Enterprise Grid Innovation Management Based on Machine Learning and SWOT Evaluation

Khaled Mohammed Alqahtani

Business School, Shaqra University, Saudi Arabia, 11662 Riyadh, P.O. Box 88058, Saudi Arabia
akhaled@163.com (Corresponding author)

Abstract. The grid management strategy is an innovation of the grid time management mode. Its essence is to divide the management objectives into geographical micro-regional units according to certain standards. Through the grid-based management information system, the information exchange between units and the integration of business activities are realized, thus forming a seamless management system and finally realizing the optimal configuration of management resources. Although the definition, function and mode of grid management and other key issues have not been clearly and universally clarified, grid management is being applied to public life at a highly rapid pace and has achieved relatively obvious results. Yet, few studies apply grid management to enterprise management. On this basis, this study uses machine learning and Strengths, Weaknesses Opportunities, and Threats (SWOT) Analysis (also known as strong and weak crisis, strengths and weaknesses analysis) to analyse enterprise grid innovation management. Six enterprises are selected for investigation and feasibility conclusions are drawn. After the adoption of grid management measures, the work efficiency of the six enterprises and the tacit understanding of employees of each enterprise both show significant improvements. The resource integration of each enterprise is higher than 70%. Among them, the resource integration of Enterprise 2 reach 87% and employees are more satisfied with the work environment, work content, work objects and corporate culture of the enterprise. In general, enterprises can greatly improve their management effectiveness by adopting grid innovation management measures.

Keywords: enterprise management, machine learning, SWOT analysis, grid-based management

1. Introduction

Numerous enterprises now pay attention to their own management and internal coordination so as to realise their rapid development. Without good management measures, the coordination of enterprises cannot be realised, which can bring challenges to their development. Enterprises often encounter a crisis of trust, which hinders their own development. To avoid this crisis, enterprises may benefit from adopting grid innovation management, which necessitates its analysis.

Enterprise management has a long history and has long been analysed in literature. Eshov M evaluated the effect of the coefficient method on the value of enterprise management under risk conditions (Eshov, 2020). Akhmetshin Elvir Munirovich analysed how to improve the management function of the enterprise and explained the level of the internal control system (Akhmetshin et al. 2019). Victor Petrenko assessed the development of the enterprise management system by the functional departments by applying the standard expert evaluation of the functional reliability method (Victor, Petrenko & Psiuk, 2018). Bartolacci Francesca studied the sustainability and financial performance of small and medium-sized enterprises (Bartolacci, et al. 2020). Lechner Philipp analysed the determinants and value of enterprise risk management (Lechner, Philipp & Nadine, 2018). Akimova Liudmyla managed the adaptability of entrepreneurial models as part of enterprise resource planning (Akimova, 2020). Ge Jing studied the maturity of big data management capability of intelligent manufacturing enterprises (Ge, et al. 2020). However, research on enterprise management has not yet involved the analysis of grid management.

Machine learning has various applications in enterprise analysis, on which several in-depth studies have been carried out. Lee In briefly discussed the categories of machine learning, and then introduced the use of its three types in enterprises; the study discussed the trade-off between accuracy and interpretability of machine learning algorithms, three cases of machine learning development in financial services and the challenges that all managers face when deploying machine learning applications (Lee, In, & Yong, 2020). Malakauskas Aidas used data from small and medium-sized enterprises to estimate binomial classifiers for financial distress prediction using logistic regression, artificial neural network and random forest technology. The classic financial ratio was used to estimate the initial single-period prediction factor, and then enhanced by time, credit history and age factors to retrieve the multi-cycle model (Malakauskas & Laktutien, 2021). Xie Qing analysed the application of machine learning in human resource system of intelligent manufacturing industry (Xie, Q). Jamwal Anbesh analysed the application of machine learning in sustainable manufacturing (Jamwal, 2022). Machine learning technology was applied in enterprise analysis, but was not combined with SWOT.

To improve the efficiency of enterprise management, we use machine learning and SWOT analysis on enterprise grid innovation management. First, the defects of traditional enterprise management and then the grid innovation management and machine learning algorithm are introduced. The SWOT analysis of enterprise management is carried out, and the principles, methods and paths of enterprise innovation management are proposed. The effect of enterprise grid innovation management is analysed, and results show improvements in the work efficiency, staff cooperation tacit understanding, resource integration and governance effect of the enterprise after the adoption of grid innovation management. Compared with others' experiments, we combine machine learning and SWOT analysis to analyse enterprise grid innovation management.

2. Defects of Traditional Enterprise Management

Traditional enterprise management has problems such as low protection of intangible assets, loopholes in financing management, lack of attention to supply chain management, uneven use of funds and lack of innovative management concepts, as shown in Figure 1:
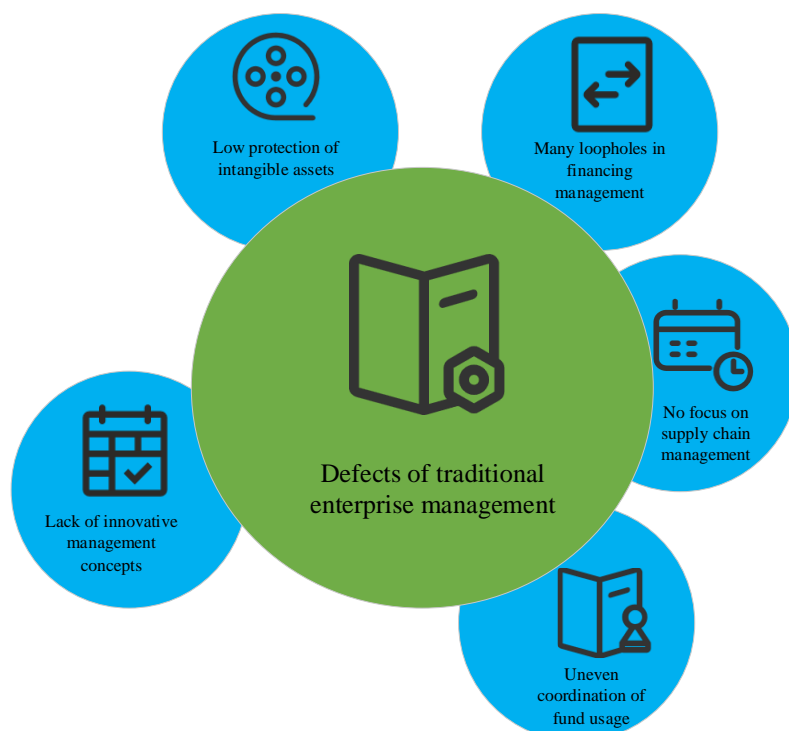
Fig 1. Defects of traditional enterprise management

2.1 Low Protection of Intangible Assets

Traditional enterprises pay more attention to tangible and financial assets. These aspects are therefore the common focus of traditional financial management. However, the management of intangible assets such as human capital investment is not valued, which also leads to the low investment and purchasing power of enterprises in their own brands. This scenario often causes enterprises to continuously develop the market and generate doubts about their products. In addition, the allocation of intellectual capital is too small.

2.2 Large Number of Financing Management Vulnerabilities

The development of enterprises is keeping pace with the times, and is not isolated from society. To maintain the long-term healthy development of enterprises in the market, the cost of financial management must be properly regulated. However, due to the high cost of traditional approaches, the 'profit' of the enterprise has been continuously reduced, thus affecting its interests and responsibilities. The accumulated funds exceed the actual needs of enterprises, and thus their value is not overestimated. It is usually applied at the level of the committee and is largely left to be. This situation not only damages the protection of shareholders' rights and interests but also causes the financial managers to not seriously perform their duties. Thus, the enterprises may encounter potential hidden risks in development and also reduce their competitiveness in the market.

2.3 Inattention of Supply Chain Management

Supply chain management is an important link in the production and circulation of enterprises. In the modern economic management concept, the improvement of supply chain is an important guarantee for the healthy development of enterprises. However, in traditional enterprise management, supply chain management does not attach importance to all aspects of the enterprise budget. Reasonable capital loss leads to risks in the cooperative relationships between enterprises, and thereby to difficulties in cultivating and utilising the relationship and development of the supply chain. The result of not paying attention to supply chain management is to lose important resources to ensure the implementation of financial management, and the dependence on 'adjustment' makes it difficult to control the risk factors. Inadequate prediction of market trends leads to the use of inventory reserves that always need considerable funds to supplement or maintain, which wastes money and time and affect the market's confidence in enterprise production. Therefore, an excellent supply chain management path must be

created, which can not only meet the interests of value but also reduce inventory capital in production and distribution, thus shortening the preparation cycle and saving resources.

2.4 Uneven Coordination of Fund Use
In traditional enterprise financial management, the idea is to implement the overall management system. The enterprise's financial indicators, financial plans and expenditure amounts are all realised by the management and financial departments of each unit. On the surface, this scenario is determined by the overall development of the enterprise, and information communication is relatively monotonous. No feedback is collected, and only the total market share report is provided. The integration of capital flow and physical factor flow has not been emphasized, and capital and physical flow have been clearly separated. To a certain extent, this situation has led to the maintenance of an appropriate logistics base for managing capital flows. Several enterprises pay more attention to financing costs, while others only pay attention to the expected income of investment decisions rather than the actual factors of enterprises after investment.

2.5 Lack of Innovative Management Concepts
In the context of the new era, enterprises need the concept of continuous innovation. Although many enterprises have sufficient experiences in system and management, they still need innovation. Science and technology must be used to develop network information and obtain consumption information for enterprises, which can then produce products that satisfy customers. Despite scientific progress, many enterprises still apply science and technology in isolation today.

2.6 Lag of Digital Marketing in Enterprise Management
The flexible use of the ability of the Internet is necessary for enterprises to sell its own products. Several online enterprises over-promote their own products themselves, which is very different from the actual situation, thus leading to a crisis of trust in the enterprise. Therefore, first, the amount of information to promote its products on the Internet must be large and reasonable to avoid a negative impact on customers' lives. In introducing products, authenticity and reliability must be achieved, and customers must be urged to buy products. Finally, enterprises must also pay attention to timely follow up and communicate with customers to ensure they understand the actual use of the product. Where there are consumers, the market should play the role of the network and seriously serve the majority of consumers.

3. Grid Innovation Management and Machine Learning Algorithm

3.1 Grid Innovation Management
Grid-based governance is based on a unified enterprise and a digital platform, which connects enterprises into a unified whole according to certain standards. Grid-based innovation management has changed the past governance mode of passive response to problems into active discovery and solution. Grid innovation management is a scientific and closed management mechanism, which has a set of standardized and unified management standards and processes, thus forming a closed loop consisting of four steps of discovery, registration, transmission and settlement to improve the management level. Grid management transforms traditional, passive, qualitative and decentralised management into a modern, active, quantitative and systematic approach. In short, grid-based innovation is a new form of enterprise management. Digital and information technology means are used and enterprises, employees and networks are considered as the spatial framework. The management content and the disposal unit are also taken as the subject of responsibility. Grid-based management realises enterprise network and resource sharing through its information platform. At present, grid management plays an increasingly important role in innovative social governance, which is also widely used in the economic field.

The innovation of grid operation service management aims to promote and support enterprises, and improve the overall operation service level so as to integrate resources, create, classify and manage platforms. This approach also establishes a long-term service mechanism, and explores a grid system with clear responsibilities, accurate management and efficient service. Thus, the service concept that the management committee is the 'home of enterprises' is actually used. Grid management can be utilised according to the rules and regulations of the management committee.

Moreover, grid management can be guided by the combination of new regional and industrial

sectors, which is based on the long-term system of 'comprehensive coverage, hierarchical management, hierarchical responsibility, and grid integration'. Multi-ground networking and multi-functional supervision—which takes clear responsibilities, clear roles, standardised processes and flexible operation—are taken as its working mechanism.

The grid management arrangement follows the principle of diversification and periodicity. The first is to establish daily grid connection. The Internet, network regular meetings, mobile network work platform and short message service platform are used to strengthen daily grid communication. Second, regular management meetings are necessary. This includes business seminars, group discussions on grid governance and monthly reports submitted by grid managers to the organisation management according to the content of grid governance. The service efficiency needs continuous improvement, and the economic trend and scientific prediction must shift from post-event analysis to in-process analysis and prediction. In-depth research are also carried out to provide practical and effective products. The third is to organise collective activities regularly, and communicate with employees to enable them to handle their work and life well and increase their sense of happiness and belonging in the new community. Fourth, a system of regular inspection and evaluation must be established. The supervision and evaluation of the grid management work needs to be strengthened, and the work dynamics of each staff member in the grid must be monitored regularly to solve existing problems. Fifth, a system of regular rotation and removal of rotation is also needed. To start the recruitment mechanism and improve the overall quality of all team members, a system of regularly dismissing the head of each roster can be adopted, and the members of the management team must be regularly rotated and replaced with members from the established roster.

3.2 Machine Learning Algorithm

Machine learning is the technical basis of artificial intelligence, and can not only use algorithms to process data quickly but also use statistical models to predict and classify problems. This technology has great potential in the current trend of increasing data volume (Attaran, Mohsen, & Promita, 2018; Huang & Boming, 2019). Machine learning can be used many fields—including scientific research, engineering and business—and its applications are becoming more and more complex and effective. In the research, machine learning is used to identify patterns that are not easily found by humans; in engineering, machine learning is used to improve the ability of technology to solve real-world problems; in business, machine learning is used to better investigate and satisfy customers. In addition, machine learning has also led to important breakthroughs in other fields. Machine learning is very important for solving scientific and engineering problems, as well as practical problems in many fields of life.

Machine learning algorithms also vary greatly due to the data and models used in different real-world problems. The concept of machine learning algorithm can be considered as a program to select the best matching algorithm from a group of candidates to obtain initial results. The inferences from machine learning algorithms vary greatly, which is mainly due to the different data and models used. The data set is divided into training and test sets to collect the best algorithms of different schemes. Many of these methods solve the problem of feature extraction and focus on feature analysis. At the same time of feature input, feature output is also carried out, and the task of machine learning is to find a more accurate feature. Generally, features are expressed in the form of parameters. However, in other cases, the exact form of the feature is unclear, which may consist of a search process, a factor, a maximisation process or a simulation process. Even if the form of the function is not so clear, it usually depends on parameters and degrees of freedom, and the process of learning to find these parameters often leads to optimized performance measures.

Given the rapid development and popularisation of the Internet, a large amount of information has been generated and data analysis has become increasingly easy. Therefore, to obtain a large amount of data and collect different types of information is fairly easy. For each department, information about itself, its competitors, customers and markets can also be collected. The ability to analyse and process information that brings multiple benefits to enterprises is the key to stand out in the market. The results of the analysis can be used to determine the problems and shortcomings faced by the enterprise, and enable better management so that the enterprise can obtain survival and development space. In enterprise data analysis, Support Vector Machine (SVM) plays an extremely important role.

SVM has many unique advantages in solving small sample, nonlinear and multivariable pattern recognition problems, and can be extended to other machine learning tasks, such as feature matching.

In the field of machine learning, SVM is a supervised learning model combined with appropriate learning algorithms, which can analyse data and identify patterns for classification and regression. In mathematical language, SVM can be described as follows:

$$\max \frac{1}{\|\omega\|}, s., t., y_i\left(\omega^T x_i + b\right) \geq 1, i = 1, 2, 3 \cdots n \quad (1)$$

4. SWOT Evaluation of Enterprise Management

SWOT analysis is a comprehensive analysis of strengths, weaknesses, opportunities and threats to help enterprises formulate appropriate management strategies and strengthen their competitive advantages (Vlados & Charis, 2019; Benzaghta, et al. 2021). Figure 2 shows the SWOT analysis of enterprise management:
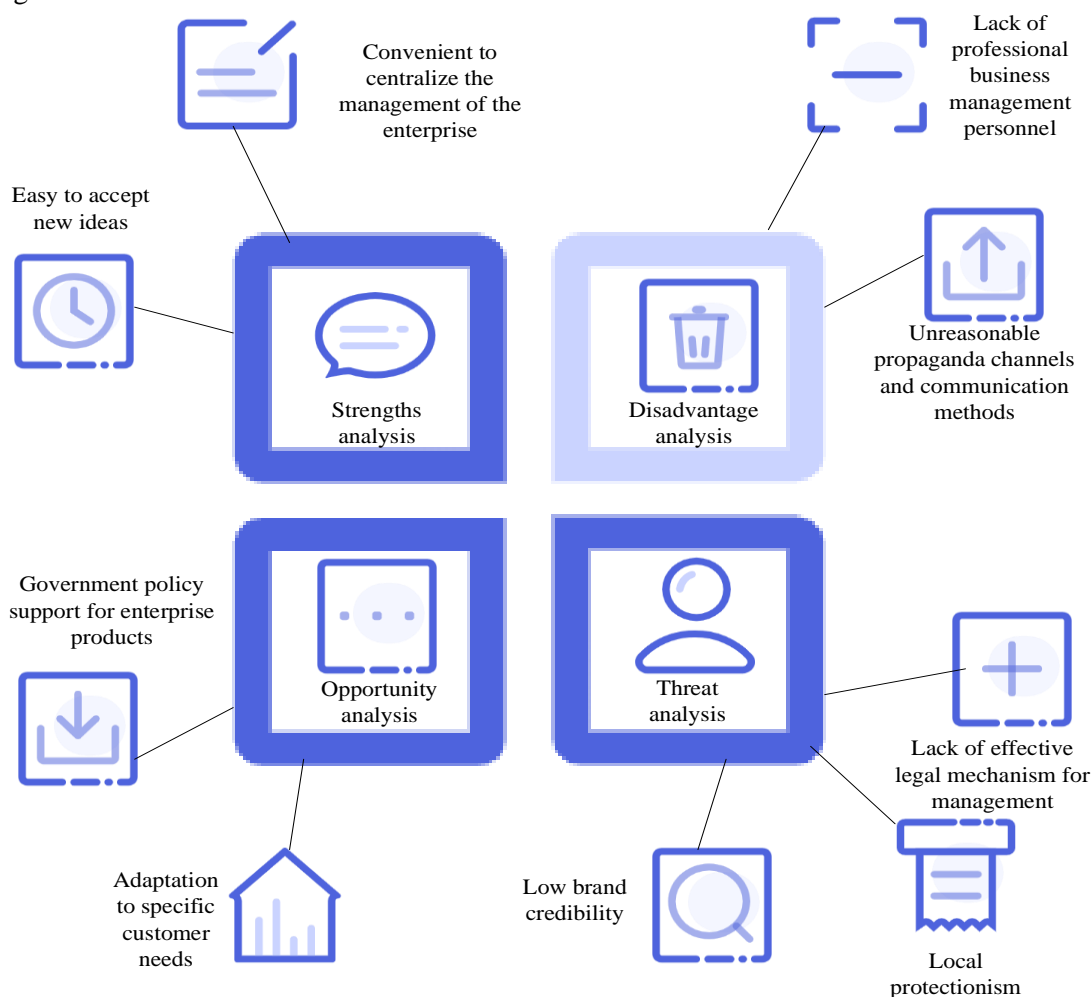

Fig 2. SWOT analysis of enterprise management

4.1 Advantage Evaluation

4.1.1 Easy to Accept New Ideas
Many enterprises can easily accept new management concepts. In the new concept of enterprise management grid, the enterprise is small in scale and has few functional levels. The structure is simple and the new grid-based mode can be applied only with the approval of top management.

4.1.2 Convenient for Centralised Management of Enterprises
In the fierce market competition, enterprises can use one or two of their unique resources to focus on training, and as a personality that differs from other competitors. Grid management makes the internal relations of enterprises closer, and thus facilitating the centralised management of enterprises and

bringing excellent development prospects to enterprise management.

4.2 Weakness Evaluation

4.2.1 Lack of Professional Enterprise Management Talents
Enterprises usually have no ability to carry out business management, most of which is implemented by operators themselves. Due to the lack of specialised training for managers, enterprises lack specialised enterprise management personnel. Generally, enterprise management is not high-level and is prone to problems. Managers are unable to timely understand the market changes and make corresponding adjustments, thus hindering the construction of enterprise management.

4.2.2 Unreasonable Publicity Channels and Communication Methods
When enterprises adopt grid management, they need to use different media for publicity, which is also the enterprise management strategy. However, enterprises often rely too much on advertising in their propaganda, which leads to neglect of the core value of advertising channels. This scenario not only has no effect but also increases the sales volume and hinders enterprise management. In terms of enterprise communication, enterprises should fully understand the situation of enterprises, and conduct scientific positioning, so as to adopt brand communication methods such as sports marketing and public relations marketing to achieve enterprise management effect.

4.3 Opportunity Evaluation

4.3.1 Government Policy Support for Enterprise Products
Enterprises are the centre of national and regional economic development and are valued and supported by national and local governments. Given the property right system of 'administrative economy', the government attaches great importance to local enterprises, and therefore provides them with policy support and financial assistance that reduce enterprise costs. At the same time, the local government has increased the investment in the infrastructure of the industrial park, and supported the improvement of the infrastructure of the industrial park, so as to make the local enterprises have convenient transportation links.

4.3.2 Adaptation to the Needs of Specific Customers
With the economic growth and the improvement of living standards, people's needs become more diversified and the market becomes more complex. Enterprises can benefit of their unique advantages in technology and resources to provide suitable products or services for individual customer needs.

4.4 Threat Evaluation

4.4.1 Lack of Effective Legal Mechanism for Management
In the context of fierce market competition, enterprises have not been effectively protected by relevant laws. Counterfeiting enterprise products, infringement of trademark rights and other illegal acts have created obstacles to the formation of entrepreneurial culture, especially due to the imperfect legal system of corporate governance. With this lack of clear enterprise management rules and imperfect legal procedures, fully regulating the trademark market and effectively combating infringement become impossible. The lack of appropriate laws increases the cost for enterprises to maintain their trademarks and destroys consumers' confidence in their brands, thereby leading to difficulties in selling their products.

4.4.2 Local Protectionism
Although local protectionism has increased the profits of enterprises, it has reduced the flow of productive capital, thereby reducing the economic efficiency of microenterprises. The higher the level of protection, the higher the labour cost in the region. As more workers are laid off, the cost of the enterprise increase and ultimately the economic efficiency of the enterprise decrease. Therefore, this protection hinders the expansion of corporate brands and, to a certain extent, creates barriers to entry. The current tax system strengthens the 'administrative economy' and encourages market segmentation. The personnel system has brought pressure on cadres at all levels to achieve political results, which

inevitably forces interventions in external competition to protect the interests of local enterprises.

4.4.3 Low Brand Reputation

The management of the enterprise must have a good macro environment and a good reputation. Although most enterprises have a high market share of their products, they have fallen into a vicious circle of competition. Their main brands cannot guarantee their stable profits. Therefore, enterprises do not attach importance to their own brand management. Most enterprises use unauthorized brand names or production models, which reduces the brand reputation of enterprises and even leads to the loss of loyal customers.

5. Principles, Methods and Paths of Enterprise Innovation Management

5.1 Principles of Enterprise Innovation Management

Innovation requires concentration, and enterprises cannot exceed their own capabilities. An enterprise has limited human and financial resources. Only by having a clear customer base and focusing on relatively few products can the enterprises achieve sustainable profit growth. Innovation must be rhythmic, and enterprises must abide by objective laws. Innovation is a series of continuous activities with a fixed schedule and cannot be realised in a single stage. In addition, innovation must comply with industry rules, which must be consistent with the value proposition. Enterprises must realise that innovation serves rather than enslaves them. Throughout the process, enterprises must constantly monitor whether the results of innovation conform to their value proposition. If it does not meet the requirements, the enterprise can decisively give up. In addition to product innovation, enterprises also need to innovate in operation, marketing, intellectual property and management systems. According to the development of enterprises and their competitiveness in the market, an effective management and monitoring innovation system must be developed.

5.2 Enterprise Innovation Management Method

Innovation means that enterprises must systematically and comprehensively consider the organisation, culture, system, strategy and technology to ensure that all elements are fully coordinated and achieve the best innovation effect. The innovation of all employees means that business innovation is no longer limited to technology and research and development personnel but rather must involve all employees. From research and development, production, sales to finance, management and after-sales service—all positions are likely to cultivate excellent innovative talents. Comprehensive innovation means that innovation has become the eternal theme of enterprise development and is a necessity of every department and every employee. Innovation is not a random event but occurs at every moment. Innovation everywhere means that in the context of grid interaction and global economic integration, enterprises must effectively integrate innovation resources around the world to realise the globalisation. That is to say, innovation is everywhere and always.

5.3 Ways of Enterprise Management Innovation

The innovative ways of enterprise management include using information technology to promote the development and forming an internal atmosphere that attaches importance to talents as well as to the construction of enterprise image. Figure 3 summarises the details:
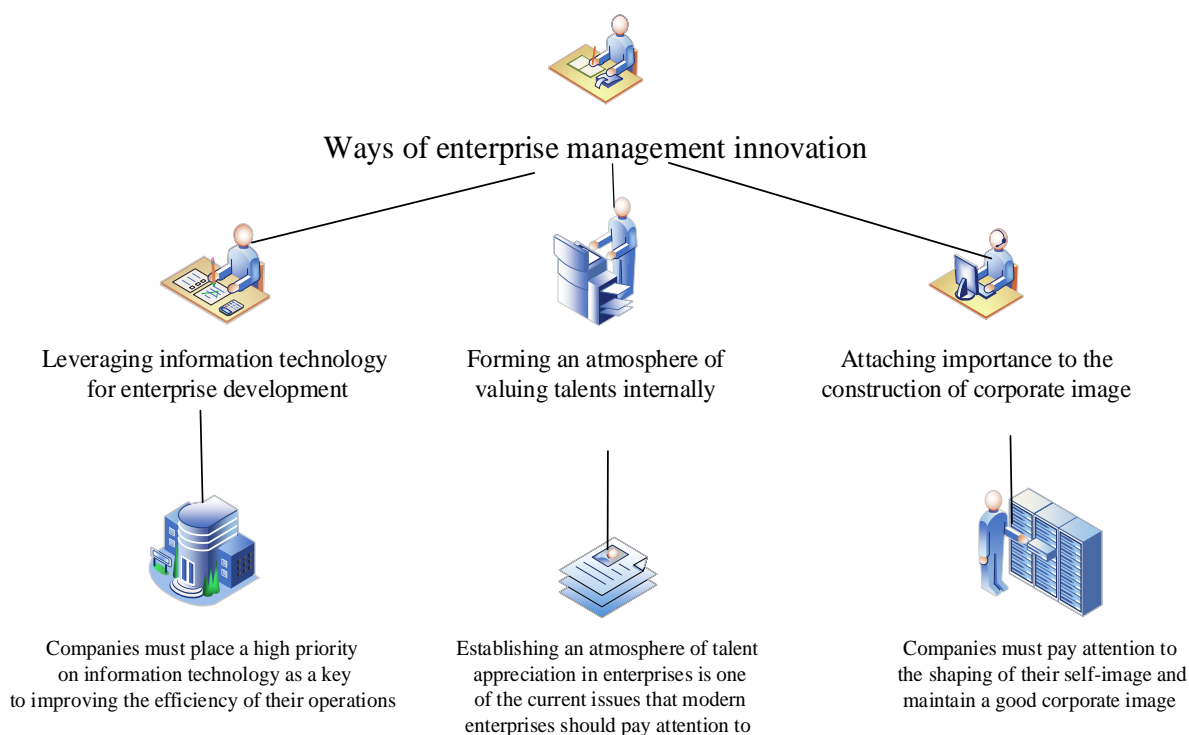
Ways of enterprise management innovation

Leveraging information technology for enterprise development

Forming an atmosphere of valuing talents internally

Attaching importance to the construction of corporate image

Companies must place a high priority on information technology as a key to improving the efficiency of their operations

Establishing an atmosphere of talent appreciation in enterprises is one of the current issues that modern enterprises should pay attention to

Companies must pay attention to the shaping of their self-image and maintain a good corporate image

Fig 3. Ways of enterprise management innovation

5.3.1 Promotion of Information Technology to Enterprise Development

Information technology has changed people's lives and brought assistance to enterprise management. Only by combining development with information technology can enterprises keep pace, thus fully improving the speed of information acquisition and processing and promoting their own development. In the fierce market competition environment, enterprise backwardness means that they are behind. Therefore, enterprises must attach great importance to information technology as the key to improve their operational efficiency and to build the connection of enterprise grid management.

5.3.2 Emphasis on Internal Formation of Talent Atmosphere

The growth and development of enterprises are inseparable from the role of talents. At present, the development of several enterprises is seriously affected by major bias, especially in some high-tech fields. This is because in some high-tech fields, talents even determine the survival of enterprises to some extent. Therefore, the establishment of talent appreciation atmosphere in enterprises is one of the issues that modern enterprises should pay attention to at present. The establishment of this atmosphere requires not only the attention of senior managers, but also the cooperation and efforts of grass-roots managers.

5.3.3 Emphasis on the Construction of Corporate Image

At present, some enterprises have serious integrity problems. In particular, in order to obtain investment or loans, some enterprises have many dishonest behaviors that seriously damage the image of enterprises. The vicious circle caused by this is an unavoidable nightmare for some enterprises. Therefore, enterprises must attach importance to the shaping of self-image and maintain a good corporate reputation. They especially need to rely on the quality of products or services to gain sales. The shaping of self-image is directly related to the future development of enterprises.

In the context of economic globalisation, enterprises need to cooperate with other entities in production to accelerate their development through mutual cooperation. This process of cooperation and exchange has a catalytic effect on the innovation of both enterprises. The construction and design of the enterprise must comply with the 'people-oriented' concept and fully respect the wishes of employees. On the basis of the continuous innovation of modern enterprise concepts, to accelerate the relevant management mode is necessary. In addition, the innovative cooperation between enterprises is required to constantly improve their development.

# 6. Effect of Enterprise Grid Innovation Management

To improve the effect of enterprise grid management, we select six enterprises for analysis and use grid-based innovation measures. The basic information of each enterprise before using grid management is recorded in Table 1:

Table 1. Basic information of six enterprises before using grid-based management

Enterprises	Enterprise management status
Enterprise 1	Insufficient attention from top management
Enterprise 2	Resource investment is hindered
Enterprise 3	Lack of professional enterprise management personnel
Enterprise 4	Enterprise lack of cultural connotation
Enterprise 5	Unreasonable publicity channels
Enterprise 6	Unreasonable communication methods

6.1 Work Efficiency

The grid measures are used to manage the enterprise, which mainly facilitates improvements in efficiency and urges the staff to perform their duties and cooperate to complete the enterprise management. The work efficiency results of each enterprise are reported in Figure 4:
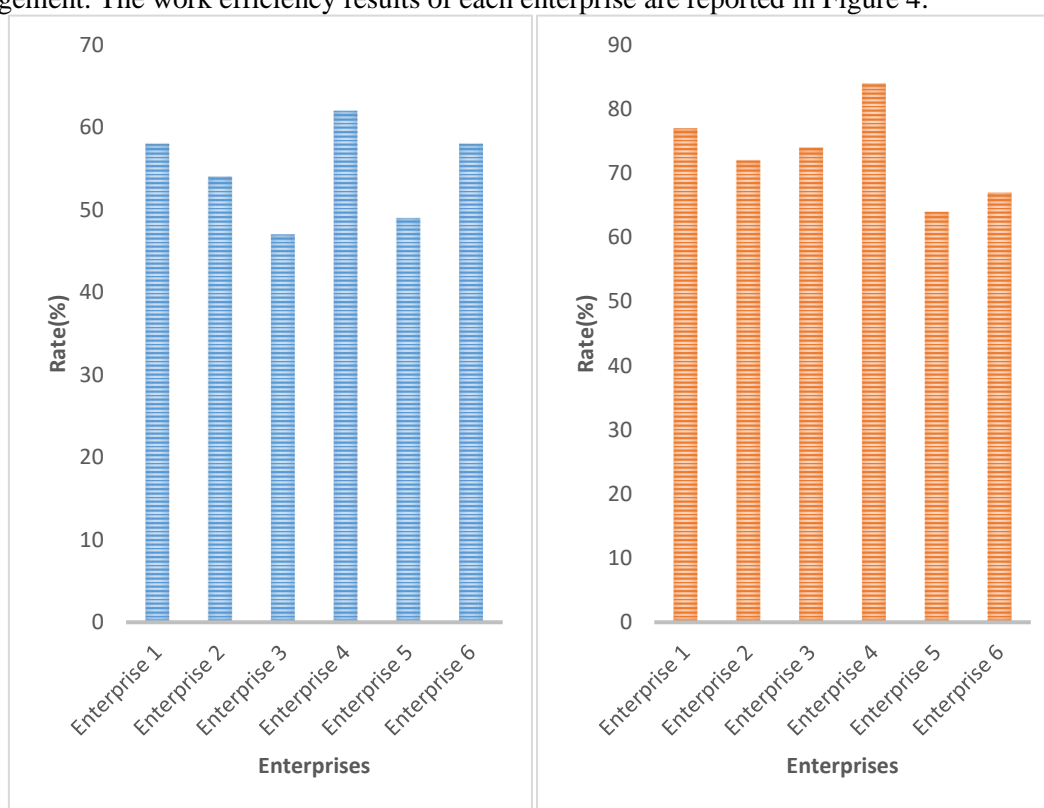
A. Work efficiency before adopting grid-based management
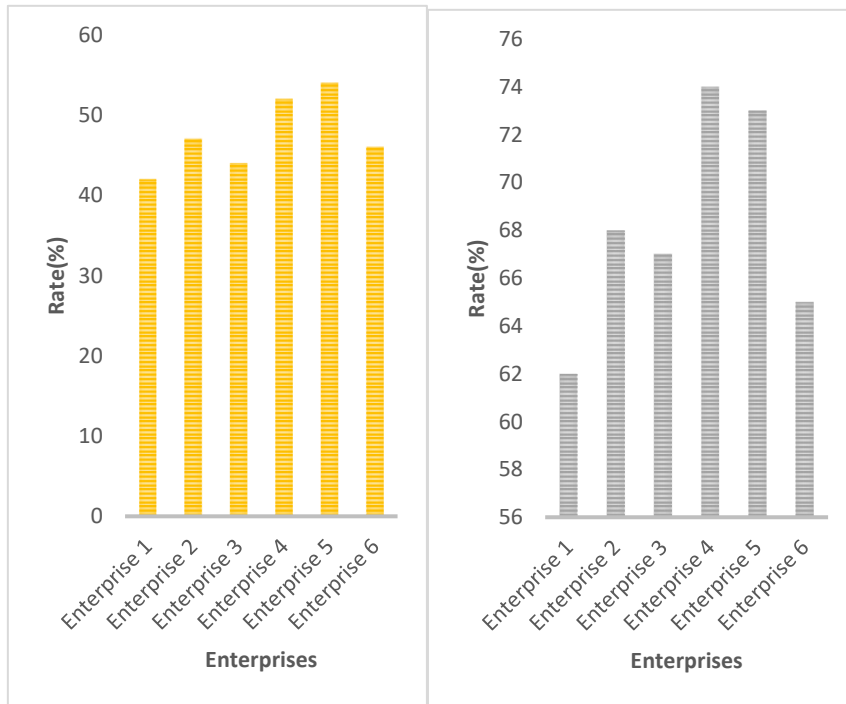
B. Work efficiency after adopting grid-based management

Fig 4. Work efficiency before and after adopting grid-based management

In Figure 4, A and B represent the work efficiency before and after grid management implementation. Before adopting grid management measures, the overall work efficiency of enterprises are as follows: Enterprise 1 is 58%; Enterprise 2 is 54%; Enterprise 3 is 47%; Enterprise 4 is 62%; Enterprise 5 is 49%; and Enterprise 6 is 58%. After the adoption of grid management measures, the overall work efficiency of enterprises are as follows: Enterprise 1 is 77%; Enterprise 2 is 72%; Enterprise 3 is 74%; Enterprise 4 is 84%. Enterprise 5 is 64%, and Enterprise 6 is 67%. These results show considerable improvement compared with before the

adoption of grid management.

6.2 Employees' Tacit Cooperation

After the adoption of grid management, the employees' cooperation ability and their mutual cooperation ability are strengthened. This study investigates the tacit understanding of employees and records the results in Figure 5:

A. Tacit understanding of staff cooperation before the adoption of grid-based management

B. Tavit understanding of staff cooperation after adopting grid-based management

Fig 5. Tacit cooperation degree of employees before and after adopting grid-based management

In Figure 5, A and B represent the tacit understanding of employees before and after grid management implementation: Enterprise 1 is 42% before and 62% after; Enterprise 2 is 47% before and 68% after; Enterprise 3 is 44% before and 67% after; Enterprise 4 is 52% before and 74% after; Enterprise 5 is 54% before and 73% after; and in Enterprise 6 is 46% before and 65% after. In general, the tacit understanding of employees in various enterprises is greatly improved compared with that before the adoption of grid management.

6.3 Resource Integration

The grid management strategy integrates the information of people, land, houses, things and events in the community. The integrated management of affairs is enhanced, thus greatly integrating resources. On this basis, we analyse the integration of resources and record the results in Figure 6:
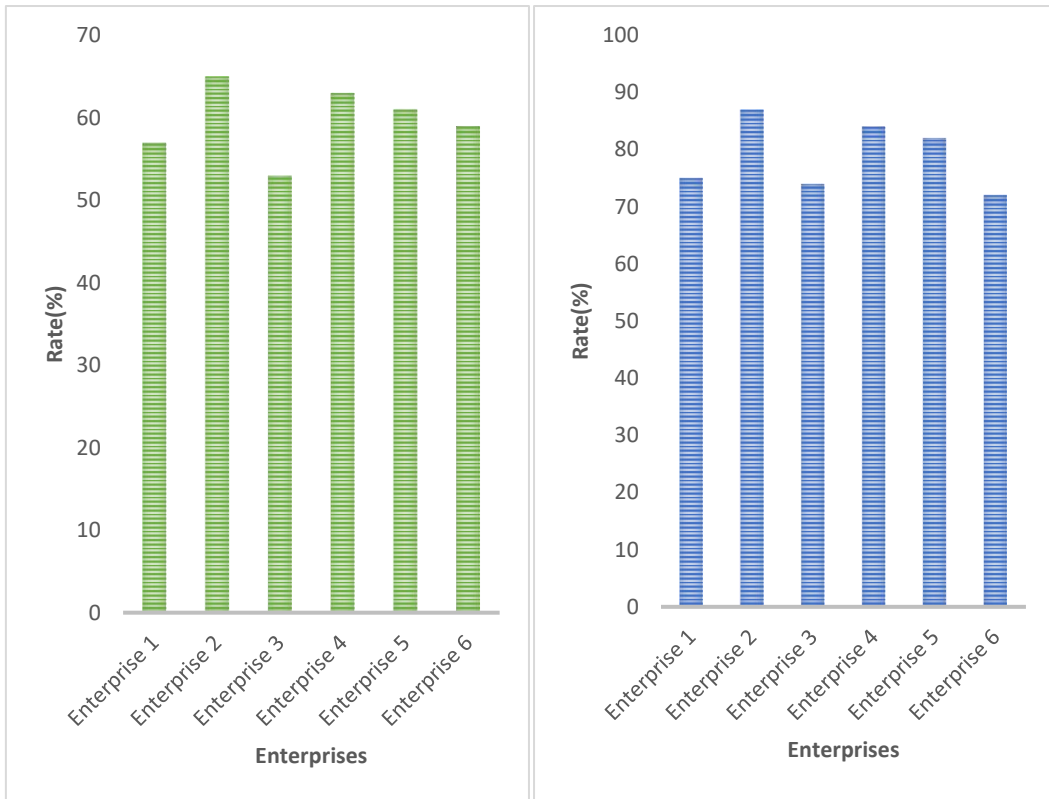
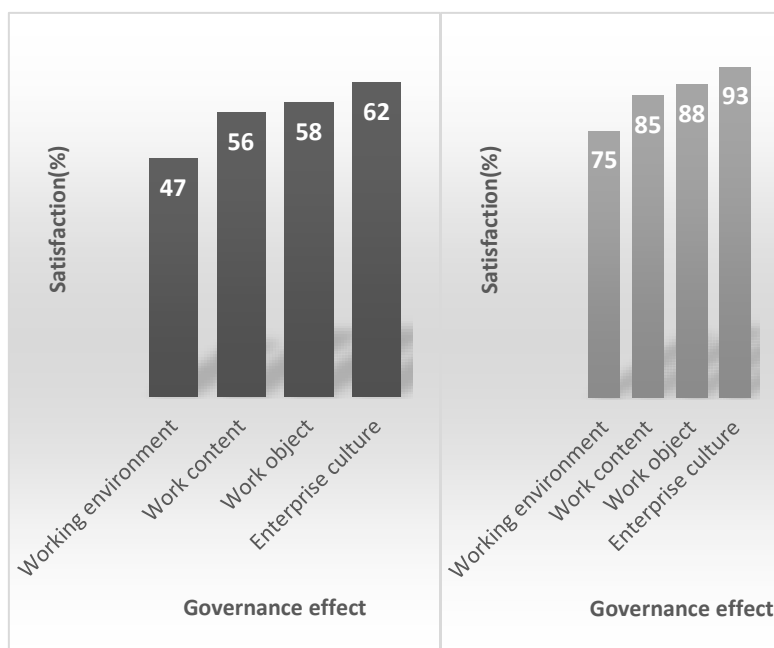A. Resource integration before adopting grid-based management

B. Resource integration after adopting grid-based management

Fig 6. Resource integration before and after the adoption of grid-based management

In Figure 6, A and B represent the resource integration before and after grid management implementation. Before adopting grid management, the resource integration of the six enterprises is less than 70%; however, after adopting grid management, the resource integration increased to over than 70%, and that of Enterprise 2 even reaching 87%. Thus, the adoption of grid management measures can highly improve the resource integration of enterprises, greatly enhancing the resource utilisation rate and the enterprise management effect.

6.4 Treatment Effect

For the analysis of the governance effect, 100 employees from the six enterprises are selected to evaluate their enterprise satisfaction before and after adopting the grid management mode. Figure 7 shows the results:

A. Effect before adopting grid-based management

B. Effect after adopting grid-based management

Fig 7. Governance effect before and after the adoption of grid-based management

In Figure 7, A and B represent the governance effect before and after grid management implementation. Employees' satisfaction with the work environment increased from 47% before to 75% after the adoption of grid management, indicating an increase by 28%; employees' satisfaction with work content increased from 56% before the adoption of grid management to 85% after, indicating an increase by 29%; employees' satisfaction with work objects increased from 58% before grid management to 88% after, indicating an increase by 30%; employees' satisfaction with corporate culture increased from 62% before the adoption of grid management to 93% after, indicating an increase by 31%. In general, after the adoption of grid management, employees are more satisfied with the corporate governance effect, which also reflects that the grid management strategy can greatly improve the corporate governance effect.

7. Conclusions

To improve the governance effect of enterprises, we use machine learning and SWOT analysis to analyse the advantages, disadvantages, opportunities and threats of enterprise grid innovation management, and put forward improvement measures according to its existing problems. The work efficiency, staff cooperation tacit understanding, resource integration and governance effect before and after the implementation of enterprise grid innovation management are analysed. Feasibility conclusions are drawn. After the adoption of grid innovation management, the enterprise's work efficiency, staff's tacit understanding, resource integration and governance effect improve compared with those before the adoption. The grid innovation management strategy shows a beneficial effect on enterprise management. In the future, this grid innovation management strategy can be enhanced to achieve high-level enterprise management.

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