The Improvement of ERP Sandbox Simulation System in Practice Course

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Abstract: According to the author's sandbox simulation of practical teaching experience in ERP, this paper described the content and process of ERP Sandbox Training course and discussed the advantages of ERP sandbox simulation practice teaching Including business environment simulation, functional simulation and business process simulation. Finally, the paper raised ERP sandbox simulation system improvement and suggestions: ERP sandbox simulation should introduce more macroeconomic factors; the function of acquisitions and reorganization should be introduced in ERP sandbox simulation. The purpose of this paper is to make the sandbox teaching course close to the real environment to the greatest extent, so that students can master the necessary management skills.

1. Introduction

The rapid development of computer technology and information technology has greatly promoted the process of enterprise information and management modernization. ERP system with advanced management concept and management mode has become a kind of enterprise information system with strong adaptability and wide application value, and has been widely used in the enterprise field. The operation ability of ERP software, as a necessary ability for business graduates, has been valued and supported by domestic higher education. Many colleges and universities have purchased system software and set up relevant courses.

Enterprise Resource Planning (ERP) system is the management platform that can provide decision-making tools for business decision-makings to run and staffs based on information technology means and systematic management thinking.[1] ERP sandbox simulation experiment was development firstly by the Swedish Royal Institute of Technology's Klas Mellan proposed from 1978.[2] Its biggest feature was the use of experiential teaching methods, and the realization of requirement that students had achieved the consolidation and application of knowledge in the process of teaching experience. Beginning of this century, UF Software and Kingdee software company had introduced ERP sandbox simulation into teaching[3]. At present, the research of ERP sand table simulation teaching has entered a deep development stage. Li Jingjing and Tang Xiao put forward their own teaching improvement ideas in view of the nonstandard operation in ERP physical sand table teaching and the weak ability of mutual cooperation and coordination between students. According to the characteristics of physical sand table,[4-5] Luo Guoli elaborated the curriculum arrangement, precautions and process assessment methods from the perspective of teaching. [6] Lu Shengxu (2019) will "flipped classroom" teaching application and ERP software course, stressed the importance of process assessment to ERP software teaching, and pointed out that enhanced assessment design can achieve better teaching effect. [7]

It can be seen from the research status at home and abroad that the existing research mainly focuses on the teaching methods and teaching design of ERP sandbox, and has not improved its functions and modules. Therefore, this paper makes a brief analysis of the sandbox simulation

system of erp-uf Co., Ltd. and puts forward some suggestions and directions for the improvement of the system. The purpose is to make it more close to the real environment and cultivate students' more professional management skills.

2. An Overview of ERP Sandbox Simulation Training Course

ERP combined information technology with advanced management ideas, helped enterprises to rationally allocate resources, and created wealth in society. ERP was a comprehensive product that integrated of business management, financial management and information technology and other disciplines. It was an integrated management application system that consisted of the organizational model, business norms, management methods, and new management thinking.[4]

ERP sandbox simulated combat training course reproduced the process of enterprise management with the basic mold and achieve the aim of the "business" into the classroom. The indexes of sandbox (such as cash flow, inventory, production equipment, bank loans, etc.) were clear and intuitive. The background of ERP simulate sandbox training was a manufacturing enterprise that had been operating for several years. Students were divided into 6-8 groups of 5, respectively, as the company's CEO, CFO, Sales Director, Production Director and Purchasing Director. The duty of CEO was enterprise-wide decision and overall planning; the duty of Chief Financial Officer was recording the case of each cash receipts and payments and counted annual financial statements. The duty of Sales Director was marketing, management of enterprises' orders and orders ensured delivery on time. Production Director presided over the production process, arranged production and changed the production line according to actual situation. Purchasing Director ensured timely supply, low-cost, and high quality of raw materials. Careful management of each respective department director at the same time, director of various departments timely communicated and exchanged of between each other to ensure the smooth information. Each group self-built company. They were the competitors in the same industry among them. According to market demand forecasts and competitor trends, each group determined the long, medium and short-term strategy of the company's products, marketing, sales, financing, production and other aspects. End of each year, each company settled and analyzed results of operations with the financial statements, made improvement program, and then was continue to operate next year. Under the status of the more competitors, the product of aging, the single market, how to maintain the company success and continues to grow that was the major challenge for the each member. Each group simulated business orders, purchasing, production, sales and other links. Then enterprises compared the business performance among them in a few years, excellent benefits was the winner.

3. The Characteristics of ERP Sand Table Simulation Course

With the ERP Sandbox Simulation course added more and more in college teaching continuously, it reflected the advantages of teaching in practice. In general, ERP Sandbox Simulation had the advantages of a business environment simulation, occupational status simulation, business process simulation.

3.1. Simulate the Real Operation Environment of the Enterprise [5]

In the training course, the design of environmental and entire process made students feel like being in the actual environment of business. Unlike the state of classroom lessons, this environment enabled students to consciously adjust their own, encouraged students to think initiatively, plan their training process and join initiatively to group activities to complete training. Environment simulated the more like real work environment, the higher the effect of practice teaching. Environmental simulation included not only the work environment a within unit, but also the working relationship between units of the enterprise and outside.

3.2. Simulate the Real Division of Functions of Enterprises

In the training course, a design idea was that enterprise' actual business process was as the driver for each students. For the business of a particular system, students simulated different departments, different jobs, and completed business independently. Its purpose was familiar with the system function, clarified the different types of business processes. In order to improve their comprehensive practical ability and simulate the actual operation of enterprises, students simulated the different positions in the company. Each position had the corresponding responsibilities, rights, benefits, and let every student to find the sense of the appropriate "professional role ".[6]

3.3. Simulate the Real Operation Process of the Enterprise

The key to competition between enterprises was in their business processes, ERP sandbox on combat training simulation programs as well. In the simulation of enterprise environment, its connecting line was enterprise business process. The simulation environment made all the various business units and the functions of positions organically linked. So did that each student realized profoundly the relationship between part and whole[7], understood their position and responsible work in process, and process-based transport mode of the business.

In summary, ERP sandbox simulation training courses was the simulation of business environment, business process, functions of the job, to train management personnel in actual combat by building a simulated platform. Students truly fool the intense and brutal competition in the market, experienced operating risk and responsibility. In the experience of success and failure, student strengthened mutual communication and understanding, experienced the power and advantages of teamwork, learned the management knowledge, mastered the management skills, felt essence of management, in order to comprehensively improve the quality and capacity management of students. ERP sandbox simulation training courses promoted for the combination of teaching theory and teaching practice, and promoted rationalization of the related professional courses structure. ERP sandbox simulation training courses had played a great role on deepening reform of the teaching, improving the teaching level, and strengthening the quality of education.

4. The Improvement of ERP Sandbox Simula-tion

It was undeniable that ERP sandbox simulation teaching development in practice has landmark significance. Although the simulation does not mean real business, but we can continue to innovate and improve the teaching simulation software, hardware, to bring it close to the real business operations.Through ERP sandbox practice teaching and experience, the author made the following recommendations in the hope of ERP physical and electronic sandbox to play some of the follow-up services to promote the upgrade. As shown below (the bold text is the part of Improvements and enhancements):
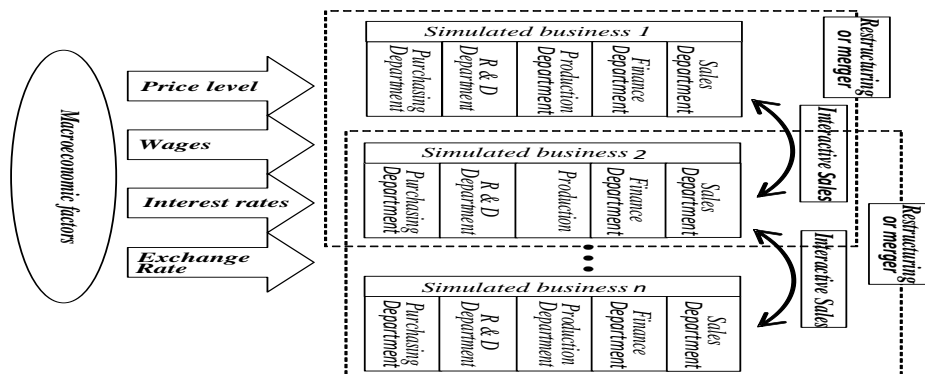

Figure 1. The improvement and innovation of ERP sandbox simulation system

4.1. Add Macroeconomic Factor Module to ERP System

Sandbox in ERP Simulation R & D and teaching professionals are aware of today's mainstream ERP sandbox simulation can provide a relatively detailed analysis of market forecast map, the students must be in a given market capacity to compete for market share, but few variables. It is obvious that as long as the simulated corporate strategic planning properly, the higher the value of advertising effectiveness, production capacity is large enough, then a winner. However, the changes in the macro-environmental factors influenced operation of the business in reality.

- First, the basic energy price volatility, fluctuations in raw material costs, management costs (staff salaries) improvement is the important problems for the enterprises to face often, these factors are very easy to change by the rules which go into the ERP sandbox.
- Secondly, for Asia market and international markets in the sandbox the business can be extended to foreign currency business, and thus the factor of exchange rate can be introduced into the sandbox simulation.
- Finally, you can put a fixed rate system to a floating rate system in the sandbox simulation, which means that the interest rate can adjust based on macroeconomic trends. Introducing inflation, interest rates and exchange rate factors in the new sandbox simulation teaching will increase the difficulty and uncertainty, but it can better reflect the operational flexibility, Ability to adapt to changes and solve problems of team when facing the unexpected events or business Dilemma.

4.2. Strengthen the Interaction and Participation in the Sales Process

The existing ERP sandbox is a simulation of model of companies confronting as manufacturers, and more emphasis on the two modules: manufacturing operations and financial management. The sales as the entrance of enterprise funds only reflected in the obtaining a given product price and quantity of orders through advertising flame. If increasing the two roles of middlemen and terminal retailers, bargaining process can be achieved between manufacturers and middlemen, middlemen and terminal retailers, let the market determine prices, while increasing the sales process interaction, participation, interest and Competitive.

4.3. Add Reorganization Module of Enterprise in ERP Sandbox System

Primarily the treatment of bankrupt enterprises is restoration, and secondly the teacher permission to refinance in the existing ERP sandbox simulation, that is to help them maintain their operations. Writer realized in the teaching practice that once business failure, the enthusiasm of the students will be seriously affected, they are often in a "sparring" status, faced the teacher's "charity" they are very uncomfortable. If so, it is better to introduce Merger and Acquisition and restructuring mechanism in ERP sandbox simulation. It means allowing poorly managed companies to seek a way out, and to seek cooperation with asset rich, abundant capital enterprises, or commission processing, or mergers and acquisitions, which not only increased the simulation teaching more interesting, and close to a real business environment. Of course, after the introduction of this function the software and hardware in ERP sandbox simulation must be adjusted accordingly, particularly financial aspects.

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