

Research on Incentive Mechanism of Knowledge-based Employees--- Based on CNOOC Tianjin Branch

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ABSTRACT: In the era of knowledge economy, with the increasing demand for talents of enterprises, the knowledge-based employees become the core object of enterprise's human resources management. How to manage effectively and motivate knowledge workers are becoming the most important issue for the modern enterprise human resource management. The article mainly finds out the main incentive issues, and learns advanced concepts from both home and abroad by studying the motivation status of knowledge-based employees in CNOOC (China) Ltd. Tianjin. By studying the incentive system, they can fully mobilize the working mood of knowledge-based employees through the improvement of incentive mechanisms, which gives full play to the enthusiasm and creativity of knowledge-based employees and enhances the overall competitiveness of the company. Meanwhile, it provides ideas and lessons for similar state-owned enterprises.

KEY WORD: CNOOC (China) Ltd. Tianjin, knowledge-based employees, incentive mechanisms

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I. INTRODUCTION

As one of the most important resource elements in the 21st century, knowledge plays a very important role in the value-added of enterprises, and the final application and creation of knowledge need to be completed through its carrier knowledge-based employees. In recent years, with the improvement of education level, the educational background of employees in Chinese enterprises has increased, and the proportion of highly educated talents has increased. It has become an important strategic goal of human resource management to encourage knowledge-based employees and improve the competitiveness of enterprises. Although knowledge-based employees control the level of social wealth creation, the supply of knowledge workers has been in short supply.

As the economic pillar of our country, state-owned enterprises play an important role in the overall development of our country, and CNOOC Tianjin Branch, as a super large state-owned enterprise, is also included. Through the reform and innovation, the state-owned capital will become the strongest, the best and the largest capital to ensure that the state-owned enterprises are on the road of high-quality development. However, as the core competitiveness of enterprises, knowledge-based employees play an important role in state-owned enterprises, which means that the incentive effect of knowledge-based employees in state-owned enterprises will affect the development of enterprises, thus affecting the overall level of development in China.

Among the three major state-owned oil enterprises, CNOOC has been established for a relatively short time. A series of problems have appeared in the company, such as resignation, the increase in the proportion of job hopping, and the increase in management costs. From the side, it shows that there are problems in the incentive mechanism of the knowledge-based employees of the company, which brings certain difficulties to the long-term development of the company. By analyzing the needs of the knowledge-based employees of the company, we can find out the working motivation and formulate the corresponding countermeasures to stimulate the potential ability, so as to promote the growth of the enterprise. This study can also be used as an example to provide reference for other similar state-owned enterprises to formulate incentive mechanism for knowledge-based employees.

II. RESEARCH REVIEW

2.1 The concept and characteristics of knowledge-based employees

The concept of knowledge-based employees was first put forward by American management scientist Peter Drucker (1959). He thinks that knowledge-based employees are those who "earn income through knowledge rather than physical labor."^[1] American scholar Woodruff (1999) put forward the definition of knowledge-based employees: not only has simple knowledge and skills, but also can transform knowledge to make work innovation^[2]. Francis hereby (1999), a famous Canadian scholar, once pointed out that

knowledge-based employees are people who carry out multi brain work. They integrate creativity, analysis, judgment and other methods through their own minds, so as to bring added value to products^[3].

Wang Dongxia (2011) believes that knowledge-based employees are employees with strong innovation ability and rich experience in enterprises, and their work efficiency is high and their contribution rate to enterprise development is the largest^[4]. Yu Jiabin (2014) believes that knowledge-based employees refer to the group that takes knowledge as a way of making a living and creates benefits and knowledge capital appreciation in the company's daily work^[5]. Wang Juan (2018) pointed out that knowledge workers are people who make a living by knowledge and information, pay attention to independence, have personality and learning and innovation ability, and create benefits and capital appreciation for enterprises^[6].

knowledge-based employees are a special group, they have distinct particularity in life and work. They have received higher education and pursue high quality life. Their work is not only the source of income, but also the platform to realize personal value. Whether it is the pursuit of work or the requirements of life, they have distinct particularity. These particularities constitute the characteristics of knowledge-based employees. The characteristics of knowledge-based employees are mainly reflected in the following aspects:

(1) Strong learning ability, want to have independence and autonomy. Compared with non knowledge-based employees, knowledge-based employees usually have received more systematic training in Colleges and universities. They have strong personal ability and strong willingness and ability of self-appreciation. They pay more attention to personal career development. They are rich in autonomy and independence, yearn for a free working environment, and are responsible for innovative work rather than simple assembly line work^[5].

(2) The pursuit of lifelong employability. Compared with the non knowledge-based employees, the knowledge-based employees have a more jumping thinking mode, have a wide range of vision, and their personal needs are often diverse. In addition to the ordinary salary and welfare, they also pay attention to the sublimation of their own ability and the realization of personal value, that is, they are more inclined to pursue lifelong employability and realize their all-round development^[5].

(3) The value evaluation system is complex - it is difficult to measure the results. Compared with the work achievements of non knowledge-based employees, the work of knowledge-based employees is mainly mental work, mainly some innovative ideas, and the expression form of achievements is more abstract, so it is difficult to evaluate quantitatively^[5].

2.2 Classification and content of motivation related theories

The main content of incentive theory research is how to gather more talents and make them willing to stay in the enterprise to create value. Incentive theory can be divided into two categories: one is the "content-based" incentive theory that promotes people's behavior according to the incentive factors, that is, the employee's demand factor; the other is the "process type" incentive theory that describes the stage from individual motivation to creating value for the enterprise.

2.2.1 Content based incentive theory

According to the content-based motivation theory, the satisfaction degree of human needs determines the working enthusiasm and the degree of motivation. The specific content of content-based incentive theory is as follows:

(1) Maslow needs hierarchy theory. It includes physiological needs, security needs, social needs, respect needs and self realization needs. It shows that when the low-level requirements are basically met, they will enter the higher-level requirements, rather than wait until they are fully met.

(2) ALDERFER's ERG theory. It includes the needs of survival, mutual relationship and growth and development. ERG theory does not emphasize the order of the three needs to be satisfied. They can be needed by people at the same time. The less satisfied the hierarchy, the more desirable they are.

(3) Herzberg's two factor theory. The two factor theory emphasizes: health care factors can not stimulate people's enthusiasm, but once they are missing, employees will have dissatisfaction; the satisfaction of incentive factors can stimulate people's enthusiasm and bring value to enterprises. If the lack of incentives, employees will not produce dissatisfaction, but will show slack and negative state in the work.

(4) David McLellan's achievement motivation theory. It includes power needs, social needs and achievement needs. Focus on the research of senior managers, after meeting the basic material needs, to meet their spiritual needs.

2.2.2 Process incentive theory

The theory of process motivation studies the whole process from the formation of ideas to the choice of behaviors. The specific content of process incentive theory is as follows:

(1) Adams' equity theory. It shows that both absolute income level and relative income level will affect the

enthusiasm of employees.

(2) Frum's expectation theory. The results showed that the incentive force (working motivation) = expected value \times potency. Expectation value is the degree to which the employee obtains the corresponding work performance after working hard. Potency refers to the degree to which employees value reward value, and the valence can be divided into two categories, positive and negative.

(3) Skinner's modified incentive theory. It includes reinforcement theory and frustration theory. By correcting and modifying behavior to improve incentive measures, we can stimulate the potential of knowledge workers and create value for enterprises.

2.3 Literature review on incentive mechanism of knowledge-based employees

Mahan tambuk (1989) is the earliest empirical analysis on knowledge-based employees. The research shows that individual growth, work autonomy, business achievement and money wealth are the first four factors that can motivate knowledge-based employees^[29]. we can see that money is not the most important incentive factor relative to the first three items. In recent years, domestic scholars have also conducted empirical analysis and research on knowledge-based employees. For example, LV Yongwei and Wang Zhenzhen (2010) found that the enterprise's salary incentive will have a certain impact on job performance through the survey of job satisfaction^[11]. Guo Tongmei (2016) explored the impact of psychological contract on the motivation of knowledge-based employees through structural equation modeling (SEM), and provided reference for the future development of the company from a long-term perspective^[12].

As an effective incentive content to retain talents, position promotion has also attracted the attention of domestic scholars. The research of scholars Du Pengcheng and Kong Deling (2012) has confirmed that position promotion can stimulate the creativity of employees^[16]. According to the research conducted by Liu Yawei and Zheng Baohong (2015), position promotion skills can not only bring material wealth to knowledge-based employees, but also meet their spiritual needs^[15].

Of course, for the organization, the ultimate goal of knowledge-based employee motivation is to improve performance. Scholars also have many studies in this area. For example, Rousseau (2013) thinks that equity incentive is a kind of salary mechanism. This kind of salary mechanism regards employees as shareholders or potential shareholders in a certain period of time in the future, which makes employees think that the interests of the company are my interests psychologically^[9]. Xu Ning (2013) believes that moderate equity incentive makes executives pay attention to the long-term interests of the company^[13]. Scholars Wu Wenhua and Yao Lihua (2014) believe that equity incentive can make enterprise executives have a desire to take risks and are willing to take development risks^[14].

Material motivation plays an important role in knowledge workers. However, nowadays, knowledge-based employees have diversified needs and pay attention to spiritual motivation. Foreign scholars Zingheim and Schuster (2012) believe that comprehensive compensation strategy, broad development prospects, attractive growth space and comfortable working environment are the incentive factors that need to be paid attention to in the future^[8]. Davenport (2013) thinks that the working environment and other factors of knowledge-based employees will affect their work performance, so as to put forward corresponding strategies^[10]. In recent years, domestic scholars have also studied this aspect. Dou Deqiang and Xue Lei (2016) believed that non-material incentives such as growth incentives and cultural incentives should be paid attention to^[18].

According to the comprehensive analysis of domestic and foreign research, domestic scholars get the main needs of knowledge-based employees, namely the corresponding incentive factors. Wan jiao (2017) believes that knowledge-based employees need salary, growth space, independent work, achievement acquisition and environmental support^[19]. Qu Jingxiao (2017) stressed that knowledge-based employees are the core force of enterprise development. In order to promote the development of enterprises, it is necessary to formulate an effective incentive mechanism for knowledge-based employees^[20].

According to the relevant literature review, we can find that the incentive factor is the demand factor of employees. Knowledge-based employees have changed from material needs to non-material needs. Enterprises should combine the two, formulate the best mechanism to stimulate their potential, so as to improve the core competitiveness of enterprises.

III. ANALYSIS OF THE CURRENT SITUATION OF INCENTIVE MECHANISM FOR KNOWLEDGE-BASED EMPLOYEES IN CNOOC TIANJIN BRANCH

3.1 Company development

China National Offshore Oil Corporation (CNOOC) is a super large state-owned enterprise in China. It is also the largest offshore oil and gas producer in China. The company was founded in 1982, with its headquarters in Beijing. It has four branches: Tianjin Branch, Shanghai Branch, Zhanjiang branch and Shenzhen Branch.

CNOOC Tianjin branch is committed to developing Bohai Sea oil, exploring natural gas, signing oil

contracts and shaping professionals. It is the economic foundation and technical talent guarantee base of CNOOC. According to statistics, in 2017, CNOOC produced 75.51 million tons of crude oil, 25.9 billion cubic meters of natural gas, imported LNG 20.46 million tons, generated 21.3 billion kilowatt hours of natural gas, processed 35.92 million tons of crude oil, and 92.5 million tons of oil products.

3.2 Overview of human resources

As of March 31, 2018, CNOOC Tianjin Branch has 497 employees, with a higher proportion of male than female. Some highly skilled talents in Tianjin branch are mainly engaged in oil exploration and development. As the offshore platform conditions are difficult, almost all of them are male employees. The age of employees is mainly 26-39 years old, which shows that the company's employees are relatively young.

In this paper, the knowledge-based employees are defined as those who have bachelor degree or above, have worked for more than one year, and have worked for more than one year. At present, the company has 260 knowledge-based employees, accounting for 52.31% of the total number of enterprises. It can be seen from table 1 that the proportion of male knowledge workers is still higher than that of women; the age of knowledge workers is mainly 26-39 years old, generally speaking, knowledge-based employees are younger; the number of undergraduates accounts for about 80% of the total number of knowledge-based employees, with the largest proportion of general staff and technical and R&D personnel. Most of them have just graduated from school, almost all start from the grass-roots level, and have a relatively short working age. The specific personnel composition is shown in Table 1.

Table 1: personnel composition of knowledge workers of CNOOC Tianjin Branch (2018)

Factor		Number of people	Percentage (%)
Total number of people		260	100.00
Gender	Male	145	55.77
	female sex	115	44.23
Age	Under 25 years old	25	9.62
	26-29 years old	86	33.08
	30-39 years old	95	36.54
	Over 40 years old	52	20.00
Education	Undergraduate	206	79.23
	Master degree or above	54	20.77
Position	Middle and senior management	47	18.08
	Technical and R&D personnel	75	28.85
	Junior management	55	21.15
	General staff	83	31.92
Working years	1-3 years	31	11.92
	3-5 years	72	27.69
	5-7 years	65	25.00
	7-10 years	42	16.15
	More than 10 years	50	19.20

Data Source: Internal data of CNOOC Tianjin Branch

3.3 Existing incentives

(1) Salary incentive

The income structure of knowledge-based employees includes basic salary, performance salary and bonus. Position, level, education background, length of service wage constitute the basic wage. There is a big difference in post wage. The wage difference of knowledge-based employees at the same level is mainly reflected in their education background and length of service. Performance pay is determined by the completion of the work. If there is no prescribed amount, the company leader will pay it accordingly according to the performance. The bonus consists of attendance reward, overtime reward and year-end reward. If there is no reason to be absent for one week, the full attendance bonus of the current month will be deducted; if one day of overtime is worked on holidays, 100 yuan will be awarded; the year-end bonus is determined according to the annual work performance of knowledge-based employees and the company's profits.

(2) Welfare incentive

In order to maintain stable production, the company pays more attention to the welfare of employees and pays five insurances and one fund for employees. It provides three meals, meals and fitness places on the drilling platform for free. In summer, there are 600 yuan of heatstroke prevention and cooling fee and 600 yuan of traffic subsidy fee every month. A certain amount of telephone fee is set according to different positions, and

reimbursement is made according to the quota every month. Knowledge-based employees are organized to carry out different items every year Objective physical examination; on weekdays, dinner parties will be held to promote the friendly relationship between employees, and large-scale activities such as get-together will be held at the end of the year.

(3) Promotion incentive

Due to the nature of the company is a state-owned enterprise, the traditional promotion mode is still used in the promotion of posts. It is very difficult for ordinary employees to be promoted, especially to the top. The senior staff are also directly appointed by the superior, and the appointment conditions, promotion conditions and assessment contents are not disclosed.

(4) Training incentive

The company provides less training opportunities for knowledge-based employees, and ordinary employees have only one pre job training; most of the company's training exchanges are assigned to senior personnel to participate in the training, and the training effect is poor, which is basically a mere formality.

(5) System

The board of directors formulates and publishes the enterprise development plan, and the employees follow the arrangement of the superior leaders from top to bottom, and the company's system generally does not solicit employees' opinions; the company does not explain the detailed development direction to employees at all levels, and the employees are not clear about their development goals.

3.4 Design and statistics of questionnaire

(1) Design of questionnaire

This paper summarizes the literature of previous scholars, integrates the scattered but commonly used incentive factors in enterprise organization into four aspects: enterprise and external environment incentive, work incentive, personal growth incentive and salary and welfare incentive^[35]. The following 18 incentive factors are extracted to design the questionnaire of this paper. The incentive index system and indicator description are shown in Table 2.

Table 2: Incentive index system and index description

Primary indicators	Secondary indicators	Index description
Enterprise and external environment incentive	Fair environment	In the implementation of rewards and punishments, all employees can be treated equally.
	Enterprise prospect	The management clearly tells the employees of the company's development goals, business objectives and social responsibilities.
	High quality of leadership, trustworthy	The enterprise leadership ability is strong, can lead the enterprise development, can obtain the leader's trust and the communication.
	Team work	The company advocates employee cooperation and team spirit, and will encourage it.
	Communication	In order to complete the common tasks, the staff can communicate smoothly; the management often communicates with each employee on the performance evaluation results.
	Participation in decision making	The opportunity to participate in the decision-making of the enterprise.
Work motivation	Job responsibilities	The responsibilities and authorities of each post are clear.
	Work autonomy	The company will actively allocate work according to the actual situation of employees.
	work environment	Good, efficient and convenient working environment to create a pleasant working atmosphere.
	Job expectations	I have a sense of pride in the company and foresee that I can develop here.
	Valid authorization	Authorized by the leader.
Personal growth motivation	Promotion	The promotion and deployment of employees in the company have clear procedures and regulations, which are well implemented.
	Training opportunities Training effect	The company has established a variety of training channels for employees (such as internal training, external training, etc.); the training has obvious effect on the ability of employees.
	Achievement reward	The company uses the results of performance appraisal in salary, training, reward, deployment and other aspects.
	Career planning	Combined with the qualifications, the company establishes a clear career planning for employees.
Salary and welfare incentive	Salary standard	The company's salary standard is attractive to talents in the region.
	Welfare system	The company's welfare forms are various (various paid holidays, housing, external learning, transportation, etc.).
	Diversified reward system (including spiritual reward)	Rich material incentives and spiritual incentives, both of which are equally valued within the company.

Likert 5 subscale was used in the questionnaire, with 1 to 5 points corresponding to "very agree" to "very disagree". The higher the score, the better the incentive status of the project for knowledge-based employees, higher satisfaction, and lower incentive demand.

(2) Distribution and recovery of questionnaires

The total number of questionnaires was 260, excluding invalid questionnaires. 243 questionnaires were actually recovered, with a recovery rate of 93.5%. A total of 243 samples of the company's knowledge-based employees were investigated. Descriptive analysis was conducted on the samples. The specific situation is shown in Table 3.

Table 3: Basic information of survey samples

Background of subjects		Sample size (person)	Percentage (%)	Effective percentage(%)	Cumulative percentage(%)
Gender	Male	133	54.73	54.73	54.73
	Female sex	110	45.27	45.27	100.00
	Total	243	100.00	100.00	
Age	Under 25 years old	16	6.58	6.58	6.58
	26-29 years old	83	34.16	34.16	40.74
	30-39 years old	92	37.86	37.86	78.60
	Over 40 years old	52	21.40	21.40	100.00
	Total	243	100.00	100.00	
Education	Undergraduate	189	77.78	77.78	77.28
	Master degree or above	54	22.22	22.22	100.00
	Total	243	100.00	100.00	
Position	Middle and senior management	40	16.46	16.46	16.46
	Technical and R&D personnel	75	30.86	30.86	47.32
	Junior management	50	20.58	20.58	67.90
	General staff	78	32.10	32.10	100.00
	Total	243	100.00	100.00	
Working years	1-3 years	29	11.93	11.93	11.93
	3-5 years	70	28.81	28.81	40.74
	5-7 years	60	24.70	24.70	65.44
	7-10 years	42	17.28	17.28	82.72
	More than 10 years	42	17.28	17.28	100.00
	Total	243	100.00	100.00	

Data Source: Questionnaire

According to the analysis in Table 4, the five incentive options with the lowest score are "diversified reward system", "communication and exchange", "training opportunities", "enterprise prospect" and "career planning".

As can be seen from table 4, the scores from high to low are welfare system, working environment, team cooperation, salary standard, achievement reward, high leader quality, self-reliance, work expectation, position promotion, work responsibility, participation in decision-making, effective authorization, fair environment, career planning, enterprise prospect, position promotion, communication and communication, and various reward systems.

Table 4: Descriptive statistics of 18 incentive options

	N	Minimum value	Maximum value	Mean value
Multiple training channels and training opportunities	243	2	4	3.09
Enterprise prospect and development potential	243	3	5	3.09
Salary standard, enough to attract talents	243	3	5	3.51
various forms of welfare	243	2	4	3.75
Work expectation, foresight, self-development ability	243	2	5	3.35
Responsibility, responsibility and authority are clear	243	2	5	3.20
Work independently and allocate according to the situation	243	2	5	3.37
Clear procedures for promotion	243	2	5	3.23
High quality of leadership, trustworthy	243	2	5	3.46
Achievement reward and performance appraisal should be used properly	243	2	5	3.48
Fair environment and equal treatment	243	2	5	3.14
Diversified reward system (spiritual and material reward)	243	2	5	2.98
Communication, smooth communication between employees at all levels	243	2	5	3.05
Team work, promote team spirit	243	2	5	3.73
Participate in decision making, employees participate in the decision-making process	243	2	5	3.19
Effective authorization and leadership authorization in work	243	2	5	3.14
Career planning, establish clear career planning for employees	243	1	5	3.11
Working environment, create a pleasant working atmosphere	243	2	5	3.74

Data Source: Questionnaire

Table 5 shows the incentive status (average score) of the four first level indicators of CNOOC Tianjin Branch on knowledge employees.

Table 5: Scores of different incentive factors of CNOOC Tianjin Branch

	N	Minimum value	Maximum value	Mean value	Standard deviation
Enterprise and external environment incentive	243	2.00	4.33	3.2140	.51453
Work motivation	243	2.33	5.00	3.5802	.54716
Personal growth motivation	243	2.00	4.33	3.1152	.54047
Salary and welfare incentive	243	2.67	4.67	3.4403	.42761

As can be seen from table 5, the scores of the four aspects from high to low are work incentive, salary and welfare incentive, enterprise and external environment incentive, and personal growth incentive. It can be seen that the overall incentive level of knowledge-based employees in the company is good. In the four aspects, the scores of work incentive and salary and welfare incentive are higher, which indicates that the company has done well in material incentive, but the score in personal growth is relatively low. It can be seen that the company has not made incentive measures from the perspective of knowledge-based employees, which is worthy of attention.

3.5 Results of the questionnaire

From the existing incentive measures, we can see that the company's salary and welfare are relatively perfect, but the promotion and training are poor, and there is no open promotion channel; training is an important means for knowledge-based employees to improve their professional skills, but the company has not grasped this effective incentive measure. According to the data statistics of 243 knowledge-based employees, 18 effective incentive factors, such as spiritual welfare, communication and communication, position promotion, training opportunities, career planning, effective authorization and participation in decision-making, have low

satisfaction. The 18 incentive factors can be divided into four first level indicators. From the perspective of the first level indicators, the scores of work incentive and salary and welfare incentive are higher, which indicates that the two knowledge-based employees have higher satisfaction; while the enterprise and external environment incentive and personal growth incentive are poor, which shows that the enterprise has not fully stood in the perspective of employees to formulate corresponding incentive measures, and did not really consider them The demand of. If effective incentive measures are taken from these aspects, the work enthusiasm of knowledge workers will be greatly improved.

IV. PROBLEMS IN THE INCENTIVE MECHANISM OF KNOWLEDGE-BASED EMPLOYEES IN CNOOC TIANJIN BRANCH

4.1 The staff lacks the setting of work objectives and effective authorization

The satisfaction of goal setting and effective authorization is relatively low. Knowledge-based employees are not well involved in the setting of work objectives, and the goals set for employees in the organization can not fully reflect the needs of employees themselves. If the goal is set too high, it is easy to frustrate the enthusiasm of employees; if the goal is set too low, it can not effectively stimulate the creativity of knowledge workers. The score of effective authorization was relatively low in the questionnaire. It shows that the company does not give knowledge-based employees effective power in their work, which hinders the development of knowledge-based employees and can not stimulate the enthusiasm of employees.

4.2 The salary system is unreasonable and the spiritual incentive means are single

In terms of salary and welfare, bonus is not well linked with performance. For some positions, it is difficult to evaluate the performance of some positions. For example, there is no quantitative indicator for the position of general staff. According to Adams' equity theory, employees care about relative compensation. When employees get the same pay for hard work as they don't work hard, they will inevitably have dissatisfaction with hardworking employees. Through the analysis of 18 incentive factors, it is found that the score of "diversified reward system (including spiritual reward)" is low, and the existing welfare policies of the company are mostly material welfare and less involved in spiritual welfare.

4.3 Employees at all levels are unable to effectively communicate and participate in decision-making, and the rewards and punishments are unfair

The overall average score of enterprise and external environment growth is low. Through the analysis of 18 incentive options, it is found that the scores of "communication", "participation in decision-making" and "fair environment" are relatively low. It shows that the senior management of the company has not communicated with each knowledge-based employees on the performance evaluation results, and the effective communication between employees at all levels can not be achieved due to the post level. For the managers who are already in the middle and high-level, the decision-making power is paid more attention, but the incentive status of the company is not good. There are not enough rewards and punishments to treat employees equally. Verbal rewards and punishments will result in the effect of rewards and punishments not obvious, and the incentive effect of knowledge-based employees is not ideal. Therefore, the company has not opened the reward and punishment gap between employees with different performance, which makes employees feel unfair.

4.4 The training lacks scientificity and systematicness, and there is no career planning for employees

The score of personal growth motivation was the lowest. Through the analysis of 18 incentive options, it is found that the scores of "training opportunities" and "career planning" are low. It shows that the company has not provided better promotion channels and training opportunities for knowledge-based employees, can not let the employees see their own development prospects, thus can not stimulate the morale of knowledge-based employees, leading to frequent job hopping.

The current training opportunities of the company are few and the training effect is poor. The company almost leaves the opportunity of external training to middle and high-level managers, while the grass-roots managers only carry out relatively simple training such as safety and corporate culture. The company does not provide corresponding training according to the needs of employees, which loses the role of training incentive and increases the management cost.

The company does not provide career development planning for knowledge-based employees. First of all, for the new employees, they are not clear about their development direction and how to make use of their own advantages to make achievements in the work, so that the motivation of these employees is not high.

V. SUGGESTIONS ON IMPROVEMENT OF INCENTIVE MECHANISM FOR KNOWLEDGE-BASED EMPLOYEES IN CNOOC TIANJIN BRANCH

According to the four key incentive factors of knowledge-based employees in CNOOC Tianjin Branch: work itself, salary and welfare, enterprise and external environment and personal growth incentive, the corresponding incentive suggestions are put forward.

5.1 Planning work objectives, proper authorization and improving development space

Knowledge workers are involved in the process of setting work objectives. Managers can negotiate with employees for a certain goal at any time to make timely adjustment, so that the goal can be completed on time and accurately. What should knowledge-based employees do to achieve their goals? How do you do it? What are the measurement standards and corrective measures? Discuss all concerns and problems that may arise in the process of achieving the goal. This can not only stimulate the initiative of employees in the work, but also cultivate the sense of responsibility of knowledge-based employees, that is, I have a sense of pride in the company and foresee that I can develop here.

The managers of the company need proper authorization. Choose the right job, the right time and the right employee reasonably, give the responsibility and power and the scope of work to the employees who will be authorized, and motivate the knowledge-based employees through authorization.

5.2 Optimize the salary and welfare system and strengthen the spiritual incentive

We should establish a broadband wage system with development space^[25]. It is suggested that the company should set a hierarchical salary for the same post, which can not only improve the current situation that only promotion can bring about wage increase, but also stimulate the enthusiasm and initiative of employees in the short term. According to the characteristics of the position, the salary of 1-3 grades will be set in the same position. For example, the salary of the general staff is divided into three grades. The salary of the third level is the salary of the first level of the grass-roots management personnel. If the employees in the same position "jump" for three consecutive years, they will be directly promoted to one position. When the position is unstable, their working enthusiasm will be improved, which will greatly promote the competitiveness of employees at all levels in the company, which is conducive to the long-term development of the enterprise. When the better the performance of knowledge workers in the post, the higher the salary, the higher the "exit cost" of job hopping, which is conducive to attracting and retaining talents^[25].

Link bonus to job performance. According to the principle of more work, the higher the score of performance appraisal, the more bonus you get, which can not only eliminate the sense of unfairness, but also enhance the incentive effect.

Pay attention to the spiritual welfare of knowledge-based employees. First of all, for the knowledge-based employees who have just entered the workplace, senior leaders should communicate with them to encourage them, which will effectively relieve the pressure and disorientation of new employees. Secondly, the days of annual leave can be appropriately increased according to performance, which can not only effectively reduce the turnover rate of employees, but also improve employee loyalty.

5.3 Establish a fair and harmonious environment and create a good atmosphere

Pay attention to the fairness of rewards and punishments and treat them equally. According to Adams' equity theory, when knowledge-based employees think that the rewards and punishments of the company are unfair, employees will not only have a sense of unfairness, but also bring a lot of negative effects, such as job hopping and resignation. In the process of rewards and punishments, we should ensure that the recipients can be rewarded in time, and those who make mistakes will be punished. The company should pay attention to fairness, and the employees with high positions and low positions will receive the same punishment and reward.

In order to create a good and harmonious working atmosphere for knowledge-based employees, the company should advocate effective communication between middle and senior leaders and grass-roots employees, so that senior managers can get close to grassroots employees and help them solve the difficulties in life and work, so that they can devote themselves to the work. The company should also regularly organize literary and artistic performances to give talented employees the opportunity to show off, release the pressure in work and life, and hold more sports activities, such as basketball games, table tennis games, etc. This can not only promote the friendship between employees, but also make them fall in love with sports, strengthen their physique, so as to better put into the next stage of work.

5.4 Improve the training and career planning system and expand the incentive space

The biggest difference between knowledge workers and non knowledge workers is that knowledge-based employees have a strong desire to enrich their knowledge and skills, so as to develop their potential. According to Maslow's hierarchy of needs theory, this is the highest level of self realization, so there is

a high demand for motivation. In view of the problems reflected in the investigation of incentive status: less training opportunities and poor training effect, the company should formulate a full staff training plan on the premise of ensuring cost-effectiveness.

For middle and high-level managers, they need not only training in senior management skills and senior management communication, but also training in current policies, the latest trends in the industry, and advanced financial management. Senior managers can be assigned to universities or research institutes for in-depth theoretical study, so that they can combine theory with practice and become the leader of enterprises. Technical and R&D personnel should pay attention to skills training, such as drilling technology and a series of skills training, including understanding the research and development status of advanced machines, learning how to operate these advanced machines, and how to operate them can save costs. For this part of knowledge-based employees can be assigned to professional Petroleum Colleges or foreign advanced enterprises to study. For the grass-roots managers and general staff, we should pay attention to the knowledge training of financial management and legal knowledge. The number of these knowledge-based employees is relatively large. Sending outstanding personnel to attend training can not only save part of the management cost, but also encourage them to work hard, so that they can understand that the harder they work, the more opportunities they will have to learn.

Strengthen the formulation of career planning and development. The company regularly carries out career planning lectures to explain the development prospects of each position to knowledge-based employees, so that they have a correct understanding of their own career development. To carry out career counseling for knowledge workers, especially for those who have just entered the workplace, can help to eliminate their anxiety, stimulate their fighting spirit and improve their work enthusiasm.

VI. CONCLUSION

Based on the research on the motivation of knowledge workers in CNOOC Tianjin Branch, the main conclusions are as follows:

(1) The main problems in the incentive of knowledge workers in CNOOC Tianjin branch are as follows: the diversified reward system is not reasonable, the spiritual incentive means are single; the performance appraisal is in vain; the training opportunities are few and the effect is poor; the lack of career planning and the lack of communication among employees at all levels.

(2) This study believes that the reasons for the incentive problems of knowledge-based employees in CNOOC Tianjin branch are as follows: Attaching too much importance to material welfare and neglecting spiritual welfare; there is no complete match between bonus payment and job performance, which makes knowledge workers feel unfair; general staff and grass-roots managers lack of training opportunities and the training content is too simple to achieve The training should be effective; the company has not made relevant career development plans for knowledge-based employees, so they can not see the development goals.

(3) Referring to the previous periodical literature, this paper summarizes four first-class incentive indicators: enterprise and external environment, work itself, personal growth, salary and welfare. From these four aspects, it puts forward the improvement measures of knowledge-based employees in CNOOC Tianjin Branch, and expounds the specific practice of the incentive mechanism.

Due to my limited ability and energy, I have not put forward all the problems involved in the incentive of CNOOC knowledge-based employees in detail, and the corresponding suggestions are not perfect. I will conduct more detailed discussion and research in this aspect in the future.

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