



# Research on the Strategy of Sandtable Simulation Management of Xindao ERP Enterprise

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**Abstract.** ERP enterprise simulation management sandtable competition integrates the processes of enterprise establishment, enterprise planning, market development, product development, raw material procurement, product production, product sales, capital discount, and is a drill and excavation of the professional ability of undergraduate students majoring in economic management. The ERP sandbox simulation business model itself provides financial students with the opportunity to experience and actively practice, accumulate some management experience, and improve their application ability for business management. The purpose of this paper is to explore how to formulate scientific, reasonable and efficient business strategies, predict the production capacity and advertising of enterprises to ensure that the resources of enterprises can be fully utilized, and finally summarize a set of universal business strategies to help competitors reduce mistakes in the competition and cultivate innovation and creativity.

**Keywords:** Enterprise simulation operation · business strategy · professional ability · innovation and entrepreneurship

## 1 Introduction

ERP (Enterprise Resource Planning) enterprise simulation business sandtable competition is produced in response to the needs of the development of the times. It is the product of the highly developed business in the world today, with a bright color of the times and practicality. Sand table simulation provides a platform for college students who are willing to participate in business and a racetrack for galloping their will [1, 2]. Each participating team, as a management team, takes over a manufacturing enterprise, generally through online simulation of enterprise operation for four accounting years, and finally determines the ranking according to the comprehensive score. In the process of simulated operation, each group is composed of four students, who respectively hold four management positions: marketing director, human resources director, production director and financial director. The team can effectively allocate and utilize the resources owned by the enterprise through reasonable planning of existing funds and loans, make correct decisions quickly in case of difficulties, and effectively adjust the plan. Finally,

**Table 1.** Scoring rules of university student enterprise simulation management sandtable competition

Score item	Score	Scoring method	Audit method	Publication method
Business result score	100 points	Determine the score according to the ranking order of the system score in the fourth year	Referee review	Q group announcement, contestants check

after four consecutive years of operation, the team will compete with each other through the comprehensive score of equity value, carbon emission neutralization rate, goodwill value, total budget deduction and digital opening [3–6]. The scoring rules are shown in Table 1.

Each contestant should give full play to their talents, feel the rules of enterprise operation, understand the balance between enterprise resource allocation and development scale, deeply understand the strategic position of finance and the essence of operation management, and construct strategic thinking and continuous improvement management thinking. Therefore, the ERP enterprise simulation management sandtable competition is not only an exercise of the contestants' professional skills, but also an effective way to tap personal potential, stimulate interest and innovation awareness, and can create and reserve business elites for the development of the times, which has positive significance of the times and far-reaching practical significance.

## 2 The Difference Between Yonyou Xindao System and Yuechuang System

Each contestant should be proficient in using the application system used in the competition. We call the “Yuechuang System” the old system and the “Yonyou Xindao System” the new system. This year, Guangdong Province adopted a new system - Yonyou Xindao system. This new system adds a lot of new playing methods and builds a broader platform for the contestants. The participating team can not only give enterprises a name that reflects their business philosophy, but also have a more three-dimensional operation interface. The differences between the old and new systems are as follows.

The new system changed the time axis, expanded the time unit from “day” to “quarter”, and required the participating teams to fill in the post expense budget at the beginning of each quarter. This change makes the contestants more aware of the current financial and production capacity of the enterprise, cultivates their foresight, planning ability, foresight and long-term strategic vision, and exercises their ability to insight into the market and make rational decisions.

The new system cancels strategic advertising and adds new media advertising and online marketing. In this way, there is no middleman to earn the price difference. Customers can directly buy high-quality and inexpensive products from manufacturers. The business environment is open and free, and the business methods are flexible and diverse,

which is more in line with the development of the times. This change prompted the participants to adjust the enterprise development strategy in time, seek the best development path, and mobilize the initiative and creativity of the participants.

The new system changes the order quantity unit from “batch” to “individual”. This detailed change has increased the amount of calculation, but it has also increased the sense of achievement and belonging of the participants, explored the interests and potential of the participants, and enabled the participants to constantly confirm themselves in the competition, constantly improve their self-drive, decision-making and execution, and enhance their professional pride.

The new system adds new product features. Each product has three different features to choose from, reflecting the purpose of the enterprise to aim at market demand and produce. This change makes the participants realize the logical relationship between different strategies and enterprise performance, and guides the participants to pay close attention to the frontier trends and development trends of the business community.

Each employee in the new system has a different efficiency bonus, and there will be a certain efficiency loss after the completion of each production. The incentive mechanism and salary increase and other benefits can make employees smile and put their heart and soul into work, which greatly increases efficiency. In addition, the basic wage of each worker is different, and the actual state of the talent market can be simulated in combination with the initial efficiency. This change has touched the thinking of the contestants to the level of corporate culture, cultivated the people-oriented enterprise sentiment, and has far-reaching significance for the future career development of the contestants.

To sum up, the new system keeps pace with the times, and many changes are both close to the development of the times and point to the future, which increases the breadth and depth of thinking for the simulation of enterprise operation, guides and excavates the thinking space of the contestants, and provides a comprehensive platform for the contestants to exercise their professional ability and even improve their professional quality.

### **3 Selection of Production Line Construction in ERP Enterprise Management Sandbox Simulation**

Usually when a company is founded or taken over, the operator will rack his brains and try his best to produce more products with higher profits, so that the enterprise can obtain higher rights and interests, more loans and stronger strength after one year of operation. In this case, what kind of production lines to build at the beginning of the year and how many production lines to build are particularly important.

Normally, there are three production lines for each rule. Because of the different naming of each rule, they are called low-grade, middle-grade and high-grade production lines. Low-grade production lines do not need time to build, but need to spend money and time to change production; Medium-grade production lines need to be installed in a quarter, and can be converted to production at a cost; High-grade production lines are highly intelligent. They can produce any desired type of products without time and money, but they need to be installed for 2 quarters to use. Therefore, constrained by the

allocation of workers, installation time and production efficiency, the best production line is not necessarily the most affordable, but the cheaper production line also has its advantages. Generally, an enterprise can only have 16 production lines at the same time. So, which kind of production line should be built first is crucial to the stability of the enterprise.

No matter what kind of production line is built, its capacity and price need to be considered. Because the production of a batch of low-grade production lines takes two quarters to complete, the production cycle is too long, and the production capacity is similar to that of other grade production lines, so it is usually not used. Medium-grade production lines have large production capacity and reasonable installation price. Although the operation cost is sometimes high, they are still popular with the majority of participants at the beginning of each practice. High-grade production lines have higher production capacity, but construction costs and material costs are also higher. Next, we will discuss the choice between high-grade and medium-grade production lines.

Among the many rules, the only thing that can be determined is that the price of the production line must be higher than that of the high-end products, and it is twice as expensive! Generally speaking, the production capacity of high-end production lines is higher, but because of the higher level or more number of employees required, the basic wage of employees required for a single production line is higher, the piecework wage is higher, the possible welfare benefits are also better, and the cost of manufacturing products is also higher.

The medium-grade production line can produce and sell 2 batches of products in the first year, while the high-grade production line can only produce and sell 1 batch of products, which means that the medium-grade production line can take the lead in the first year of operation. But in the future, its capacity will not be the highest. Therefore, when adding production lines in the later stage, it is still necessary to consider the relationship between cash flow and the price of the production line itself and various expenses.

As for the question of how many production lines to build at the beginning of the first year, we found that obtaining higher profits means higher product cost investment, while higher cost investment requires more cash support. As long as the amount of bank loans in the early stage is sufficient and the amount of discount on orders in the later stage is sufficient, we can boldly build production lines and put them into production. Of course, if you can't get the order, you should stop the expansion and use the existing cash to produce as much as possible. Only in this way can you be responsible for the enterprise and employees.

Figure 1, Table 2 and Table 3 show the production line rules and personnel rules of "Youwei Technology" in 2022 National Games.

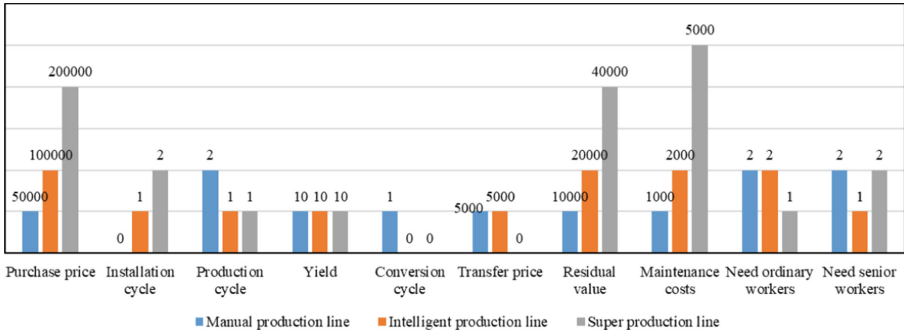


Fig. 1. Production line rules

Table 2. Worker recruitment rules

Worker type	Initial expected salary	Piecework wage	Initial efficiency	Quantity
Ordinary worker	1500	100	60%	40
Senior worker	3500	200	70%	40

Table 3. Shift rules

Shift name	Output bonus	Individual efficiency loss of workers
Eight-hour system	1	2%

## 4 Personnel Allocation and Selection in ERP Enterprise Management Sandbox Simulation

As we all know, the production line is the core of the manufacturing enterprise, and the products produced are the main source of income of the enterprise. How to predict the efficiency of workers, evaluate the production capacity and expenses of each quarter, and select the appropriate product type for production are the key to seize the opportunity in each business competition, and also test the depth of thinking of the participating team on the selection of workers, incentive mechanism, salary increase, overtime and other operations. However, no matter which rule, there will always be workers to be allocated to the production line, and the wages and bonuses of workers are not small expenses in the early stage of the competition. Therefore, in order to take into account the wage expenditure and production, and maximize profits, how to calculate its amount is particularly important. Take the production line worker allocation rules in the 2022 National Games as an example, where the manual production line needs 2 ordinary workers; The intelligent production line needs 2 ordinary workers and 1 senior worker; The super production line needs 2 ordinary workers and 2 senior workers. The number of ordinary and senior workers in each quarter is 40. In this case, in order to save costs,

we should give priority to workers with low wage expectations and high work efficiency. However, if there are many lines to be built at the beginning, it is necessary to select some workers with low efficiency. In order to ensure production capacity and save costs, it is necessary to make a relatively scientific prediction on the efficiency of the selected workers before the competition.

After many times of practice, it is found in the review summary that in general, it can be assumed that the worker efficiency is approximately subject to normal distribution. Among  $\mu$  Is given in the rule, and  $\sigma$  According to the table, the value is generally between 6.9 and 7.8. If 7 intelligent production lines are built at the beginning, 14 ordinary workers and 7 senior workers will be needed. The lowest efficiency of ordinary workers can be calculated by looking up the table. Therefore, when we make the prediction, the average efficiency should be calculated as 55%, and the average efficiency of senior workers should be calculated as 58%.

Only when we know the efficiency of workers can we calculate how many products can be produced in a batch of each production line, and then know how many bonus incentives or salary increases are needed to achieve the expected production capacity. However, because each worker is an independent individual, the average efficiency is only limited to the calculation of the total salary increase or incentive amount. As for the specific treatment of the number of workers allocated for each production line, it needs to be calculated by the participating team, and the specific problems need to be analyzed and grasped.

## **5 Personnel Allocation and Selection in ERP Enterprise Management Sandbox Simulation**

The most important part of the sandtable simulation competition is the four-year business strategy, which needs financial support, that is, the order revenue of dealers or the revenue of online marketing. Therefore, how to cast advertisements, how many advertisements to cast, where to cast advertisements, and when to cast advertisements are the questions that students of each participating group must think carefully, and also test students' forward-looking awareness and ability to adapt to circumstances. Next, we will study the advertising strategy.

First of all, if there is normal price of online marketing in the rules, it is necessary to compare the prices of online marketing and dealer orders; If the price of the dealer's order is higher than the price of the online marketing order, the dealer's order should be the main factor in formulating the strategy; If the price of the online marketing order is higher than the price of the dealer's order, remember to pay attention to the ability of the competitors to determine whether they need to compete with the dealer's order, to avoid the phenomenon of online marketing oversupply and no single product to sell, and to avoid the collective falling into disorderly and meaningless competition.

Secondly, at the same time of each advertisement, the advertising fee should be estimated according to the amount and quantity of the dealer's order. For example, in a competition, there were two orders for P4 in the Asian market in the first quarter of the fourth year, respectively P4T1, 16000 yuan, 1200; P4T2, 16400 yuan, 1050. There are two orders for P4 in the Asia-Europe market, respectively P4T2, 16800 yuan, 1200;

P4T1, 16500 yuan, 1400. There were two orders related to P4 in the second quarter of the fourth year, namely P4T1, 14000 yuan, 5000; P4T3, 14000 yuan, 5000, all in the Asia-Europe market. According to practice, the production capacity in the third and fourth years can reach 352 products per quarter. We have observed and calculated that if we win the order in the first quarter, we will definitely need a lot of advertising support, and the ranking can only be in the top two. If there is a large inventory, the ranking must be in the first place. Then, we need to think about which quarter's order is more appropriate and which market's order is more appropriate. Let's illustrate by calculation:

Assuming that we start to stock up in the second quarter of the third year, and the cost of P4 single product is, since the fourth quarter of the fourth year does not start production, we need to grab a product order. If we grab orders in the Asian market, compared with the orders in the second quarter, the surplus profit is 4.65 million yuan. If we grab orders from the Asian and European markets, compared with the orders in the second quarter, the surplus profit is 5.6 million yuan. If you grab orders in the second quarter, 1 million yuan is usually enough for advertising. According to practice, if 4.5 million yuan of advertising money is invested in the first quarter, it can make a profit of at least 11.79 million yuan in the Asian market; If in the Asia-Europe market, as the practice has proved that the advertising fee for the first place is about 5 million, and the advertising fee for the third place is about 4.1 million, only half of the orders can be obtained. Here, it is assumed that 1168 orders, and at least 7.745 million can be made. If the advertising fee is only 1 million in the second quarter, you can make a profit of at least 15.29 million. According to the expected value of various schemes, it is a wiser choice to invest advertising fees in the second quarter, and the loan amount in the fourth year will be higher.

If the product is sold normally in the third year, the product amount should be calculated from the fourth quarter. According to practical data, it is still calculated according to the advertising fee of 4.5 million yuan in the first quarter or 1 million yuan in the second quarter. The profits of the three schemes are 9.6 million yuan, 7.745 million yuan and 9.86 million yuan respectively. The third scheme has a weak advantage, but the loan line advantage in the fourth year is obvious, which is also worth considering.

It is explained here that there is no need to consider account period in order grabbing. Generally speaking, the cash and equity lost due to discounting is often less than the profit earned by this order compared with other orders. If not, the order can be obtained with less advertising costs. If it is not, the rules are intended to make the teams compete, and they will surely rise after the poor operation in the early stage; Otherwise, the strategy of pre-match planning is poor. Practice has proved that ERP enterprise management sandbox simulation in the middle and late stages of advertising costs related to success or failure. As for how to seize the opportunity, reduce expenditure and maximize income, we need to explore it slowly in practice. In a word, ERP enterprise operation sand table simulation requires a certain vision and courage to put advertising expenses in the middle and later stages.

## 6 Conclusions

ERP enterprise management sandbox simulation attracts and trains future business elites with its magic of simulation. The competitive situation is changing rapidly. There has never been a specific set of business strategies that can be invincible. The so-called strategies and skills are also based on specific background conditions, which need to be deeply understood and flexibly applied. However, elite talents are all honed by actual combat. The valuable experience given by advanced planning awareness and in-depth analysis and thinking, as well as questioning, is generally accompanied by our growth as the R&D value of product characteristics.

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