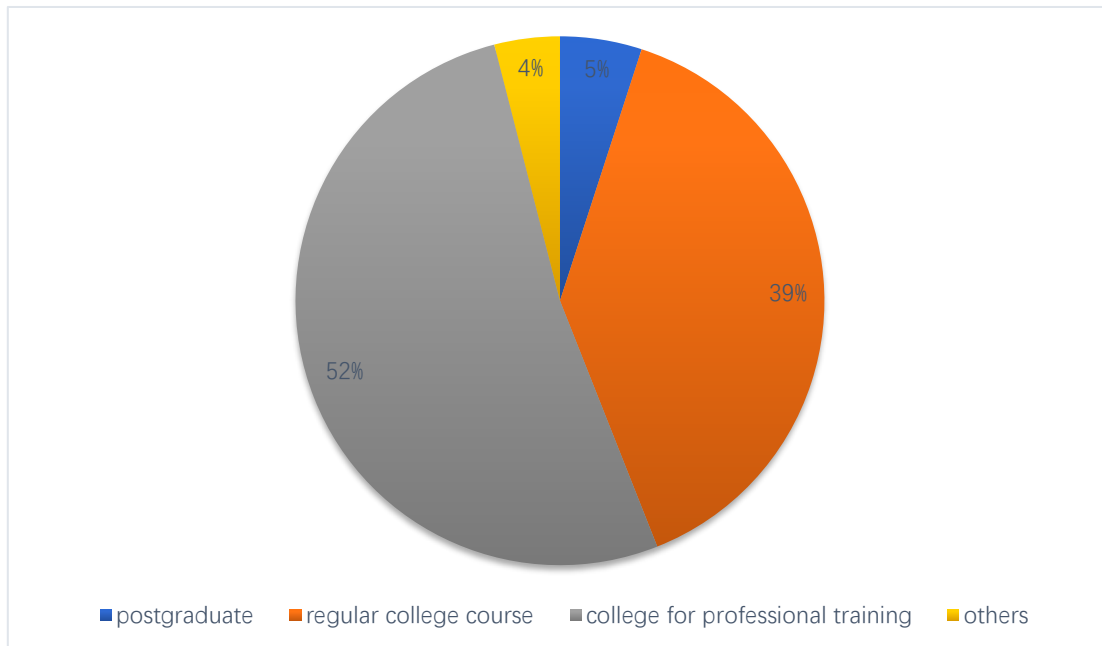


Fig.1 Henan Zhihui Crane Co., Ltd. staff qualifications

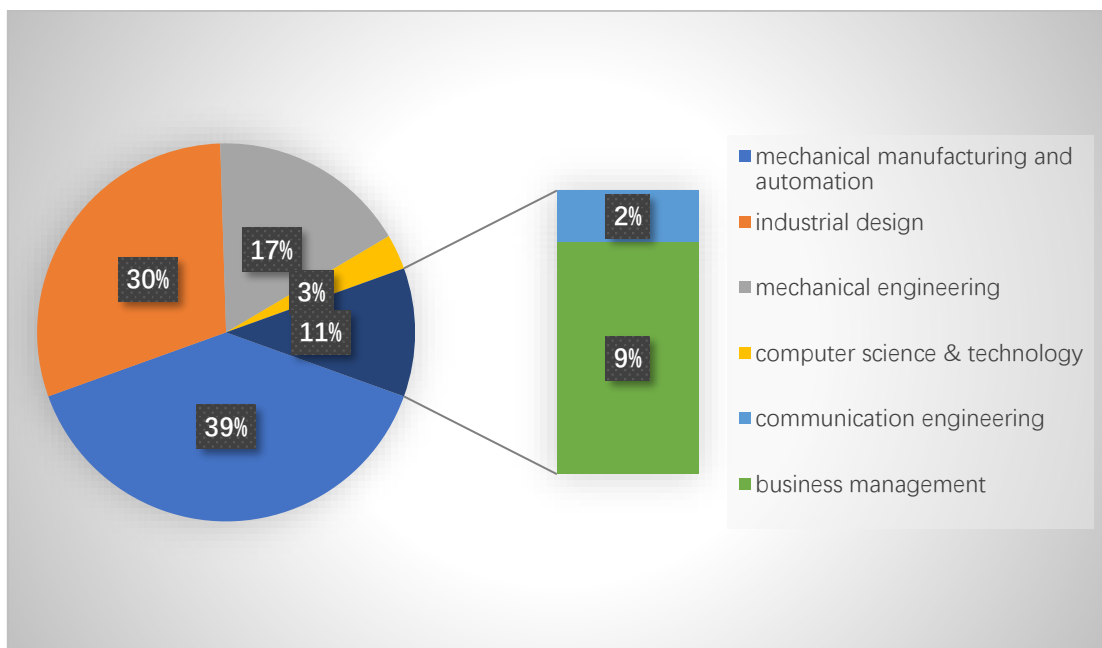


Fig.2 Henan Zhihui Crane Co., Ltd. personnel professional

Again, the company's employees conducted a questionnaire survey and interviews to ask employees for the implementation of information technology views, opinions and suggestions. Company employees generally support the implementation of information technology, but also raised concerns that the implementation of information technology will not lead to the problem of unemployment, through the communication between trade unions and company leaders, to dispel the concerns of employees.

Again, investigate whether the company's equipment meets the requirements of information technology. Through the investigation, the company has an independent server, but relatively old, need to wipe a dog again. There are more than 70 office computers in each department, and the software and

hardware are relatively advanced. The entry of information can guarantee the Informatization of the company.

Finally, it is determined that the business department gives priority to the promotion of OA and ERP systems, and the production workshop implements the MES system. The current resource allocation allows the three systems to be launched at the same time, but the opening time of some functions is limited.

2.3. The promotion of engineering management informatization in Henan Zhi Hui Crane Co., Ltd.

Before the system is launched, the company draws an

employee from each department to be responsible for the information work of the department, learns the system to use and undertakes the training work of the department 's information system. Through the preliminary research work and training, it has been supported by the leaders of various departments, and the resistance of system development on-line has been appropriately reduced. In the first stage, the document approval and independent printing are mainly developed for the OA system. The ERP system mainly opens the process approval, financial module, human resource management module, and production task operation module. The MES system has launched the workshop product tracking module.

The preliminary investigation took one month, and the test and trial operation of the software took three months. In the trial operation stage, many system operation problems were solved, and some processes were optimized to help the enterprise realize the optimization of the program files. At the same time, the staff were trained. By the end of 2021, the stable operation of the modules that have been running at this stage was realized.

2.4. Henan Zhi Hui Crane Co., Ltd. Project management information technology results

The phenomenon of shuffle between departments has been significantly reduced, and a lot of office paper has been saved. Employees do not have to sign in and out of each department every day, and online approval has been achieved. The production efficiency has been greatly improved. In terms of workshop management, the production progress of the workshop is clear at a glance, and the planner can complete the task scheduling and business office in the office. The production manager can make production decisions scientifically and reasonably according to the report. The warehousing department has reduced a large number of forms, inventory management and raw material control are more reasonable, and the cost is greatly controlled.

3. Problems found in the process of engineering Informatization

3.1. Cost problems

In the process of engineering informatization, the original server of the enterprise is relatively backward. In the case of carrying a large amount of data and multiple devices working at the same time, the problems of stalling and system crashing will occur, and it will take a lot of money to buy a new server. The new OA / ERP / MES system also needs to spend a lot of money. The company's leaders are worried about the high cost and ask for equipment with high-cost performance. If the later development cost is relatively high, they are worried about the risk of giving up.

3.2. There is a phenomenon of missing some key processes in the research work.

In the process of investigation, there is a phenomenon of missing some processes when employees in various departments describe the work of their posts. By comparing with the job description and business flow chart, many such phenomena have been found, which lead to the omission of some processes in the initial stage of programming, and the adjustment of the subsequent system trial operation, which

increases the workload. And missing some processes will also cause problems related to business crossovers.

3.3. Conflicts between some middle-level leaders and ordinary employees

Some middle-level leaders have insufficient understanding of the necessity of the informatization process, and always feel that they can operate normally without informatization enterprises. Especially in the trial operation stage, employees need to carry out offline and online processes at the same time, and the workload will increase more than before. Some employees even work overtime. This is an inevitable process, which naturally encounters the resistance of employees. If employees do not actively improve the convenience of industrial informatization for their future work, it will even affect the mentality of employees. Some employees worry that the implementation of industrial informatization in enterprises may lead to their unemployment. In the future, many processes will run online, and many form registrations will be cancelled. Employees ' concerns are not unreasonable, but also a phenomenon that needs attention.

3.4. The efficiency of solving technical problems

In the process of trial operation, system problems also occur frequently, and it is necessary to modify the data and operation process in the background. However, because it takes time for the company's computer personnel and external software suppliers to communicate and solve the problem, when the problem cannot be solved immediately, it will cause dissatisfaction and ridicule of some employees, and even affect the follow-up work.

3.5. Issues of training and continuing education in the new system

Each department has an employee who is responsible for the training of the department 's information system, and the quality requirements of the employee are relatively high. When the employee does not understand the system operation in place, it is easy to cause the department 's employees to view the system software, which is not conducive to the follow-up information. Continue to run the promotion. Since the modules of the software are developed and opened one after another, it also involves the follow-up continuing education. If the continuing education of each stage cannot be done well, it may lead to the stranding of information projects in some departments.

3.6. The planning is unscientific and unreasonable

Some enterprises do not attach importance to the planning of information system, especially some small and medium-sized enterprises. There is a problem that the form is more important than the substance. Only the information construction is promoted in form, the actual work is not planned, and the planning documents are not compiled, which leads to the situation that there is no basis in the construction of information system[1].

3.7. The foundation of digitization is weak.

The construction of engineering management Informatization is a hierarchical system engineering that integrates staff and information zed machinery. It includes the relatively

small information needed for project management, as well as the decision-making information of the staff. Through the information platform, it can share resources, and can also process and apply information, so that the project can be managed [2]. The basis of industrial informatization is industrial digitization, which needs to be supported by many basic data. However, some office systems used by the enterprise in the past are relatively backward, and some processes still use paper forms, and many data are not available. Therefore, in the process of industrial informatization of the enterprise, it is necessary to input a large amount of original data. The workload is huge, and a lot of manpower is needed to carry out basic data statistics and input. There are also certain risks in network security. Taking routers as an example, their own vulnerabilities are easily exploited by criminals to enter the enterprise system for attack or destruction [3].

3.8. In the initial stage of project management informatization, the work is carried out by oral communication, which affects the effect

In the construction of the information system, different departments promote related work through oral communication, resulting in the implementation of the information system construction process is not in place, thus affecting the quality of the information system[4]. In the early stage of project management informatization, the communication between departments mainly relies on oral communication, which leads to the lack of some information, or the omission of information due to communication obstacles, which affects the development of project management informatization.

4. Solutions to problems found in the process of project management Informatization

4.1. Cost decreasing and benefit increasing

In the procurement process of servers or other office equipment, consider the use of high-quality and low-cost products, and for modules that are not in a hurry to use, do not develop and use them for the time being. For the equipment that meets the use, replacement is not considered for the time being. At the same time, according to the existing equipment of the enterprise, the equipment update plan is compiled, updated in batches and year by year, and it is not necessary to replace all the equipment at one time.

4.2. Take time to research the work flow diagram of the unit

Before the work research, it is necessary to study the company's existing work flow chart in advance. In the process of investigation, we should actively communicate with the employees of various departments. If we find missing items or processes inconsistent with the unit program files, we should actively ask, collect information for the problems, and confirm with the employees of various departments after drawing a new flow chart to ensure that the system runs as little as possible or no errors occur.

4.3. Do a good job of employee ideological work before promoting project management Informatization

In the face of possible psychological problems of employees, it is necessary to predict in advance, and at the same time actively communicate with employees to eliminate their resistance. The main problem that employees are worried about is whether the informatization is useful or not, and whether it will lead to unemployment. In the face of such problems, we should actively communicate with the company's leaders to ensure that employees will not lose their jobs. At the same time, it will be more and more convenient for employees to show their future work, so that all employees can support the promotion of engineering management information and reduce the resistance in the operation process.

4.4. Scientifically formulate contracts to ensure that after-sales service of software suppliers is in place

In order to prevent the occurrence of technical problems to solve the problem of low efficiency, it is necessary to reach a consensus with the software supplier on the contract, requiring it to solve the after-sales problem on time; at the same time, the staff of the enterprise information department should actively carry out continuing education, continue to learn knowledge, and do a good job in software maintenance.

4.5. The training of the new system should be carried out many times and evaluated

In order to ensure the operation of the system, it is necessary to actively train the personnel responsible for the informatization of the department. In the early stage, it is necessary to carry out centralized training. For all the operation processes related to the business of the department, it is necessary for the personnel to operate, and after the proficiency is completed, the assessment is carried out. At the same time, the staff trained should also be assessed to ensure that the personnel involved in the software of each department can be used skillfully.

4.6. Step by step, complement the weak digital foundation in stages

Before promoting the informatization of project management, it is necessary to fully do a good job in the classification, source, collection method and process of basic data, so as to input the database according to the corresponding module. Basic data plays an important role in the trial operation of engineering management informatization, which is used to detect the stability and practicability of the system.

4.7. Continuously improve the construction of enterprise information security system and improve the infrastructure needed for informatization

In the process of promoting the informatization of engineering management, it is necessary to evaluate the energy efficiency of the current information infrastructure in advance, control the information security, and invest in the information infrastructure.

4.8. Collaboration among partners

When the development of project management Informatization, it is very important for partners to cooperate with each other. Project management is not only a relatively independent project, but also needs other organizations to manage and develop together, so that different organizations can share information resources with each other. Not only that, in the different links and stages of the development process of engineering management informatization, the use of information resources and the methods of collection are also different [5]. Enterprises can communicate with partners, understand needs with relevant parties, and build an efficient and low-cost information platform, thereby reducing costs and increasing efficiency.

5. Experience summary

From the perspective of the promotion process of industrial informatization of the enterprise, in order to realize the informatization of engineering management of industrial enterprises, the most important thing is to select the appropriate entry point, the appropriate promotion method and software according to the actual situation of the enterprise.

The following aspects should be considered in the process of engineering management informatization of industrial enterprises:

- (1) Economic costs (such as the required hardware, software costs, labor costs, etc.)
- (2) The effect that can be achieved
- (3) Get support from leaders and employees.
- (4) The preparation of a reasonable plan (including the implementation plan, assessment indicators, effect evaluation methods, etc.)
- (5) To consider the level of quality of personnel units.
- (6) Need to establish a special information technology promotion project team, research ability, organizational ability, etc.

(7) The original system of the enterprise and the level of information operation

6. Complimentary close

Facing the increasing pressure of market competition, actively promoting the informatization of engineering management in industrial enterprises is an important way for enterprises to grow and develop, continuously improve efficiency and reduce costs. The competition among enterprises is a multifaceted competition, which needs to be improved in many aspects, such as politics, economy, market, quality, cost and benefit. The above article is only some experience that I should summarize from the promotion of information technology in enterprises. It needs to be enriched and accumulated through follow-up work and learning. It also hopes to give some help to industrial entrepreneurs and make China 's enterprises bigger and stronger.

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