Current Situation and Optimization Strategy of Power Enterprise Management

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Abstract: *With the development of social economy, the scope of the use of electricity is more and more broad, and the deepening reform process of the state to the electric power enterprises is accelerated, and the electric power enterprises began to respond to the call of the state to establish a modern enterprise system. Electricity is one of the major national energy, whether electric power enterprise benign development concerns our country's energy strategy security. However, at present, the internal and external management forms are complicated, which restricts the development of power enterprise management to a certain extent. Based on this, in order for electric power enterprises to better meet the national demand, it is necessary to analyze the problems in the management of electric power enterprises at the present stage, constantly optimize and innovate the management mode of enterprises, improve the resource allocation ability of enterprises, so as to promote the development of electric power enterprises in line with The Times.*

Keywords: power management; strategy.

In the economic development of our country, power enterprises play an important driving role, can meet the social development of all walks of life of electricity demand. In order to order the management of electric power enterprises, standardized development, the shortage of human resources in the current development, the lack of systematic management system, management style is not perfect to pay attention to the problems, improve the management style, the problems in the management of electric power enterprises are systematically optimized, in order to maintain the internal stability of enterprises, play the social functions of enterprises to lay a solid foundation. This paper studies a scheme of optimal relay selection with cooperative jamming and optimal power allocation factor between forwarding relay and jammer. The traditional optimal relay selection scheme selects an optimal relay node to assist forward source information. Based on legitimate user and eavesdropper instantaneous channel state information, the proposed scheme selects two relay nodes to increase security against eavesdropper. The first relays to forward source information as traditional scheme. The second relays to send artificial noise as a friendly jammer.

1. OVERVIEW OF ELECTRIC POWER ENTERPRISES

The paper achieves the traveling balance control in exploratory behavior by fuzzy logic method, uses the least squares fitting to realize the corner detection and realizes the roadblock detection by designing the Barrier Predictive Function Model. The paper designs a distributed system based on block storage and electoral computing model which provides high reliability storage and computing services. This paper proposes the BUS communication model, achieves the storage and computing node's selection by LSM merging tree and Bully algorithm. The real-time ultrasonic roadblock detection information data obtained by Arduino detector is analyzed based on the distributed system and finally, the detection of environmental map is realized.
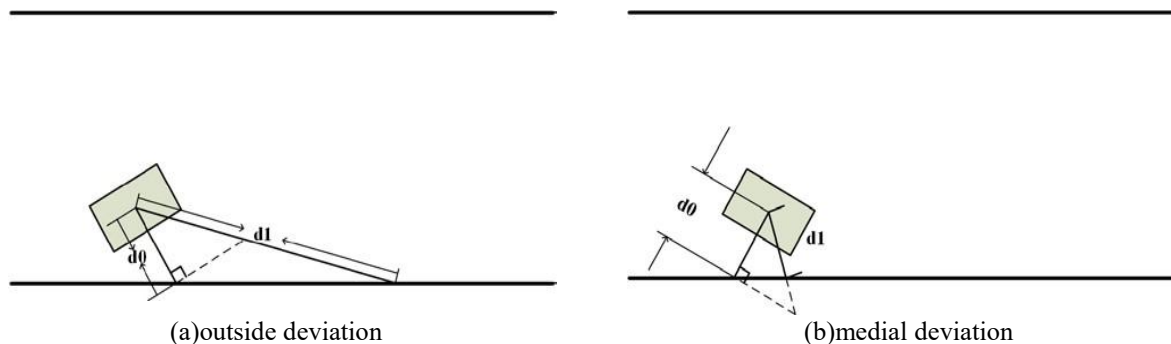

(a)outside deviation   (b)medial deviation

Figure 1: The deviation state of detecting orbit

1.1 Characteristics of electric power enterprises

The relay operates in Decode-and-Forward strategy. The closed form expression of secrecy outage probability is derived. In addition, the optimal power allocation factor is given when the total relay transmit power is constrained. The simulation results verify that the proposed scheme can significantly improve system security performance compared with the traditional scheme. Electric power enterprise belongs to the state monopoly industry. It is a state-owned enterprise with obvious service characteristics that integrates electric power transmission and sales. Compared with other enterprises, it not only guarantees the integrity of state-owned assets, but also realizes social and economic benefits. The specific characteristics are as follows:

(1) Different performance appraisal methods. The budget performance appraisal of electric power enterprises is different from that of other enterprises. The purpose of budget management is to control production in real time.

(2) Different modes of production. The production of electric power enterprises is a continuous and process-based production, and the production results will change according to the different effects of production positions.

(3) Market demand fluctuates with energy prices and profits are out of control.

(4) The input in the initial establishment of an electric power enterprise is related to its capacity and cost structure.

Table 1: G-ve enteric bacteria isolated from different investigated sources (water, calves, goats and human).

Sample origin	Water (46)		Calves (58)		Goats (28)		Human (36)		Total isolates	
Isolates	No	%	No	%	No	%	No	%	No	%
E.coli	10	21.7	13	22.4	7	25.0	6	16.7	36	33.97
Salmonella Species	5	10.9	11	18.9	5	17.9	5	13.9	26	24.53
A.hydro-phila	9	19.6	7	12.1	2	7.1	5	13.9	23	21.69
Pseudomonas aerogenosa	8	17.4	6	10.3	3	10.7	4	11.1	21	19.81
Total	32	69.6	37	63.8	17	60.7	20	55.6	106	100

Table 2: Haemolysin activities enterotoxin production and serotyping of Escherichia coli strains isolated from the studied samples.

E.coli serogroup	No
O119	6
O111	4
O55	4
O86	3
unidentified	19
Total	36

1.2 Significance of power enterprise management

In the process of management, electric power enterprises can achieve their strategic objectives, effectively evaluate their performance, facilitate their asset allocation, and play a supervisory role in the activities of each unit. The above aspects are also of significance to the management of electric power enterprises. In the realization of strategic objectives, in the process of enterprise operation and management, the management level increases the importance of management implementation stage, real-time control of economic activities and business conditions in the enterprise, timely adjust the implementation measures of economic activities and business according to the information feedback, and overall promote the realization of enterprise strategic objectives. The current progress; In the aspect of enterprise performance evaluation, the budget management indicators can be summarized, and the performance of each department can be evaluated by using the budget preparation law. At the same time, the performance evaluation of employees can be combined with the implementation of the budget, and the ability of employees can be urged in a subtle way. In terms of resource allocation, various functional departments were divided through budgeting, and the funds needed at this stage were reasonably predicted. Resources were allocated according to the predicted results, and the way of resource allocation was optimized to reduce the subjective infection in the process of allocation and use, and the operational risks were reduced in this process. In terms of supervision, compared with the actual budget and standard performance, strict supervision has been carried out on the implementation links of various departments, and effective measures have been taken to discover behaviors deviating from the budget, so as to effectively play the supervisory role and implement the power management.

2. STATUS QUO OF POWER ENTERPRISE MANAGEMENT

Map detection is a prerequisite for complex tasks such as gathering, path planning, risk detection and etc. An effective exploratory strategy can coordinate detectors to complete cognitive and perceptual processes for unknown environments more quickly and efficiently [1]. The construction of the environmental map is a very influential research direction. The operating space is block in many cases, the detector firstly needs to detect its surroundings and build an environment map. Finally, the follow-up research can be token with the help of the map information [2]. The research on distributed system is an important content of today's academic circles. The idea of normalizing the hardware resources through software enriches its theory increasingly. Based on the actual needs of the research subject, the paper explores a practical solution to map detection methods on distributed system which can improve the reliability and durability of available resources.

The researchers achieve the triangular formula modeling by placing ultrasonic modules on left, right and front sides of the detector and installing a rotating speed steering gear on the front side and uses fuzzy logic for deviation detection. Detector chooses the minimum distance between two sides of the wall as the reference direction, the front ultrasonic module will deflect 45 degrees to the reference direction. In the ideal state, the model is isosceles right triangle as shown in Figure 2.

Figure2: Ideal route model

2.1 Shortage of human resources

The phenomenon of enterprise monopoly and closed management is the status quo of the management development of electric power enterprises at the present stage. The healthy competition within enterprises is not helpful, and the lack of reasonable scientific prediction in the aspect of human resources is not conducive to the realization of enterprise development goals.

The development of enterprises cannot do without high-quality professional talents. However, in reality, the staff of electric power enterprises generally have the phenomenon of low quality and unqualified professional knowledge, and the shortage of professional talent resources leads to the low overall quality and difficult to improve the level of management standardization. The implementation of the role of talents in electric power enterprises makes it difficult to improve the enthusiasm of staff. Some employees with strong ability are not assigned to corresponding posts, and the professional knowledge of individual employees is not qualified, so it is difficult to realize the full use of talents.

2.2 Lack of a sound management system

Due to the particularity of the monopoly industry, electric power enterprises lack communication and competition between the same industry, and the problems encountered in the development and innovation are not timely communicated and solved. In the daily work, the management is scattered, no system, most employees have the phenomenon of slack work, work is not serious, lack of responsibility, difficult to provide effective protection for the interests of users, limiting the development of electric power enterprises. If electric power enterprises want to get greater development, they must make efforts in management innovation, and regard customer satisfaction as the premise of work. However, there is still no perfect management system at present.

2.3 Lack of sound administrative management system

In the development of electric power enterprises, there is another aspect that plays an important role, that is, the

perfection of administrative management system. Electric power enterprises pay less attention to the administrative work and do not take effective management measures, which leads to the imperfect administrative management system. In the management of the responsibility, there is often a high cost of input, low quality of efficiency. It is difficult to keep advantages in the process of re-development, so in the power enterprise's administrative management system system, need to speed up the improvement.

The measured function f1(x) increases when the fork appeared in the path of the detector A. Under unknown conditions, theincrease may be caused by a measurement error of the chip or a road wobble difference. Therefore, the difference in the K value between the primary function f2(x) and the f1 (x) should be checked by obtaining multiple raised measurements. In this paper, the b1 constant interpolation is set to greater than or equal to 2 times b0. It's reason is considering the temporary space in which the detector will occupy a certain area during the turning job.

The essence of curve turning algorithm is the problem of path identification at crossroads (Or a fork). In this paper, the curve recognition is realized by comparing two gradient functions with the least square fitting. Take the crossroads as an example, the gradient change of the front detector's ultrasonic information function means that the traffic curve appears at present. The road map and the gradient function are shown in Figure 3 and Figure 4.
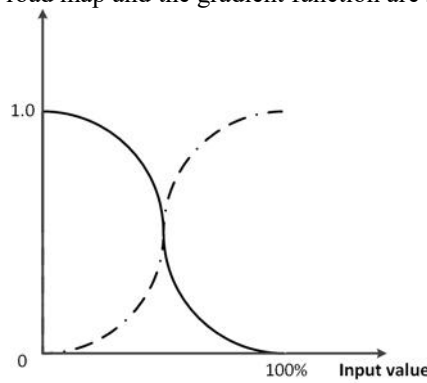

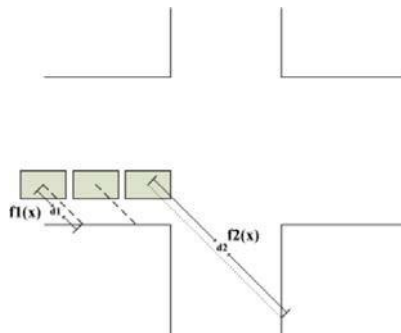**Figure 3:** Membership function of balance travel

Figure 4: The schematicof curve turningalgorithm

In this paper, the ultrasonic ranging method is used as the main method to obtain the surrounding road condition and the detector may causesome measurement errors in the rough road condition. Therefore, the data fitting method is used to merge the information in a certain range and finally the prediction function is generated. The function model is shown in figure 5 (a), f(t) is a fitting function of obstacle detection information, in which the measured values outside the set will become the measurement error points and then can be excluded. The g (t) is a prediction function generated by the time advance. When the detector reaches the critical value in next second, it will take the obstacle avoidance strategy. In this paper, the obstacle avoidance strategy is by selecting the information on both sides of the barrier and the maximum value is the turning direction. The strategy is illustrated in Figure 5 (b).
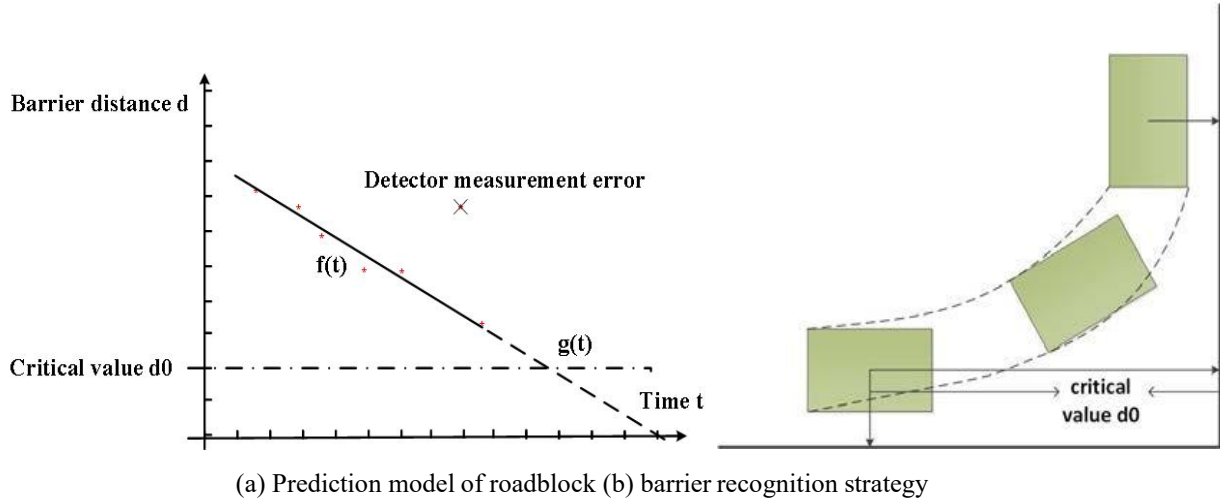
(a) Prediction model of roadblock (b) barrier recognition strategy

Figure 5: Ultrasonic road block detection

3. OPTIMIZATION STRATEGY OF ELECTRIC POWER ENTERPRISES

Inspired by the development of multi-processor structures, the distributed shared memory (DSM) can be concluded in three ways, which are chip memory, based on bus and ring [3]. In the scene of asynchronous transmission pattern (ATM) based on chip DSM exists a large number of processing units not only its construct is extremely complex but also it'sexpensive andimpractical. The DSM based on bus can realize storage allocation and control access by bus arbitration mechanism. The DSM based on ring can divide independent address space into dedicated and shared area, where the shared area is synchronized to all machines. The general structure of DSM based on bus is shown in Figure 6. The shared memory represents logical view of user's perspective; the local memory is a physical view. The shared units represent the unit size, and it can be moved among different local memories.
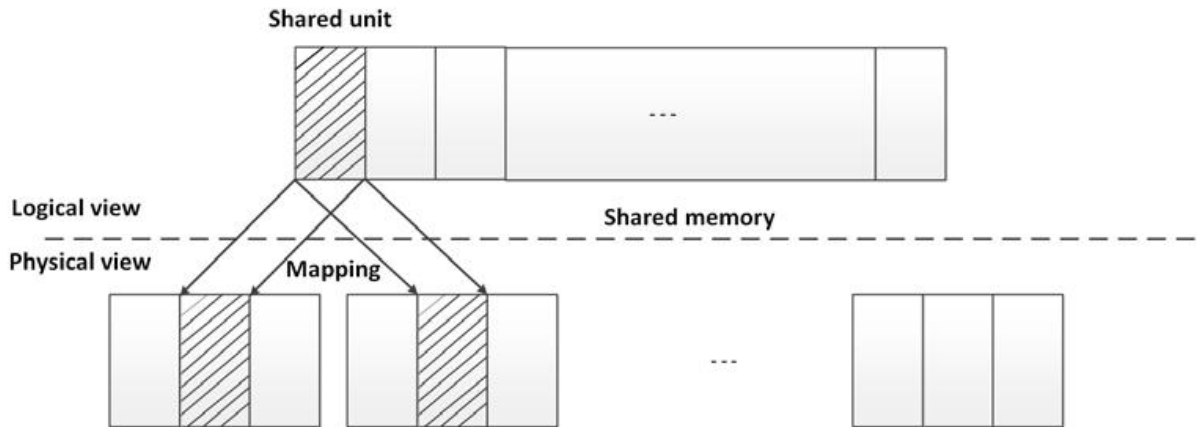

Figure 6: Distributed shared memories

3.1 Improve the overall level of human resources

In the development of electric power enterprises, the first thing to do is to say that the supply and demand of human resources tends to be standardized, human resources management planning should be reasonable, to meet the demand and supply of professional talents for each post. It is good at absorbing and accepting fresh blood, such as introducing excellent professional talents, implementing targeted training, increasing matching cooperative schools, ensuring openness and transparency in the admission of talents and selecting the best, so as to meet the demand for talents in the development of enterprises. Secondly, pay attention to enterprise training, and regularly carry out standardized learning and training work of employees. Internal employees pay attention to the training work of the enterprise, set targeted training programs to ensure that each employee's skills and professional knowledge, improve the level of human resources, and ensure the quality of their own work.

3.2 Constantly optimize the internal management system

The Times are progressive development, electric power enterprises in the administrative work to speed up reform and innovation, keep up with the pace of The Times. First, the management began to change the inherent thinking, the traditional model is no longer suitable for the rapid development of enterprises, should be based on the original model of reform and innovation. Second, the management concept and mode of the planned economy system should be combined with the new thoughts of The Times to change. Third, starting from the objective law of economic development, the rules and regulations are scientifically improved, and the mode and enterprise after innovation.

Closely combined with the actual situation of industry development, and constantly optimize the internal management system, for the long-term stable development of power enterprises to lay a solid foundation. For example, in electric power enterprise A, A budget management committee organized by the manager of the company should be established as the decision-making body of budget management. The budget management office composed of the financial department is mainly responsible for the daily budget management. The functional departments of the enterprise are responsible for the budget management and mainly carry out the budget preparation and implementation. In addition, A power company should revise the original budget management plan and develop a more scientific and sound budget management system.

Table 3: Impact of the Trade Friction on Key Financial Indicators of the Pharmaceutical Industry(Unit: billion yuan)

	Month	Main Business Income	Profit	Total Assets	Loss-making Enterprise Ratio
April	Actual Value	234.81	29.03	3327.12	17.58%
	Predicted Value	250.66	31.57	3399.54	14.94%
	Change Ratio	-6.75%	-8.78%	-2.18%	2.65%
May	Actual Value	228.41	27.56	3369.67	17.60%
	Predicted Value	250.68	31.78	3427.23	14.99%
	Change Ratio	-9.75%	-15.34%	-1.71%	2.62%
June	Actual Value	215.04	32.54	3400.43	17.79%
	Predicted Value	250.71	31.99	3454.90	15.03%
	Change Ratio	-16.59%	1.68%	-1.60%	2.76%
July	Actual Value	207.14	28.14	3420.69	17.87%
	Predicted Value	250.73	32.20	3482.55	15.08%
	Change Ratio	-21.05%	-14.45%	-1.81%	2.79%
August	Actual Value	200.06	27.59	3441.03	18.00%
	Predicted Value	250.75	32.41	3510.17	15.13%
	Change Ratio	-25.34%	-17.46%	-2.01%	2.87%

3.3 Establish and improve the administrative system

The improvement of the management level is not achieved overnight. The improvement of the power management level, the standardization of the behavior of various departments and the guarantee of the working efficiency of enterprises cannot be separated from the perfection of the system. In the electric power enterprises at the early stage of carrying out administrative work, we should combine the current laws and regulations of our country and the actual situation to improve the management system to provide guarantee for its feasibility. Colleague, the formulation of administrative system, to conform to the work process and work content, establish and improve the administrative system, for the management of power enterprises to bring far-reaching significance. Two problems of distributed system storage are:storage-related algorithms and data position access. It's essential to provide good storage design and efficient

After the ultrasonic data set is sent to the system and stored in the DSM, the system will elect the calculation node according to the Bully algorithm, the computational resource node measures. storage spacefacing a set of frequent writing and query data at any time. Patrick O'Neil1 proposed the structure of the log structure merge tree (LSM tree) in his pager, it measure n _ memory c _ memory n _ PE c _ PE*100% cascaded memory and disk components in an efficient way with the merge sort method [4]. The tree set is {C0,C1,…,Ck}, where C0 stores in memory buffer while Ci(i≠0)store in disk array. Though the tree C1 resides in disk, the page node which cited frequently still reside in memory buffer area. The content is inserted into C0firstly and then is moved to C1. Any index entry is hit

to accessin C0 and then within C1. Comparing with diskinjection, the cost of inserting content into memory-resident tree C0is extremely low. However, memory costs and capacity limits the structuresize. When the tree C0 is close to the maximum allocation threshold, it triggers the scrolling merge event to remove the lowhit rate element from the C0 tree by hot and cold zone method to merge them into the C1 tree. Similarly, the structure of LSM tree allows defining multiple components C0, C1, C2...CK-1, Ck, where C0 represents memory resident, others components are disk residents. Each smaller component Ci-1 will be distributed equally to the high component Ci, Ci + 1 ... Ck through the asynchronous scrolling merge method when it is close to the maximum allocation threshold.

4. SYSTEM DESIGN AND IMPLEMENTATION

The distributed system is divided into two modules, DSM and election computing, the researchers useKVM virtualization technology to structure multiple virtual servers and build a virtual network based on the physical server set.The paper proposes a BUS communication model for global information synchronization based on the traditional distributed data transmission model (PUBSUB/SURVEY/REQREP/PAIR).The BUS model stores the distributed data for the entire topology network.Based on the idea of transfer and replication in distributed systems, we consider that one node failure does not cause the DDoS.The solution is to distribute the data in multiple nodes by performing the data multilayer backup. In the SURVEY model, the same information block is sent to the relevant nodeindividually. Its data access patternis sending the inquiry information to the relevant node by the central control node and obtains the data on nearest route node and feeds back to the visitor.

In this paper, we realize the merging and storage of the data node storage and the election of computing nodes through the researchon LSM merging tree and Bully algorithm. The computing node accesses the detector datasets through DSM and separately sends the results to the detector and log storage node which plots the result. The network access forwarding method is used to achieve communication between the detector and the systemwhich is shown in Figure 7 (a). The hierarchical design of the distributed system is shown in Figure 7(b). The researchers implement the fuzzy rules and the least squares coding on the basis of the computing services and application interface provided by the system. The detector utilizes both to achieve deviationdetection and curve recognition.

Because the two variables are defined by the initial values to meet the condition "buy>goods", all users will not succeed to buy the goods. All users will get the massage "buyNOK", which means they cannot buy the goods. So the situation "shop_user!buyOK" will never arise. All the users in the state BUY will turn back to the state INIT, and the states behind the state BUY would never been reached. In the experiments, we also have tried to simulate the actual situation as more as possible, and add the property which we will verify into the process. In the actual internet payment, the quantity of goods bought by each user is not the same. Although we cannot simulate the random number of goods bought by each user, we can define the variable buy=i, approximating the actual situation. Thus, the process can simulate different numbers of goods for each user. Several interesting liveness claims can be made about the Environment Information System. We have described the properties in LTL formula in last section. The experiment shows that the verification of the model of the Environment Information System that does not contain any loops can be done very effectively. The results of these experiments show that there is no error in the design of the Environment Information System.

If we have detected any situation which do not meet the properties in the other model of protocol, SPIN can display these paths. We call these paths as counter-examples. According to the counterexample generated by SPIN, developers have the opportunity to understand wrong business process behavior, to locate errors and to effect right changes for correcting business process design. Then, the modified design is again submitted to SPIN for verification. This methodology determines a gradual correction and refinement of business process models, before it is definitely implemented.
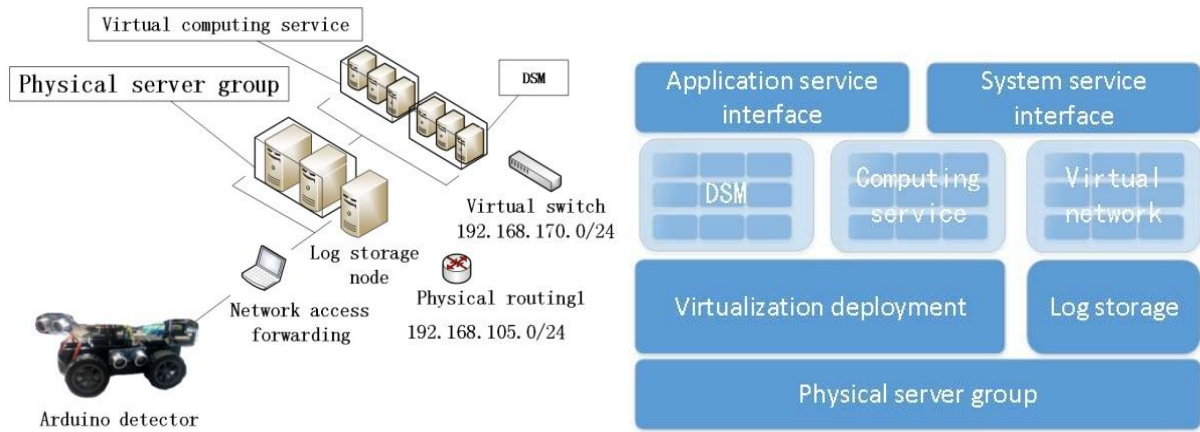
(a) Distributed System PhysicalArchitecture (b) Distributed System Logical Architecture
Figure 7: Distributed system architecture

Table 4: Change Ratios of Financial Indicators in Different Sectors of the Pharmaceutical Industry

Category	Main Business Income	Profit	Total Assets	Loss-making Enterprise Ratio
Manufacturing of Biological Pharmaceuticals	-27.60	-17.00	-4.12	3.29
Manufacturing of Chemical Raw Materials for Pharmaceuticals	-14.29	-2.30	3.81	5.34
Manufacturing of Chemical Pharmaceutical Preparations	-8.72	-15.65	-3.68	2.82
Production of Traditional Chinese Medicines	-14.92	-18.65	-4.33	1.96
Processing of Chinese Herbal Medicines	-31.92	-8.25	-3.69	2.10
Manufacturing of Sanitary Materials and Medical Supplies	-18.68	-9.31	0.56	1.80
Manufacturing of Pharmaceutical Specialized Equipment	4.01	4.48	-1.07	0.59
Manufacturing of Medical Instruments and Equipment	-11.00	5.46	1.17	1.89

If a specification of model has been given in PROMELA, SPIN can search the whole state space of the model; it also can identify unreachable state or deadlock in model. In addition, SPIN can construct a verifier, which can check several claims on the execution of the model. We have established the model of the Environment Information System in PROMELA, and analyzed the properties in last sections. These properties include the values of certain variables at certain points in the code and true statements that can be made about execution states (state properties) or the paths of execution (path properties). In this section, we present various kinds of verification that can be performed on a PROMELA model described in the sections above. Using SPIN and the PROMELA specification presented above, several properties of the execution of the model were verified. These properties were verified as part of several experiments described below. For each experiment, the size of the model constructed by SPIN, the time for verification were measured. The experiments were carried out on a 2.0GHz Pentium duel machine with 2048MB of memory.

First we have let SPIN perform a full state space search for invalid end states, which is SPIN's formalization of deadlock states, in case of 5 users, buy=2, and goods=100. We have let SPIN perform a full state space search in cases of 1-5 users, and the variable buy=2, goods=100. The results are summarized in Table I. The exponential increase in number of states, memory usage and verification time, seems to be not manageable when checking more than 5 users. In case of 6 users, the available physical memory was insufficient.

5. CONCLUSION

To sum up, the reform of electric power enterprises needs to be strengthened in the management of innovation, closely follow the development process of The Times. Starting from the actual situation, combined with the

development trend of market economy, we should take targeted solutions to the existing problems, in order to improve the overall comprehensive benefit as the goal. Solving the problems existing in the management of electric power enterprises at the present stage is a feasible way to essentially change the problems existing in the management of traditional electric power enterprises. The real management of electric power enterprises is implemented in every functional department and every employee, which mobilizes the enthusiasm of employees, improves the management mechanism, and lays a solid foundation for the development of electric power enterprises. In this paper, we introduced a model checking approach to verify the Environment Information Systems. First we analyzed the general Environment Information System s, including the internet payment protocol, the participants of the payment transactions, and the massage flow in the system. We proposed an EFSM model, and translated the model in PROMELA. We also summarized a set of LTL formulas that can guarantee the reliability of the transactions. And then we did some experiments, which can prove that our model can simulate the actual transactions. Also the initial results on the verification of the Environment Information System using SPIN were provided. Our approach can be easily extended to support model checking debugging new design of the Environment Information System s using the SPIN tool. The designers may simulate their active applications with our method.

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