CHAPTER 4
RESULTS AND ANALYSIS

4.1 Analysis of basic information

4.1.1 Background of Novo Nordisk

Novo Nordisk Pharma is a pharmaceutical enterprise and mainly engages in the product lines of commonly used drugs, Insulin development for diabetes treatment drugs, etc. Due to the larger scale, Novo Nordisk Pharma establishes the subsidiaries in the different regions of China and realizes the regional management, and the rich product lines win the great market competitiveness for Novo Nordisk Pharma. At the beginning of the establishment of the company, Novo Nordisk Pharma defines the enterprise development idea of focusing on the high-tech drug development and high-quality drug service based on the market judgment and self-positioning, and puts forward the long-term objective of establishing the world-class drug manufacturing enterprise based on the globalization and drug industrialization.

At present, the total investment scale of Novo Nordisk in China has reached nearly RMB 350 million, the number of staff is 3500.

At present, Novo Nordisk implements the group-oriented management mode. The different subsidiaries keep operating under the group's overall institutional framework, and the main function of the parent company's human resources department lies in the management of branch leadership group, institutional setting, staffing, remuneration system making, etc. However, all subsidiaries have their own human resources management system. With Novo Nordisk human resources management as an example, though it is consistent with the parent company in terms of organization and personnel information management, but the implementation in terms of remuneration and staff training has the flexibility and independence, and the difference of performance management system of the subsidiaries in the different regions is very large.

4.1.2 Current situation of Novo Nordisk human resources management

Upon the research analysis, the problems existing in the company's human resources management mainly include the following aspects:

The company has introduced the modern human resources management idea, but is still in the initial transition stage of the traditional personnel management and human resources management, and the human resources management function is imperfect.

To meet the needs for reform, the company establishes the human resources management department, but this department mainly performs the staff personnel file management, staff salary management, staff recruitment, staff training and other traditional personnel management functions. The staff recruitment planning, selection, quality assessment, performance evaluation and motivation, staffing, career design, training and development and other staff growth managements, as well as the management of the knowledge, skills, IQ and EQ of enterprise human resources individuals, teams and even the whole enterprise organization are gradually improving and introducing, thus restricting the effect of the overall human resources management system of the enterprise.

The standardization of human resources management and business process shall be improved. The standardized process shall be guaranteed by the management system, perfect management system and related technical support. So the overall business and management process still have more non-value-added activities. Such as: At present, for the company's personnel recruitment, the inferior production unit and management department put forward the demand, the human resources department carries out the investigation for confirmation in the related departments but cannot know the actual number of people required by the corresponding position accurately. The recruitment in this case has no a scientific and reasonable human resources demand plan, so that the personnel cannot meet the company's requirements in a timely manner.

In terms of performance management, the company has initially formed a management appraisal system, but the description about establishment of the index standard is fuzzy, the measurement scale is not clear, and the examination and evaluation method is still not relatively scientific and reasonable.

The attendance management also is one of difficulties of the company's current human resources management. Though the company stipulates the regular

spot check of the staff attendance, it is still difficult to master the detailed and accurate attendance information of various departments. And in terms of the departmental benefits, it is difficult to avoid shielding with each other.

The modern human resources management consciousness of various departments is to be strengthened, and the idea of comprehensive human resources management is still lacking. At present, there are still some traditional personnel management ideas inside the enterprise. The staff argue that the human resources management is the duty of the human resources department, and they only provide the complete support. With such opinion, the human resources department has to implement the new plan or policy to almost all staff as a leader, which undoubtedly greatly increases the working strength of the human resources department. But actually, the enterprise's human resources management activities should be originally completed with the joint participation of the enterprise's different roles (general manager, HR manager, line manager and staff), rather than just a duty of HR department. This is the so-called "comprehensive human resources management".

Current training situation. The training management of Novo Nordisk focuses on the company's development strategy and human resources strategy, and establishes the strategic training and development system under the unified planning and unified management with post requirements and ability system based on staff development as the basis and with ability improvement as the guidance. It implements the management mode of overall management and stratified implementation. According to the different training objects, the training of Novo Nordisk mainly includes the management cadre sequence training, professional technical personnel sequence training and new staff training. The training of Novo Nordisk has the characteristics of diversification and refinement. Under such background, the existing training management lacks the training planning, training demand management, training plan management, training implementation management, etc., and the dynamic adjustment and optimization of the training cannot be carried out according to the personnel transfer and market situation.

The human resources management means are relatively backward, and the human resources department staff have heavy workload. At present, the company's

human resources management department still handle various works manually. Though with the computer, it is only used for editing part of documents. For example, the departments submit the related reports to the human resources department within the specified time, the related personnel of the human resources department inputs the data in the spreadsheet for calculation, and then sends the data reports after the calculation to the related departments in paper. For the enterprise human resources management under the guidance of the modern human resources management idea, the data size to be processed is larger, the data are more complicated, and large data analysis and query shall be carried out, so it will cause the low working efficiency in the management link and increase of time cost without an effective and convenient data processing tool, and the repetitive input of a great deal of information will undoubtedly lead to the decline of data consistency and accuracy, thus affecting the company's overall management and operation.

The perfection and comprehensive implementation of the performance assessment system is the difficulty of the company governance. Though the company has been devoting to developing a set of perfect performance management assessment system and additionally establishes the position description, yet it still lacks the effective working analysis method, so it is difficult to decompose a set of perfect and reasonable performance evaluation index system. And the standardization level of the company's performance evaluation index system is lower (evaluation index and evaluation standard are mixed together in the same document and unclear, which is one of reasons of difficult decomposition), the monitoring management mechanism in the evaluation process is lacking, and the majority still follows the traditional performance evaluation means with the experience-based judgment as the subject. The evaluation results fail to be fully used, the tightness and reasonability of the contact between staff's personal performance with their salary and training are to be strengthened, thus realizing the targeted and fair motivation.

The post management efficiency is low. The object of the human resources management not only is the "person", but also includes "post" and "organization". The post is the smallest part in the organization structure, bears a series of job duties and is undertaken by the specific personnel. The post is the most basic component element

in the organization, and only when people match the post, the organization can realize the normal operation. The post and the occupant are the one-to-one. In order to improve the working efficiency, the post requirements and staff quality shall be made for best use, so the quality management and post management are particularly important. The enterprise shall match the staff quality with the post requirements through various ways, such as the integration and design of post according to the actual situation of the existing staff; The enterprise establishes the targeted staff training plan according to the post requirements, and carries out the pre-post training for the staff. The post management means that the company makes the post system management design reasonably for realizing the strategic plan according to the scope of business, work task, development needs and established organization structure as required by the business process and workload. At present, Novo Nordisk cannot realize the post analysis, post evaluation, dynamic tracking adjustment and post system diagram design, and these depend on the support of the information technology.

4.1.3 Current situation for information technology application of Novo Nordisk

Novo Nordisk is optimistic about the application of information technology. At present, the company's office system and financial system realize the informatization construction, but the current e-HR informationalization construction process of Novo Nordisk is slow, and the connection with the office system and financial system has not been made.

Seeing from the software: At present, OA office system and financial SAP system of Novo Nordisk are the information system based on the current mainstream B/S structure, and the human resources management information system is the platinum human resources information system put into use in the end of 2004 and based on C/S structure. Since the system is C/S structure, the connection and data sharing with other information systems cannot be realized. In addition, the organization management of system, basic information management of personnel, simple query statistics and salary calculation function but because is good. However, since it is the non-collectivize version, the degree of support for the branch is not high, and it is only used for the personnel information management.

Seeing from the hardware: Novo Nordisk has its own information resources management department, with the number of staff of more than 30 and outsourced staff of more than 10. The technical force is good, the research and development ability is strong, the office system and most business systems in the company are self-developed. Meanwhile, the company has professional computer room and high-performance server, and can provide good hardware and technical support for the human resources information system construction.

4.1.4 Environment analysis for human resources management of Novo Nordisk

As the market environment of pharmaceutical industry is gradually straightened out and standardized, the pharmaceutical enterprises will face more severe competition, the core contents of competition are more and more embodied in the competition of human resources. Under such business and competition environment, the pharmaceutical industry faces the new challenge of human resources management. The new change brings the impact to the human resources strategy. Especially in terms of talent acquisition and reservation. The unstable market conditions will produce negative influence upon the staff's morale and professional attitude, and competition with other industries will intensify the talent mobility in the whole industry. The main problem in the human resources management of the future pharmaceutical industry will be how to acquire and reserve the existing human resource advantage. The establishment of the entire human resources system is carried out around the talent acquisition and reservation, such as adjusting the organization structure properly, designing the salary system, and establishing the necessary talent pool and talent map.

Analysis on external environment. With more professional business and leading technology, Novo Nordisk is in the relative monopoly position in the industry now. But with the gradual opening of the market, Novo Nordisk will face the strong talent competition, which is mainly embodied in the following three aspects:

First, when accelerating the network layout, the company in the same trade also increases the demand for business talent, so as the leading enterprise in the industry, Novo Nordisk becomes the main source of recruiting talents in the organization in the same trade. From 2012 to 2016, there are 133 persons leaving the

company. Among them, 85 persons enter other companies in the same trade, accounting for 64.24% of the number of the demission.

Second, Novo Nordisk's business is relatively professional, and it requires the practitioners to be proficient in chemical, pharmaceutical and other various aspects of knowledge. The training cycle of such talent is relatively long, and the market stock is lesser, so talents are very rare.

Therefore, what Novo Nordisk mainly considers the issue of attracting talents in terms of the external environment of human resources management.

Analysis on internal environment.

In recent years, the personnel scale and business volume of Novo Nordisk have been grown very quickly, but the internal human resources management environment does not have the corresponding change, which largely restricts the enhancement of the company's human resources management level to a great extent. It is mainly embodied in the following several aspects.

First, the personnel affairs management still dominates quite a number of workload of the human resources department, and the human resources department does not devote much time and energy to the human resources management related to the company's strategic development.

Second, the human resources work does not form the unified planning and unified deployment. At present, all branches are operated according to their respective system and management system.

Third, the human resources work does not form the effective internal process control, and often violates the operation process in some cases.

Therefore, to improve the enterprise's overall human resources management level, develop and retain the core talents, and create a fair, just and harmonious talent growth environment, it is required to establish a unified human resources information platform, for facilitating the communication among the business groups, and finally realizing the collaborative operation between the human resources department and all business departments.

4.1.5 Influence factors for implementation of human resources management system

Upon the above-mentioned analysis on the internal and external environment of Novo Nordisk's human resources, and in combination with the related operation of other enterprises' e-HR informationalization construction, the author summarizes the following influence factors:

Comprehensive implantation of scientific management idea. The human resources management involves the management activities of the enterprise's all departments and requires the participation of all personnel from the general manager to the general staff. Therefore, the modern human resources management idea, especially the comprehensive human resources management thought, shall be understood and supported earnestly by each staff inside the enterprise.

Standardization of business process. At present, the enterprise human resources management process have been basically carried out in accordance with the planning process, but due to the influence of the enterprise environment, there are still individual links being deeply influenced by the traditional personnel management, and there are certain redundancy and non-value-added activities in the process. This requires the enterprise to gradually transform the thought, change the working mode and keep close to the planned standardized process in the reform process, otherwise, the enterprise human resources information system will not be operated normally.

Standardization of management system. Due to the constraints of the enterprise scale and development stage, the enterprise still has the deficiency in the standardization of human resources management system, and is being continuously perfected. In particular, the enterprise shall accelerate the perfection in the performance evaluation mechanism, employee incentive mechanism and salary distribution system.

Standardization of data environment. The establishment of a perfect and standardized data environment is the support for the effective operation of human resources management information system. Though the company is the industrial leading enterprise, its historical data on the human resources management are missing (such as personnel transfer in the past years and prediction information), and the standardization standard is lower (such as performance evaluation index system

information), so it needs some time to make the supplement and perfection, and carry out the standardization according to the requirements.

Strengthening of staff training and promotion of knowledge transfer. At present, the understanding of most staff in the company for the modern human resources management idea, technology and method is still in its infancy, and they feel powerless to promote the enterprise human resources informationalization. Therefore, the company shall strengthen the training for the enterprise's line manager and grass-roots staff, make them know their respective position and role in the system, realize the importance of their work and ensure the timely and accurate data input. In addition, the system knowledge shall be transferred to the enterprise as far as possible for making enterprise get started as soon as possible, and a group of talents who know both the business and management and software technology shall be cultivated inside the enterprise.

Perfection of hardware environment. The comprehensive and informationization of human resources management inevitably put forward certain requirements for the enterprise's hardware environment, so the company shall supply the attendance machine, staff personal computer for query and other hardware equipment on the basis of ensuring the stability of existing network structure and hardware environment, thus guaranteeing the full implementation of system and effective transmission of data environment.

4.2 Reliability and validity analysis

4.2.1 Demand survey analysis for human resources information system of Novo Nordisk

Novo Nordisk hopes to establish an informatization platform which can reflect the modern human resources management idea through the enterprise's internal human resources management information system. This platform shall be connected comprehensively through the Internet, and can realize the unified management, rich functions, stable operation, advanced technology, data sharing, feedback adjustment, etc. Such design of human resources management information system can not only meet the demand of enterprise to carry out human resources management, but also can ensure that the company can constantly improve the management level and can be

applicable to this system. It can not only ensure that the company's internal centralized management can be implemented effectively and meet staff's common demand, but also can realize the diversified and flexible management demands of the enterprise's different departments. In order to ensure the demand of personnel at various levels in the company for the human resources management information system, the system functions shall be predicted prior to the system construction and shall be synthesized. The questionnaire or interview method is used to carry out the survey among the enterprise staff to know their real demand, and the comprehensive design and development can be carried out in combination with the function of human resources management information system.

Staff demand analysis. In the process of the enterprise development, the staff as one of the main factors play an important role. The human resources management is to motivate the staff through the management of the enterprise staff, thus improving the staff's working enthusiasm. The improvement of the enterprise's overall human resources ability can help improve the enterprise competitiveness, thus promoting the sustainable development of the enterprise. The management object of the enterprise human resources management is the staff, so the staff's satisfaction and specific requirements for the current enterprise situation reflect the current management situation of the enterprise human resources. And the establishment of human resources management information system can meet the requirements of staff's participation in the management. In this system, the staff information query, staff development planning and staff performance evaluation can fully improve the ability of the enterprise's existing staff. And the implementation of training is helpful for providing the support for the practical development of the staff. Annex I is the staff demand questionnaire. Through the survey of 300 enterprise staff, the result statistics is shown in table I. The entry term of different staff is classified: There are 70 staffs with the entry term of less than three years, 135 staffs with the entry term from three to five years and 95 staffs with other entry terms.

Table 2 Staff Demand Survey Results Summary Sheet

No	Highly needed	Needed	Partially needed	Not needed	Very unnecessary
1	234	42	0	0	0
2	217	69	0	0	0
3	222	64	0	0	0
4	262	24	0	0	0
5	251	35	0	0	0
6	235	51	0	0	0
7	190	72	14	0	0
8	242	43	0	0	0

Upon the combined analysis of the staff demand results, it can be found that the staffs are very demanding for the self-service function in the human resources management information system, especially the functions related to themselves. Almost all staffs give the "demand" vote.

Human resources demand analysis. The analysis and management of the enterprise data can be carried out through the human resources management information system of Novo Nordisk. The enterprise can reasonably control the number of staff required by the enterprise through the observation and analysis of the basic information of the staff, and the enterprise's human resources information can be effectively integrated through this system, thus helping the centralized management. Thus, it can help the effective implementation for institutional setting of enterprise, number of management staff, post setting, etc. And it can monitor and control the human resources of the enterprise, and the information grasp can help provide certain reference basis for the enterprise in the post setting and personnel allocation. In addition, the enterprise human resources management information system can ensure that the enterprise's specific operation process and human resources management process can be standardized, and the automatic process and standardized operation can be realized in the specific process of human resources management, thus realizing the driving mode of human resources management with the full range and achieving the effective combination of enterprise business process with organization mode. The details can refer to the Annex II. Upon the analysis on the function node in Annex II

and survey for 10 managers and 26 staffs in the enterprise, the staff distribution with the different entry terms is: There are 6 staffs with the entry term of less than three years, 5 staffs with the entry term from three years to five years, and 11 staffs with other entry terms. The entry term distribution of 6 managers is: 3 managers with entry term from three years to five years, and 7 managers with entry term of more than five years. The final statistical results are shown in table 3.

Table 3 Human Resources Management Demand Survey Results Summary Sheet

No	Highly needed	Needed	Partially needed	Not needed	Very unnecessary
1	29	5	2	0	0
2	23	11	2	0	0
3	25	9	2	0	0
4	23	11	2	0	0
5	24	12	0	0	0
6	29	7	0	0	0
7	27	9	0	0	0

Upon the analysis on the survey results, it can be found that the human resources department of Novo Nordisk is satisfied with the overall situation of human resources management information system provided by the enterprise. And upon the specific analysis, it can be found that the salary and institution have the most votes, so the enterprise's manager and staff have the urgent demand for these two items.

Decision-making demand analysis. The enterprise leader's decision is crucial for the overall development of the enterprise, and whether the decision is correct and feasible or not is related to the specific information grasped by the decision maker. The establishment of human resources management information system can support the decision makers' decisions to some extent. With the comprehensive and detailed display of the related human resources information, the leader can know the enterprise's human resources supply at any time through this system, thus providing the information basis for the leader's decisions. Through the survey on the demand for the enterprise's decision-making level, the Annex III is formed. Through the survey on the demand for 4 senior managers and 24 middle managers of the enterprise, and

the statistics and analysis of each personnel's results, the statistical results shown in table 4 are obtained.

Table 4 Decision-making Demand Survey Results

No	Highly needed	Needed	Partially needed	Not needed	Very unnecessary
1	21	7	0	0	0
2	20	8	0	0	0
3	24	4	0	0	0

As the decision-makers of the enterprise, when making the decision about the specific development of the enterprise, they shall analyze the basic conditions of enterprise information and personnel, management information and data, so as to make such information provide support for the decision makers' decisions. Through the analysis of the above table, it can be found that the decision-making function of the system can basically meet the specific needs of the enterprise decision makers.

4.2.2 Reliability and validity test

Reliability test. In the survey process, the questionnaire design divides the human resources information system construction into three levels. According to SPSS18.0 software analysis results, this paper concludes that the overall a coefficient of the questionnaire is 0.778, and a coefficient of all variables is greater than 0.7, which shows that the internal consistency and reliability of survey results of the questionnaire is acceptable. The specific results are shown in table 5.

Table 5 Reliability Analysis Results

	Staff demand	Human resources management demand	Decision-making demand	Standard
Coefficient α	0.812	0.722	0.774	0.7

Validity analysis. According to the analysis results of SPSS18.0, the value of questionnaire data is 0.889, the sphericity test shows the approximate chi-square value is 5917.124, degree of freedom is 442, and Sig. is 0.000, reaching the significant level at the 0.05 level.

Table 6 KMO Value and Bartlett Sphericity Test

Item		Test value
KMO		0.889
Bartlett sphericity test	Approx.Chi - Square	5917.124
	Df	442
	Sig.	.000

4.3 Factor analysis

The factor analysis method uses the principal component analysis for factor extraction, and uses the varimax orthogonal rotation to minimize the number of variables with larger factor load, thus explaining the potential significance of common factor. According to the results in the table below, the factor analysis extracts three factors, and the question item distribution is same with that of three factors in the questionnaire. The first factor load is the staff demand factor, the second factor load is the human resources management demand factor, and the third factor load is the decision-making demand factor.

Table 7 Factor Rotation Matrix Analysis

Factor	Measurement option	Principal component				
		1	2	3	4	5
Staff demand factor	1. Personal information management demand	.874				
	2. Name card management demand	799				
	3. Common application management demand	807				
	4. My salary management demand	809				
	5. My performance management demand	855				
	6. My attendance management demand	.668				
	7. My professional qualification management demand	.803				
	8. Personal setting management demand	.649				

Human resources management demand	1. Staff information management demand		807			
	2. Labor contract management demand		773			
	3. Post management demand		869			
	4. Institution management demand		862			
	5. Training management demand		857			
	6. Salary management demand		869			
	7. Performance management demand		772			
Decision -making demand factor	1. Talent strategic demand			682		
	2. Organization structure demand			675		
	3. Statistical analysis and forecast demand			763		

The above results show that the questionnaire in this research has better reliability and validity, and the load coefficient of various factors in the scale is more than 0.5, so this questionnaire can be used for the formal survey research.

4.4 Correlation analysis

Upon the correlation analysis on the average value and variance of the surveyed items, such as those in table 8 - table 10, we can see that among all item groups, the average value of about 11 items is lower than the intervening value, and the remaining items are higher than the intervening value. Wherein, among all factors, the maximum influence factor is the attendance management demand and performance information management demand, followed by salary management demand and personal information management demand.

Table 8 Analysis on Correlation Factors of Staff Demand

		Minimum value	Maximum value	Average value	Standard deviation
1. Personal information management demand	286	1	5	3.59	1.338
2. Name card management demand	286	1	5	2.92	1.446

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	N	Minimum value	Maximum value	Average value	Standard deviation
3. Common application management demand	286	1	5	3.56	1.353
4. My salary management demand	286	1	5	3.60	1.438
5. My performance management demand	286	1	5	3.73	1.315
6. My attendance management demand	286	1	5	3.91	1.116
7. My professional qualification management demand	86	1	5	3.52	1.254
8. Personal setting management demand	86	1	5	3.87	1.361
Valid N (list status)	86				

Table 9 Human Resources Management Demand Analysis

	N	Minimum value	Maximum value	Average value	Standard deviation
1.Staff information management demand	286	1	5	3.45	1.360
2.Labor contract management demand	286	1	5	3.42	1.252
3. Post management demand	286	1	5	3.47	1.197
4. Institution management demand	286	1	5	3.42	1.195
5. Training management demand	286	1	5	3.24	1.213
6. Salary management demand	286	1	5	3.63	1.227
7. Performance management demand	286	1	5	3.86	1.222
Valid N (list status)	286				

Table 10 Analysis on Decision-making Factors

	N	Minimum value	Maximum value	Average value	Standard deviation
1. Talent strategic demand	286	1	5	2.92	1.307
2. Organization structure demand	286	1	5	3.18	1.131
3.Statistical analysis and forecast demand	286	1	5	3.43	1.023
Valid N (list status)	286				

According to the above table, we can clearly know and feel the demand of Novo Nordisk for the human resources management information system construction. We carry out the final sequencing of the average values obtained from 18 survey items according to three levels of human resources management information construction management demand of Novo Nordisk, and carry out the sequencing the final scores according to the five-grade marking system, with the results as follows:

Table 11 Dimensionality Statistical Analysis

	N	Minimum value	Maximum value	Average value	Standard deviation
Staff demand	9	2.92	3.91	3.5922	.28652
Human resources management demand	8	3.24	3.86	3.5425	.21985
Decision-making demand	7	2.50	3.41	2.9129	.34272
Valid N (list status)	7				

Upon the statitical analysis of three levels in the above table, the top three influence factors are attendance management demand and performance information management demand, followed by salary management demand and personal information management demand. The average scores are 3.59 points, 3.54 points and 3.40 points, respectively. The scores of these three items are higher than the intervening value. On the whole, it shows that the human resources information management system construction of Novo Nordisk produces the significant influence on these three factors. Correspondingly, the average values in two levels of name card

demand and talent strategic demand are close to the intervening value, which shows that the demand is not significant.

4.5 Research results

The implementation of the human resources management system of Novo Nordisk can provide the specific platform for staff to participate in the enterprise management, and play an important role in the different links and department operation process of the enterprises. In this system, the enterprise's internal staff can participate in the enterprise's human resources management, and the staff's personal participation can promote the improvement of enterprise cohesion. At present, Novo Nordisk's staff has been able to select their required training through the human resources management information system, and the enterprise managers can also know the staff's real demand through the system, thus ensuring the implementation of staff's goal and enterprise's goal. The human resources management information system of Novo Nordisk can analyze the organization personnel, enterprise remuneration and organization structure, and these analyses can form many report forms which help the enterprise development, thus helping the company know the change of related information about the human resources management, and then providing the related information for the enterprise leaders and managers and guaranteeing the enterprise's correct decision.