Hindawi
Mobile Information Systems
Volume 2022, Article ID 9108656, 11 pages
https://doi.org/10.1155/2022/9108656

Research Article

Development Countermeasures of Business Management Informatization Based on Machine Learning Algorithm

Huiya Chen

Kyonggi University, Suwon-si, Gyeonggi-do 16227, Republic of Korea

Correspondence should be addressed to Huiya Chen; 604002@stu.wzu.edu.cn

Received 13 May 2022; Revised 12 July 2022; Accepted 5 August 2022; Published 25 August 2022

Academic Editor: Mian Ahmad Jan

Business management is an important part of social service and governance. With the development of economy and technology, the pressure on enterprises to participate in the market competition is gradually increasing. Therefore, it is particularly important to establish an information-based business management system. However, there are still many problems in the process of informatization development of enterprise business management, which seriously restricts the comprehensive development of enterprises. On the one hand, the existing business management information system lacks effective security and supervision links. On the other hand, there is a lack of professional information technology personnel within the enterprise. Machine learning is a discipline that specializes in how to simulate human learning behavior, and it can continuously learn new knowledge structures to make itself progress and develop. The development of enterprise business management informatization is consistent with the development direction of machine learning itself. Therefore, this paper proposes a business management informatization construction method based on a machine learning algorithm, which aims to further promote the development of enterprises in the direction of informatization and modernization and improve the informatization level of enterprises. Experiments show that with the support of machine learning technology, the level of enterprise business management informatization can reach 82.31%, fully indicating that machine learning can help enterprises innovate management models and improve the level of information management of enterprises.

1. Introduction

In the era of rapid development of information technology, various emerging information technologies have begun to integrate with various industries. In this process, business management has taken the lead in realizing the integration with information technology because of its unique status and role. However, in the process of integration and development, business management informatization has encountered many problems. First of all, the system of business management informatization is not perfect. In the actual informatization construction, there is a lack of effective supervision within the business administration, which can easily lead to work mistakes and information leakage. Second, in the construction of business management informatization, talents are an important driving force for the development of the industry. But at present, there is a shortage of compound information technology talents. The vitality of industry development is insufficient. Finally, the informatization development of business management relies too much on information technology, which also brings hidden dangers to the development of the industry to a certain extent. Machine learning is a comprehensive discipline, so it can fit both the field of business administration and the field of information technology, providing assistance for the integration of the two. With the blessing of machine learning, the integration between business management and informatization construction will be closer, and enterprises can also keep pace with the times in the process of development and continuously improve their own management models and structures. The information construction method of modern enterprise business management information can not only effectively reduce the operation and management costs in the normal production and operation

process of industry and commerce, but also effectively realize the dynamic enterprise business management.

In the development of business management informatization, with the rapid development of technologies such as the Internet, business management plays an increasingly prominent role in corporate decision-making. Many scholars have also turned their attention to this. Starting from the concept of business management, Lazzarini briefly analyzed the methods to improve the level of business management informatization in enterprises. Then he pointed out the problems existing in the current development of enterprise business management informatization on the basis of actual cases [1]. Telli and Aydin pointed out that in the information age, the students of the business administration department and business education department of the university should prepare well in advance so that they can adapt to the development of the times and even become the vanguard of the times after graduation [2]. Sholikhi aimed to study the informatization level of business administration students. To this end, he used descriptive quantitative methods and used 33 questionnaires as research tools. He carried out a series of investigations and experiments with the second semester of UNISBA business administration students as the research objects [3]. Khosravi et al. pointed out that the performance appraisal of business administration has a great influence on the development of society and economy, so a perfect performance appraisal system should be established. Based on this, he linked artificial intelligence with convolutional neural networks and established a corresponding performance research model according to the actual situation [4]. The above experts and scholars analyzed the development of business management informatization from different perspectives and put forward many innovative viewpoints. However, they did not take into account the actual situation of the development of business management informatization, which was out of touch with reality.

Machine learning is a comprehensive discipline that simulates human learning behavior. It can simulate real-world situations to the greatest extent and derive optimal solutions based on it. For this reason, this paper refers to a series of related literature. Zhang et al. proposed to use machine learning algorithms to predict the hourly solar irradiance, for which he designed a solar irradiance prediction model based on machine learning. At the same time, he also designed a comparative experimental model of solar irradiance prediction based on multi-layer feedforward neural network, support vector regression, fuzzy inference system, and adaptive neuro-fuzzy inference system to test the performance of the prediction model [5]. Sahoo et al. developed an ensemble modeling framework based on machine learning and uncertainty analysis specifically to predict changes in groundwater levels. In the process, he selected an input dataset by using a combination of mutual information, genetic algorithms, and lag analysis, and then used the selected dataset in a multi-layer perceptron network architecture to simulate seasonal groundwater level changes [6]. Khosravi et al. used machine learning algorithms to predict wind speed data from the Osorio wind farm. In the process, he also utilized a multi-layer feedforward neural network to predict time-series wind speeds. In order to improve the accuracy of wind speed measurement, he specially trained a machine learning algorithm and added a time domain feature model to it [7]. Wahid et al. pointed out that machine learning can be used to identify and measure the electrical activity of skeletal muscle. He then performed the recognition test 10 to 12 times on 10 adult male subjects aged 20–37, and in the process, he extracted four basic temporal features [8]. The above experts and scholars have analyzed the application of machine learning from different perspectives, but they have not studied the application of machine learning in the information construction of business administration.

After a series of experimental analysis, it can be known that SVM and BPNN have significant advantages in dealing with fraud and impersonation attacks and routing attacks, and the detection and defense capabilities can basically reach 90%. However, its effect in dealing with DOS attacks is not ideal. The level of detection and defense is only 80%. In contrast, machine learning can guarantee a detection rate of more than 85% when dealing with the above attacks. It can also maintain a certain degree of alertness under Dos attacks, the detection time of which is only 3.5 seconds. The performance of talent training based on machine learning can reach 89.1% in terms of information technology capabilities and 92.3% in terms of responsibility. Its comprehensive capacity reaches 93.3%. This fully shows that the talent training model of machine learning can cultivate a large number of qualified informatization talents for enterprises and promote the informatization level of business management of enterprises.

2. Machine Learning and Business Management Informatization

2.1. Business Administration and Information Development. Informatization is an emerging productivity, which is mainly represented by intelligent tools. Among these intelligent tools, computers are one of the most widely used and common tools at present [9]. When tools and the human brain combine and collide, the tools can bring the corresponding productivity to the society. The productivity generated in this collision process is a typical product of information technology, so it is called information productivity, which can benefit the society once it is well used [10]. The three major technologies have been polished over time, enabling the rapid development of enterprise informatization. At the same time, it provides a great guarantee and technical support for the enterprise, so that the sub-brands of the enterprise can slowly achieve sustainable development, thereby further improving its competitiveness in the market. Meanwhile, informatization has an irreplaceable role in promoting economic development. It can change the traditional management mode of enterprises and effectively control and manage various processes of enterprises.

The construction of information technology is never-ending, so it attracts many capable people to explore it. Under the joint research of many experts and scholars,

people have finally reached a series of consensus about informatization [11]. First, the process of using and exploring information technology is actually the basis of information technology construction [12]. Second, the core of informatization construction is to improve the efficiency of information resources utilization and reduce unnecessary information energy consumption. Finally, the construction of information technology cannot be separated from the support and backing of the real industry, so all the epitaxial products are important cornerstones of the construction of information technology. During the practice of informatization construction, informatization is gradually extracted from people and new concepts of informatization are derived. At the same time, these concepts of informatization collide with each other and continuously form the six main elements. At the same time, these elements can be summarized as: information network, information resources, information technology, information industry, information regulatory environment, and information talents. One of the six elements of the information technology relationship diagram is shown in Figure 1.

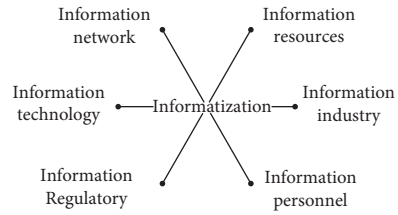

Figure 1: Diagram of the relationship between the six elements of informatization.

Business administration was originally a management and economic discipline, but with the progress of the economy and the times, the discipline of business administration is slowly being given more contemporary requirements. Moreover, with the advent of the information age, business administration practitioners and experts can only better see the dynamic status quo faced by enterprises in society by constantly keeping up with the times, continuously promoting the construction of information technology, and improving the information management level of enterprises and even society. In the context of the era of business administration informatization, only by continuously deepening the reform of business administration informatization can enterprises stand on the tide in the process of development, constantly discover the problems in management and give solutions, and then promote the overall development of enterprises [13]. In addition, with the further development of business administration informatization, the employment and information costs of enterprises will be significantly reduced, further reducing the operating costs of enterprises and increasing the actual benefits and competitiveness of enterprises in the market, which also establishes confidence for enterprises to carry out a new round of informatization construction. However, the development of enterprise business administration informatization does not happen overnight, and its development process is shown in Table 1.

From the development process of business management informatization, it can be known that the emergence of business management informatization is generally driven by business needs. However, with the gradual deepening of informatization, more and more information is processed within the enterprise, which requires higher and higher management of information technology [14].

In the development process of business management informatization, there are many problems in the process of business management informatization due to the effects of many internal and external factors [15]. First of all, the capital investment in the information construction of business management is insufficient. In the process of informatization construction, enterprises often need to invest a lot of capital, technology, and manpower, but this also hinders the current development of enterprises to a certain extent, so informatization construction often faces a dilemma [16]. On the one hand, enterprises hope to develop informatization and realize the upgrading of management capabilities. On the other hand, enterprises are reluctant to invest a lot of money and resources in informatization construction, because the process of informatization construction is often long and the time limit for enterprises to obtain benefits from it is also relatively long. In addition, because the enterprise is the first to carry out information construction, so the construction process is often inexperienced. At the same time, without scientific guidance, it is impossible to convince the board of directors to invest solely on the experience of enterprise managers, which further confirms the problem of shortage of funds. In the process of construction, the company also lacks professional information technology talents, and cannot provide assistance for its subsequent informatization construction. Finally, there are functional deficiencies in the business management informatization system established by the enterprise, so the information service of the enterprise cannot be guaranteed at all. One of the basic elements for the healthy and rapid development of informatization in the business administration department is to have a set of correct and scientific informatization development plans. The current business management information system structure established by the enterprise is shown in Figure 2.

In the information system structure of business management, the business management information system mainly includes the basic information architecture, computer security, information services, information management, and information technology [17]. In this structure, the business management information system can cooperate with other parts to exchange and communicate information. Meanwhile, it can also minimize the waste of resources. However, the system lacks an obvious supervision and security system, which cannot provide a guarantee for the informatization construction of enterprises.

2.2. Machine Learning. Machine learning is a comprehensive discipline that studies human learning and behavior. Machine learning is at the heart of the field of big data and artificial intelligence, and it is one of the main ways to achieve intelligence [18]. Machine learning focuses on how

Table 1: Development history of business management informatization.

Stage	Performance	Representatives	Main
First stage	Electronic business operation	Manufacturing automation	Individual work behavior
Second stage	Business process information	Process combing and information construction	Work organization
Stage three	Knowledge-based business management	Coordinated office system	Enterprise
Stage four	Intelligent business decision-making	Artificial intelligence engine	Overall

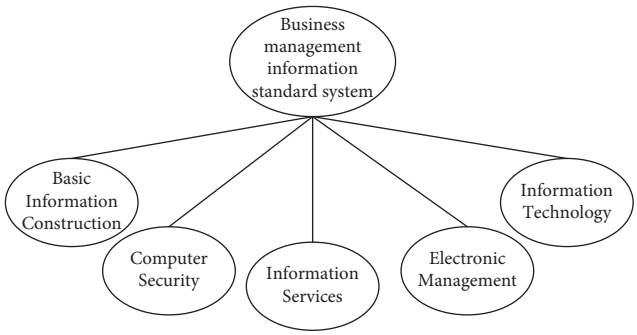

Figure 2: Business management information system structure.

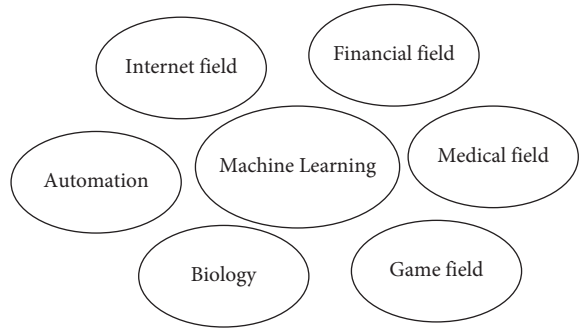

Figure 3: Machine learning application areas.

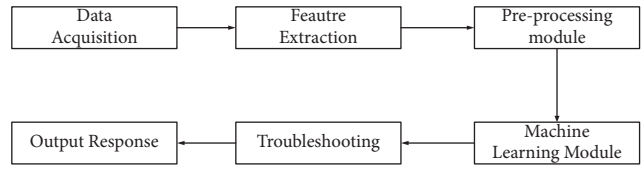

Figure 4: Machine learning network fault diagnosis process.

to simulate human behavior through computers. In other words, machine learning can obtain the optimal solution set that meets the problem through continuous training and prediction, which can further improve the accuracy of the prediction and judgment process [19]. Machine learning involves several research fields, which mainly include linear algebra, probability theory, information theory, algorithm theory, and numerical computation [20]. It is a relatively crosscutting discipline. It is because it covers several disciplines and fields, so its application scope is also very wide, among which the basic application areas of machine learning are shown in Figure 3.

In the development of informatization, network security is one of the most common and influential problems. But in the eyes of machine learning, like general problems, can be solved by continuous training and prediction. Although the network failure will not bring a fatal blow to the informatization construction of the enterprise, the occurrence of the network failure will hinder the process of the informatization construction of the business management of the enterprise to a certain extent. Network failure is a branch of network security problems, so this article will take this as an example to analyze the general idea of machine learning in dealing with informatization problems [21]. Among them, the machine learning network fault diagnosis process is shown in Figure 4.

In the process of diagnosing network faults, the data need to be obtained first to discover the general manifestations of network faults. Then countermeasures can be found according to the symptoms. Next, on the basis of the problem, feature extraction is performed on the data, and then a preprocessing model is built to lay the foundation for machine learning. At the end, what to do is to use machine learning to train, analyze, and output results.

With the deepening of the development of informatization, the relationship between informatization construction and the network is getting closer and closer. Therefore, to ensure the smooth progress of informatization construction, the security of network links must be ensured. On the basis of ensuring network security, the integration of business management and informatization can also be further promoted. Machine models can effectively predict and capture network problems, but the premise is to classify and train data. Among them, the centroid-based classification model is as formulas (1)–(3):

$$C^{(i)} = \frac{1}{\left|C_j\right|} \sum_{x^{(i,j)} \in A} x^{(i)}. \tag{1}$$

$$A = \arg\max_{i} S(x, y). \tag{2}$$

$$S(x, y) = \frac{1}{\sqrt{\sum_{i=1}^{n} \left(x_k - x_{k-1}\right)^2}}. \tag{3}$$

In formulas (1)–(3), C represents the centroid vector, A represents the set of samples with the largest distance from the centroid during the classification process, and S represents the centroid distance, which has two parameters x and y. After classifying the data according to the above classification methods, the relevant data can be started to train. As shown in formulas (4) and (5):

$$f(x) = \operatorname{sgn}(\omega \cdot \varphi(x) + c), \tag{4}$$

$$\omega = \frac{\left(x - x_{\min}\right)}{\left(x_{\max} - x_{\min}\right)}. \tag{5}$$

In this process, f represents the objective function, ω represents the training feature parameters, and $x_{\max}$ and $x_{\min}$ represent the maximum and minimum values during the training process, respectively.

However, from the above algorithm, it can be known that its training effect is not ideal when the data distribution is not uniform. At this time, according to the classification principle, it can be known that the samples located in category A on the left side of the midline will be wrongly assigned to category B. The schematic diagram of the misclassification is shown in Figure 5.

Therefore, in order to solve this problem, the data need to be processed before training so that it obeys a uniform distribution. Assuming that the data are randomly given, the homogenization process of the data is as formulas (6) and (7):

$$f(x) = g\left(\omega^T \cdot x + b\right), \tag{6}$$

$$P(Y = 1|X = x) = \frac{1}{1 + e^{-x}}. \tag{7}$$

Among them, $g(x)$ represents the probability distribution function, which obeys the quadratic distribution. P represents the degree of homogenization of the data, and its value ranges from 0 to 1. If its value is closer to 1, it means that the distribution of the data is more uniform; otherwise, it means that the distribution of the data is not uniform. In order to solve for coefficient ω and offset b of the data, it needs to be differentiated.

$$h(x) = g'(x) \cdot g(x) + g(x) \cdot g'(x). \tag{8}$$

$$J(\omega, b) = -y^{(i)} \log h\left(x^i\right). \tag{9}$$

$$J^m(\omega, b) = \frac{1}{m} \sum_{i=1}^{m} -y^{(m)} \log h\left(x^{(m)} - (1 - y)\left(1 - \log h\left(x^{(m)}\right)\right)\right). \tag{10}$$

Among them, $h(x)$ represents the function after derivation, and $J(\omega, b)$ represents the gradient descent function, which can realize iterative updates of parameters. In the training process, in order to ensure the convergence of the data, the iterative process is as formulas (11) and (12):

$$w_j^{(t)} = w_j^{(t-1)} - \frac{\partial J(w, b)}{\partial w_j}, \tag{11}$$

$$b^t = b^{t-1} - \frac{\partial J(w, b)}{\partial b}. \tag{12}$$

After t iterations, the values of w and b can be basically obtained, and the data can be simply predicted and processed. However, the above implementation is based on a single-target and single-task background. For multi-assignment tasks, the SVM method is the best choice.

$$W \cdot x^T + \mathrm{cx} = 0, \tag{13}$$

$$x3b3; = \rho^{(\mathrm{i})}\left(W \cdot x^{\mathrm{T}} + b\right), \tag{14}$$

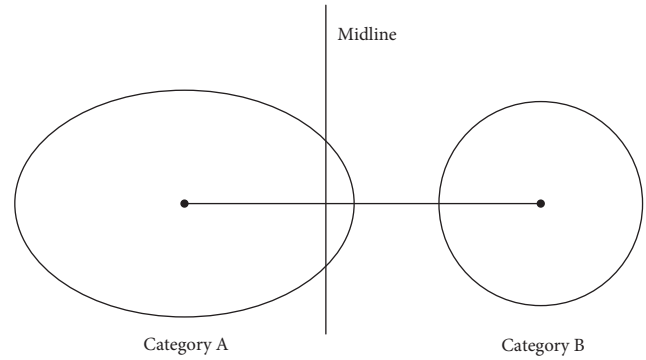

Figure 5: Schematic diagram of misclassification of different categories.

$$\gamma_i = \min_{i=1,2,\ldots,m} \gamma_i. \tag{15}$$

Among them, W represents the weight, c represents the intercept, and γ_i represents the minimum value in the function interval, which is the correctness of the classification. Its geometric meaning can be expressed as follows:

$$\gamma_i = \rho^{(i)}\left(\frac{W^T}{w} \cdot x^i + \frac{b}{w}\right). \tag{16}$$

It can be seen from formula (16) that the geometric meaning of the sample data represents the distance between the sample point and the plane. In this process, the parameters of the data samples can be obtained and used to determine the relationship between multiple targets, so as to achieve multi-target classification.

Then, after collecting certain data and information, network security problems can be detected and checked to prevent network intrusion or other network failures.

$$T_{ij}(t + n) = (1 - y) * T_{ij}(\Delta t), \tag{17}$$

$$\Delta t = \sum_{i=1}^{m} \Delta T_{ij}^k(t). \tag{18}$$

In formulas (17) and (18), T represents the path in the network and Δt represents the information increment on the path. Through processing and classifying the information on the network path, the characteristic parameters of network intrusion can be extracted and processed in advance to ensure the security of information construction. At the same time, according to the above optimal matching parameters, a network security detection model can be initially formed.

$$\frac{\max}{\sigma \longrightarrow 0} P(C, \sigma). \tag{19}$$

$$P = \frac{\tau_{ij}^{\sigma}}{k\tau_{\sigma}^{m}\beta_k^{\sigma}}. \tag{20}$$

In formulas (19) and (20), (C, σ) represents the detection parameters, and P represents the correct rate of detection. In this process, the network guarantee of information services has been basically established. The comprehensive management of network security has also been strengthened. Also based on the above concept, the method can further be

expanded to make it protect the business administration information construction.

2.3. Countermeasures for the Development of Business Management Informatization under the Background of Machine Learning. In the process of development and construction of business administration information technology, it is found that there are many problems in it. Based on this, the above machine learning algorithm is used to improve the construction of business administration informatization, aiming to propose effective countermeasures for the above problems [22]. First, machine learning can simulate human learning to the greatest extent, so it can be used to train information technology talents to continuously meet the business administration information construction of enterprises. At the same time, if enterprises want to occupy a place in the fierce market competition, then they should constantly strengthen the technical training of practitioners and vigorously build a systematic information management structure to achieve the improvement in the efficiency of the use of information equipment, improve the function of information systems, and ensure the efficient operation of all information management work in enterprises. In this process, the emergence of information technology talents can also accelerate the pace of upgrading the management structure of enterprises, which in turn will further promote the training of talents.

Second, based on the theory and practice related to machine learning, enterprises can continuously improve the construction of business administration information technology networks [23]. In the actual development process, network security issues and network failure problems are important factors that restrict the development of information technology in enterprises. Therefore, based on machine learning enterprises can detect and predict the network problems that appear in the information technology construction in a timely manner in order to guarantee the security of the enterprise business administration information technology construction. In other words, only by building a safe and scientific business management information platform can an enterprise further improve the quality and level of the business management process, and ultimately ensure the information security of the enterprise. In addition, enterprises can also strengthen the supervision within the information technology construction through the established business administration information technology network [24]. The combination of the informatization department and the business administration department can, to a certain extent, promote enterprises to carry out modernization as well as improve the modern supervision system [25]. For example, when relevant enterprises build or upgrade their own information technology network systems, they should also simultaneously improve and upgrade the public area network effectively, and continuously optimize the content of the information technology management platform to provide better help for business administration and related supervision work. Finally, although the business administration informatization system previously established by the enterprise can collaborate with other departments and industries for information interaction, the structure of its established business administration informatization system has functional deficiencies. Therefore, in order to improve the structure of information technology construction and avoid a series of security risks, a machine learning-based information technology security and supervision system are re-established, as shown in Figure 6.

In the previous business management informatization architecture, there is a lack of an effective supervision system within the informatization construction, so a machine learning-based security and supervision system is added. In this system, the acquisition of information resources and the distribution of resources must pass the verification of the security assurance module to ensure the security of information. At the same time, in this system, it is also interfaced with information management standards with a view to realizing real-time updates and maintaining the innovative nature of information construction in business administration. On this basis, the establishment of information security and supervision system can further promote the upgrading of the social information management system.

3. Informatization Construction of Business Management under the Background of Machine Learning

The construction of enterprise informatization is inseparable from the network. Therefore, to maintain the achievements of enterprise informatization construction, the security of the enterprise network should be ensured first. Maintaining network security requires enterprises to start with basic network fault maintenance. The basic network fault detection of different models is shown in Table 2.

The problem of a network failure will directly affect the information construction process of business management. Table 2 shows that the HNN model has a good effect in the process of basic network fault detection, and its detection accuracy basically reaches 92.6%. But at the same time, it is also found that its false detection rate also ranked first, reaching 15.6%. In contrast, the network assurance model based on machine learning has a detection rate of 95.2% for basic network failures, and its false detection rate is also relatively low, only 11.5%. This shows that the guarantee model based on machine learning can promote the informatization construction of business administration and guarantee the informatization process of business administration.

After the network security issues are guaranteed, enterprises can carry out business management informatization construction without any worries. In this process, different methods create different values for enterprises. Among them, the early results of business management informatization construction are shown in Table 3.

Table 3 shows that in the early stage of business management informatization construction, the management efficiency of enterprises was relatively low, only 61.2%, and the informatization level of enterprises was only 46.78%.

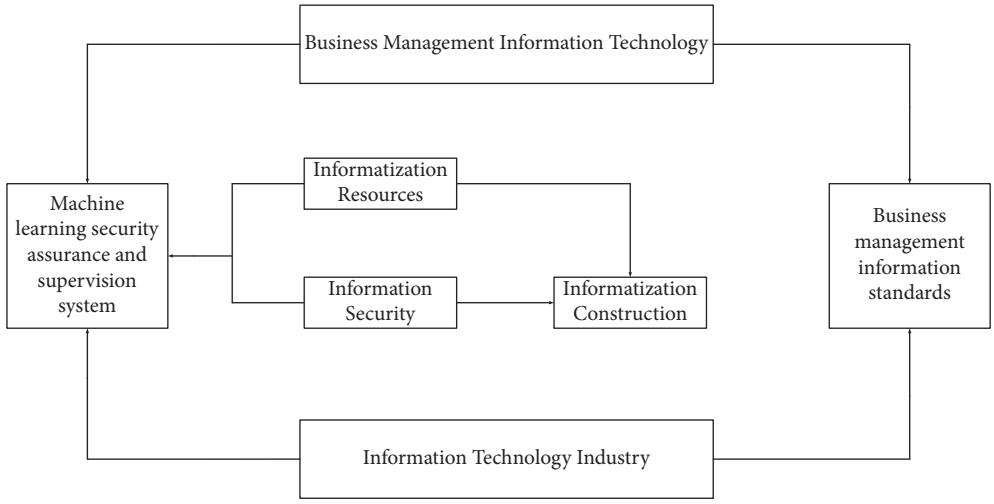

Figure 6: Information security and supervision system.

Table 2: Basic network fault detection of different models.

Models	Detection rate	False detection rate
CBC	0.892	0.762
GCM	0.912	0.695
HNN	0.926	0.744
Ours	0.952	0.885

Therefore, in this process, enterprises have adopted many ways to carry out informatization construction. Among them, the informatization construction of business management based on HNN has improved the informatization degree and management efficiency of enterprise business management to a certain extent, reaching 66.68% and 72.1%, respectively.

However, with the emergence of the wave of informatization construction, more and more enterprises have begun to explore new methods of informatization construction of business management. Under the background of this era, enterprises must vigorously develop informatization if they want to achieve their own development. Among them, the information construction of business management based on machine learning is shown in Table 4.

Table 4 shows that during the construction of information infrastructure, the degree of informatization based on machine learning has reached 63.59%, far exceeding other methods. Among them, in the process of information security construction, the information security level based on HNN reached 69.62%, and the security level based on LOGISTIC reached 68.65%. In contrast, the information security level based on machine learning reaches 76.98%, far exceeding the other three methods. This shows that the informatization construction based on machine learning has achieved remarkable results both in the construction of informatization infrastructure and in the degree of informatization security.

The development of informatization ultimately depends on the cultivation of information technology talents, so this paper aims to explore the cultivation of talents in the construction of enterprise business management informatization. For this reason, this article comprehensively considers the personnel's information technology ability, sense of responsibility, comprehensive coordination ability and comprehensive quality, and hoping to cultivate qualified information talents for enterprises. Among them, the training of business management informatization talents based on machine learning is shown in Table 5.

Table 5 shows that the performance of talent training based on machine learning can reach 89.1% in information technology ability, 92.3% in responsibility level, and 93.3% in comprehensive ability. This fully shows that the talent training model of machine learning can cultivate a large number of qualified informatization talents for enterprises and promote the informatization level of business management of enterprises.

4. Results of the Construction of Business Management Informatization

In the process of promoting the construction of business management informatization, it can be found that there are differences in the degree of informatization in different regions, which affects the informatization process of the business management industry to a certain extent. In order to further narrow the informatization difference between regions, different algorithms are used to simulate the informatization level of different regions. The informatization construction based on machine learning can comprehensively improve the informatization level of regional business management and promote the coordinated development of the region. The regional differences in the level of business management informatization are shown in Figure 7.

Figure 7 shows that the level of business management informatization in different regions tends to be different. Among them, the level of informatization in economically developed areas is relatively high, reaching 74.99%. The level of informatization in economically underdeveloped areas is low, reaching only 49.65%. This fully shows that the

Table 3: Early achievements of business management informatization construction.

Algorithm	Management efficiency	Operating efficiency	Information level
Original	0.612	0.631	46.78
Improved	0.623	0.658	52.92
HNN	0.721	0.772	66.68

Table 4: Informatization construction of business management based on machine learning.

Projects	Infrastructure	Equipment	Security	Convenience
SVM	56.23	59.65	61.56	62.55
HNN	61.36	62.63	69.62	71.22
Ours	66.54	63.96	76.98	79.68
Logistic	63.59	62.11	68.65	68.29

Table 5: Training of business management informatization talents based on machine learning.

Quality	Information technology	Responsibility	Coordination	Comprehensive ability
Machine learning	8.91	9.23	9.12	9.33
Neural networks	8.26	8.65	8.92	9.02
Logistic	8.35	8.92	8.62	8.90

construction of business management informatization based on machine learning can promote the coordinated development of regions and narrow regional differences.

In the construction of informatization, the cultivation of information technology talents is the top priority. In this process, enterprises often adopt different methods to cultivate talents, but the effects of different methods are not the same. Among them, the information technology personnel training under different algorithms is shown in Figure 8.

Figure 8 shows that HNN, machine learning, and SVM algorithms can promote the cultivation of information technology talents and contribute to the construction of enterprise business management informatization. But under the same time, the number of information technology talents trained by machine learning algorithms reached 80, while the number of talents trained based on the neural network was 60. The number of people based on SVM was 70. This shows that the advantages of machine learning algorithms are obvious in the efficiency of talent training.

However, the process of enterprise business management informatization construction is often not smooth, and many problems are often encountered. Network security is a major challenge in the process of informatization construction. In order to ensure the security of informatization construction and ensure enterprise information security, this paper proposes a security assurance and supervision system based on machine learning. Among them, the network security guarantee in the context of machine learning is shown in Figure 9.

Network intrusion is the core of the network security problem. Figure 9 shows that SVM and BPNN have significant advantages in dealing with fraud and impersonation attacks and routing attacks, and the detection and defense capabilities can basically reach 90%. But their effect in dealing with DOS attacks is not ideal, the level of detection and defense of which is only 80%. In contrast, machine learning can guarantee a detection rate of more than 85% when dealing with the above attacks. It can also maintain a certain degree of alertness under Dos attacks, and the detection time is only 3.5 seconds.

In order to further explore the effect of machine learning on the improvement of the level of business management informatization, the article compares the level of business management informatization of the same enterprise in different periods. The informatization degree of business management based on machine learning is shown in Figure 10.

Figure 10 shows that in the early stage of informatization construction of business management, the level of informatization construction of enterprises is not high, which is only 60%. With the support of machine learning technology, the informatization level of business management of enterprises has been significantly improved. In particular, in the middle stage of development, the level of business management informatization based on machine learning reaches 70.53%, while the level of business management informatization based on other methods is the highest at 64.84%. In addition, in the later stage of business management informatization construction, the level of business management informatization based on machine learning

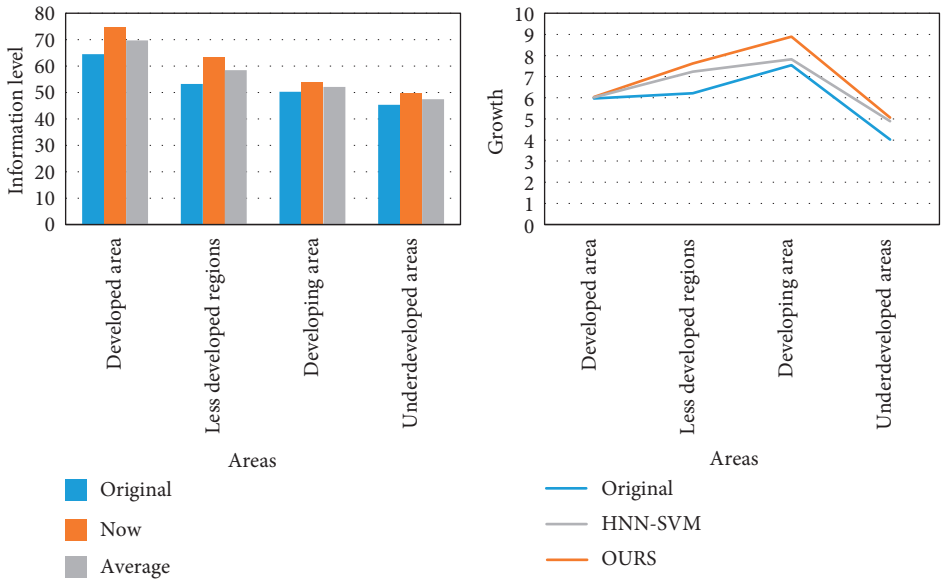

Figure 7: Regional differences in the level of business management informatization.

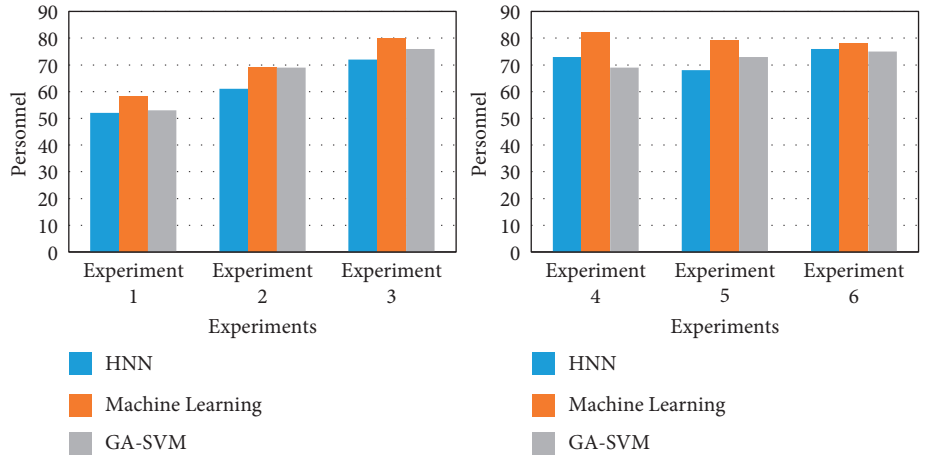

Figure 8: Information technology talent training under different algorithms.

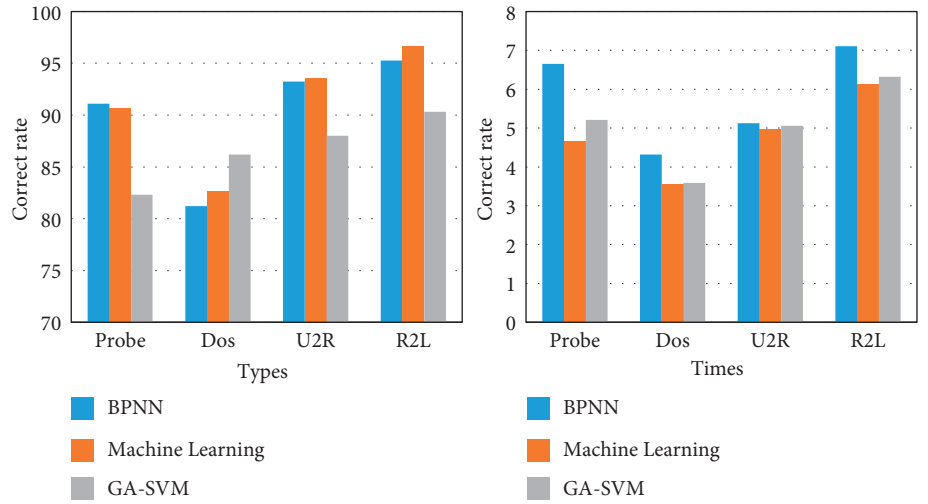

Figure 9: Network security assurance in the context of machine learning.

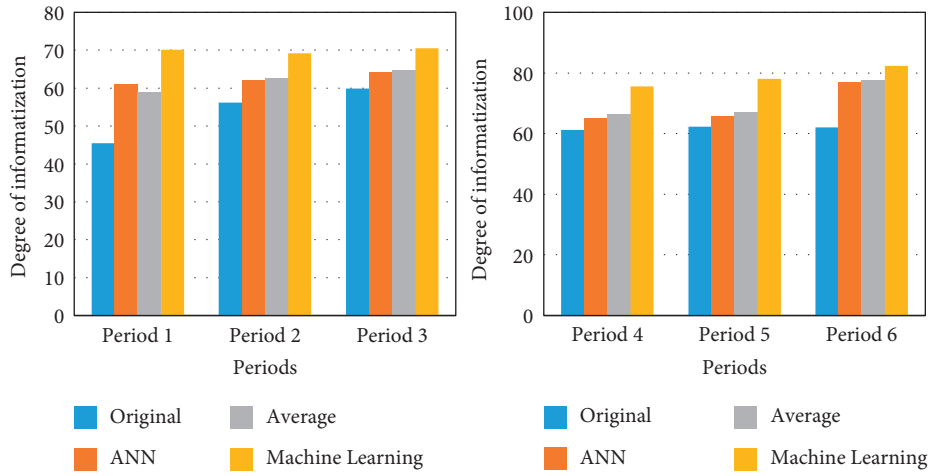

Figure 10: Degree of informatization of business management based on machine learning.

reaches 82.31%. This fully shows that machine learning can promote the improvement of the informatization of business management of enterprises, which can help enterprises achieve better and faster development.

5. Conclusions

The informatization of business management occupies a very important position in both enterprises and society. For this reason, it is necessary to continuously carry out informatization construction to meet the needs of the ever-developing era. Starting from the informatization of business management, the article first analyzes the concept of informatization and a series of problems existing in the construction of informatization. Then, the article introduces business administration and analyzes the advantages of combining business administration with informatization. Second, starting from the concept of machine learning, the article focuses on analyzing the utility of machine learning in promoting the integration of business management and informatization. At the same time, the article also puts forward relevant countermeasures to promote the development of business management informatization from the perspective of machine learning. However, due to time reasons, the article does not expand the informatization to other fields or realize the analogy. In the future, the article will start from the bottom layer of information technology and continue to explore the new trend of information development.

Data Availability

No data were used to support this study.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

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