A Study of Equity Incentive Schemes in Technology-based Companies: The Case of iFLYTEK

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Abstract. In modern companies, equity incentives have been widely used to improve corporate governance. However, not all equity incentives can achieve the desired effect of the managers, and if the internal factors of the equity incentive scheme are not set properly, the ultimate benefit is often minimal or even negative. As a technology company, iFLYTEK has implemented a number of equity incentive schemes in recent years, but not all of them have achieved satisfactory results. The equity incentive schemes adopted by iFLYTEK have both common typical problems and problems unique to the industry. This paper will take the equity incentive scheme of iFLYTEK as the research object, analyze its scheme, subsequent implementation status and problems, and make suggestions for equity incentive schemes for technology companies.

Keywords: Corporate governance; Equity incentive; Technology-based Companies.

1. Introduction

Equity incentives are a system that emerged in the United States in the 1950s to motivate managers and employees to better serve their companies. Listed companies can use equity incentives to solve the problems caused by the separation of management and ownership and information asymmetry, and to improve the overall innovation and productivity of the company. [1]

iFLYTEK is a high-tech company with voice technology research and development as its core business. The software and information services industry is characterized by rapid technological updates and fierce competition. iFLYTEK urgently needs to use equity incentives and other related systems to attract and motivate talent. As of January 2023, iFLYTEK has launched five equity incentive plans, each of which is designed differently and has been implemented with widely varying results. [2] Up to now, the overall incentive effect is good, but the shortcomings in the design of the plans also deserve in-depth study, and this study has certain reference and significance to the design of equity incentive plans for technology-based enterprises. Unlike previous studies that only analyzed iFLYTEK's single-phase equity incentive scheme and focused only on the final benefits of the equity incentive, this paper will use iFLYTEK's three completed equity incentive schemes as case studies, analyze them from the perspective of the company's development process and long-term perspective, evaluate them and provide suggestions on the design of the equity incentive scheme.

2. Case Study

2.1. iFLYTEK's Equity Incentive Scheme

2.1.1 Implementation plan and incentive model

In 2011, the equity incentive was firstly implemented, and 10.98 million stock options were granted by way of issuing stock options, accounting for 3.36% of the total share capital, with the exercise conditions at the company level, department level and employee level respectively.

In 2015, the second implementation of the equity incentive, through the issuance of stock options, 9.5 million stock options are planned to be granted, accounting for 1.19% of the total number of share capital, and the exercise conditions are: using the 2013 net profit target as the base, the net profit growth rate from 2014 to 2017 compared to 2013 shall not be less than 30%, 70%, 110% and 160%

respectively, and the net profit growth rate from 2014 to 2017 shall not be less than 30%, 70%, 110% and 160% respectively. The return on net assets from 2014 to 2017 shall also not be less than 9%. The second equity incentive scheme of iFLYTEK was not exercised and the stock options were eventually cancelled.

In 2017, the third equity incentive scheme was implemented, whereby 948 persons, including middle and senior management, core business personnel and middle and senior management and core business personnel of various subsidiaries, were granted up to 70 million restricted shares, representing 5.32% of the total share capital, through the issuance of restricted shares, the source of which was the A-share ordinary shares issued by the Company. The growth rate of operating revenue will be used as the assessment indicator for whether to release the restricted shares.

2.1.2 Incentive recipients

The targets of the first equity incentive mainly involved senior management, middle management and core technical personnel of the company. The total number of incentive recipients was 370 and the percentage of incentive recipients was 24.71%.

The second equity incentive mainly involved the company's middle management, the company's core technical personnel and the main management of subsidiaries. The total number of incentive recipients was 212 and the percentage of incentive recipients was 8.16%.

The third equity incentive mainly involved senior management, middle management of the company, core technical personnel of the company, middle and senior management of subsidiaries and core technical personnel of subsidiaries. The total number of incentive recipients was 948, and the percentage of incentive recipients was 15.96%.

The overall data shows that the number, scope and distribution of the second equity incentive targets were small, which also led to the poor effect of the second equity incentive.

Table 1. Distribution of Share Incentive Beneficiaries [3,4,5]

Period		1st	2nd	3rd
Directors, Senior Management	Options (million shares)	80	0	2115
	Percentage	7.28%	0	30.20%
Other core personnel	Options (million shares)	908.3	855	4185
	Percentage	82.73%	90%	59.80%
Reserved portion	Restricted shares (million shares)	109.7	95	700
	Percentage	9.99%	10%	10%

Only the second equity incentive did not involve directors and senior management, who are responsible for making decisions on the direction of the company's development and setting the company's business objectives, which to a certain extent led to the failure to exercise the second equity incentive. The third equity incentive for directors and senior management is too high, which has limited incentive effect on other core personnel and will affect the incentive effect to a certain extent.

2.1.3 Exercise price

The exercise price of the first and second equity incentive was set at the higher of the closing price of the shares on the trading day prior to the announcement of the summary of the draft and the average closing price of the underlying shares of the Company for the previous 30 trading days, which was RMB40.76 per share and RMB29.88 per share respectively.

The exercise price of the third share incentive was set at 50% of the average trading price of the Company's shares for the 20 trading days prior to the announcement of the plan, which was RMB13.795 per share.

2.1.4 Exercise arrangements

The 2011 equity incentive exercise arrangement is a 2-year waiting period, a 3-year exercise period and a 5-year validity period; the unlocking arrangement is 30%, 30% and 40% for each period.

In 2015, the exercise arrangement of the equity incentive is a 2-year waiting period, a 3-year exercise period and a 5-year validity period; the unlocking arrangement is 30%, 30% and 40% for each period.

In 2017, the exercise arrangement of the equity incentive is a 2-year restriction period and a 5-year validity period; the unlocking arrangement is 30%, 30% and 40% for each period.

2.1.5 Implementation results.

(1) First equity incentive.

The conditions for exercising the first equity incentive implemented by iFLYTEK in 2011 involved the company level, the department level and the employee level, through which the exercise of the option was determined.

Firstly, at the company level. The exercise conditions of the first equity incentive at the company level were that the average net profit of RMB69.7 million for the three years from 2008 to 2010 was taken as the base, and the three-year fixed base growth rate of net profit should not be less than 40%, 80% and 120% respectively; the R&D investment of RMB91.46 million in 2010 was taken as the base, and the growth ratio of the number of invention patents should not be less than 30%, 60% and 80% respectively for the three years; and the return on net assets should not be less than 30%, 60% and 80% respectively, The return on net assets shall not be less than 7%, 8% and 9% respectively.

Table 2. First equity incentive company level assessment factor

Evaluation	Excellent	Good	Qualified	Improvement needed
Score (N)	N≥120	100≤N<120	70≤N<100	N<70
Factor a	1.2	1	0.8	0

According to published data, the assessment factor a at the company level was greater than 0.8 in 2012, 2013 and 2014, satisfying the conditions for exercise of the rights.

Second, at the department level. The appraisal factor b is assessed and evaluated by iFLYTEK in a uniform manner and is converted as follows:

Table 3. First equity incentive departmental level assessment factor

Evaluation	Excellent	Good	Qualified	Basically qualified	Improvement needed
Score (N)	N≥95	85≤N<95	75≤N<85	65≤N<75	N<65
Factor b	1.2	1.1	1	0.9	0.8

Thirdly, the employee level. The incentive recipient must be qualified with an assessment factor c ≥ 0.8, and the incentive recipient should also meet other necessary conditions, such as not disclosing business secrets or violating professional ethics during the exercise restriction period.

Table 4. First equity incentive employee level assessment factor

Evaluation	Excellent	Good	Qualified	Basically qualified	Improvement needed
Score (N)	N≥90	80≤N<90	70≤N<80	60≤N<70	N<65
Factor c	1.2	1.1	0.9	0.8	0

The first equity incentive in 2011 reached the exercise conditions in all three assessment years, and the incentive targets successfully exercised their rights, and the three-year fixed base growth rates of iFLYTEK's net profit from 2012 to 2014 were 85.18%, 216.9% and 318.11% respectively, all of which were much higher than the set exercise conditions, and the incentive was not enough, which was contrary to the incentive purpose of the equity incentive to a certain extent and was not conducive to the maximum effect of the equity incentive. To a certain extent, it is contrary to the incentive purpose of equity incentive, which is not conducive to the maximum effect of equity incentive.

(2) Second Equity Incentive.

The conditions for the exercise of the second equity incentive: based on the net profit in 2013, the growth rate of net profit from 2014 to 2017 shall not be less than 30%, 70%, 110% and 160% respectively; the return on net assets shall not be less than 9%.

Table 5. Post-implementation evaluation of the second equity incentive

Year	2014	2015	2016	2017
Net profit growth rate relative to 2013	36.00%	52.44%	73.64%	55.81%
Return on net assets	8.23%	6.34%	3.83%	4.86%

The second equity incentive three exercise periods did not reach the exercise conditions, the stock options were cancelled, the incentive recipients did not get the actual benefit, also to a certain extent, the staff's work motivation, making the creativity of researchers decline, which is not conducive to the long-term development of the enterprise.

(3) Third Equity Incentive

The exercise condition of the third equity incentive: based on the operating revenue in 2016, the growth rate of the operating revenue of the Company from 2017 to 2020 shall not be less than 30%, 60%, 90% and 120% respectively.

Table 6. Post-implementation evaluation of the third equity incentive

Year	2017	2018	2019	2020
Operating income growth rate	64.00%	138.46%	203.58%	292.25%

The growth rate of operating income based on the operating income in 2016 in 2017, 2018, 2019 and 2020 have all completed the conditions of exercise, and the incentive effect is obvious.

The conditions for the release of restricted shares under the third phase of restricted share incentive plan implemented in 2017 have all been fulfilled. [3-5]

3. Analysis of the effect of equity incentives

3.1. Analysis of Growth Capacity

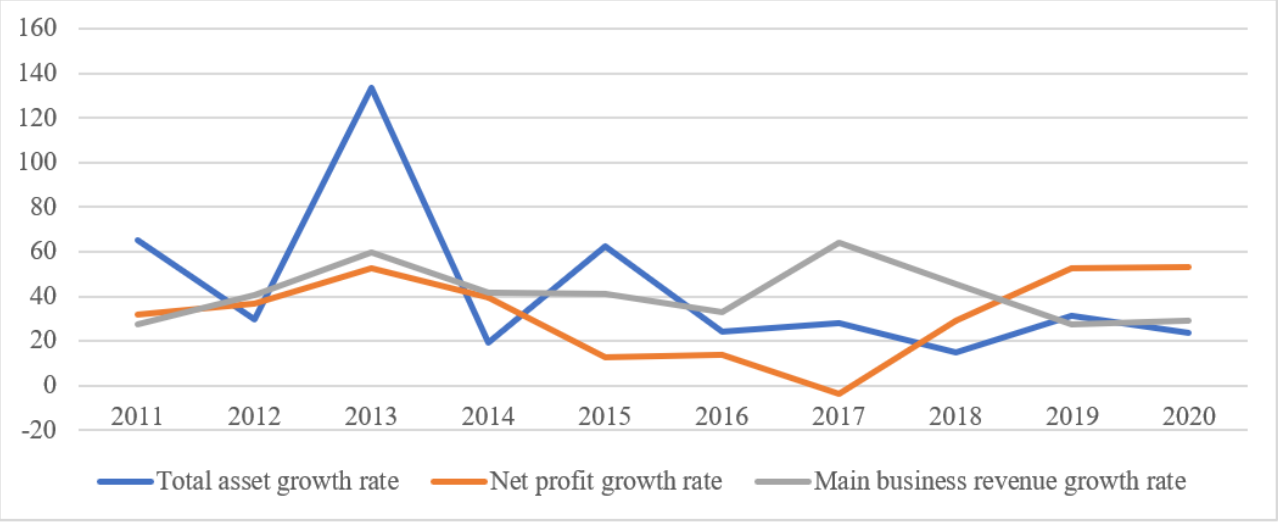


Fig 1. Relevant Growth Capacity Indicators

After the implementation of the first equity incentive in 2011, net profit growth rate and main business income growth rate have increased significantly, and the development trend is good. The relative change of total assets growth rate is large and grows significantly, reaching the peak in 2013, and then tends to be stable, which intuitively reflects the positive impact brought by the first equity incentive, but the long-term effect is not stable enough.

After 2015, the growth rate of total assets showed a decreasing trend, and the growth rate of net profit showed a slight increasing trend. The effect of the second equity incentive in terms of growth ability is lacking, and the long-term growth ability is also lacking. [6]

After 2017, the net profit growth rate was negative for the first time, in which there were some reasons of management decision, and it rebounded rapidly in 2018, and the net profit growth rate showed an upward trend after the implementation of the third equity incentive.

3.2. Analysis of Operating Capacity

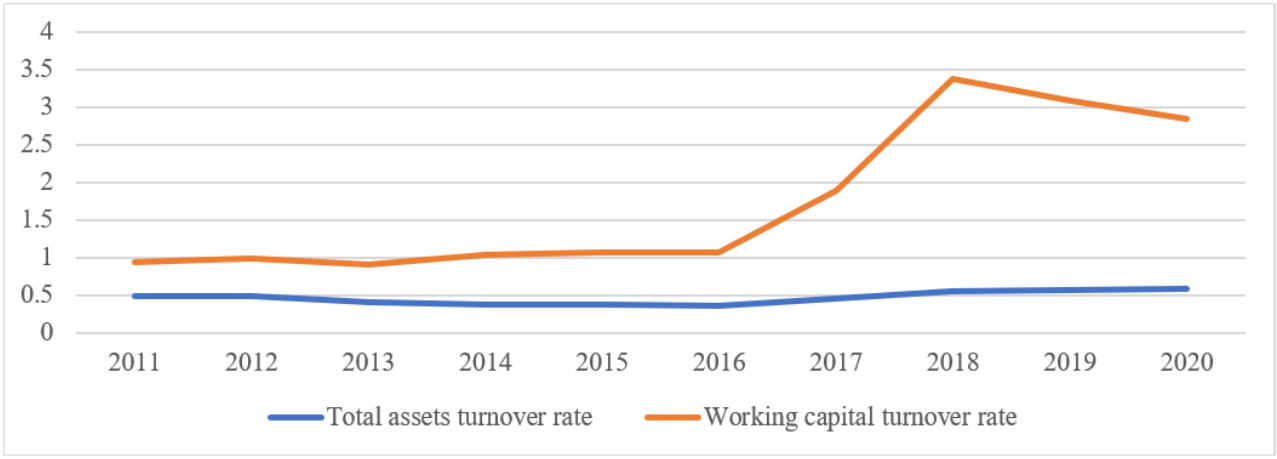


Fig 2. Related Operating Capacity Indicators

After 2011, the total asset turnover ratio has been decreasing, and the working capital turnover ratio has been decreasing except for 2012 and 2014, which showed a slight increase, and the operating capacity of the enterprise is still lacking.

After 2015, the total asset turnover ratio showed a decreasing and then increasing trend, and the working capital turnover ratio basically showed an increasing trend, which indicated that the implementation of the second equity incentive had a certain positive effect on the operating capacity.

After 2017, the total asset turnover ratio still increased at a relatively stable rate, and the working capital turnover ratio increased very significantly and slowly decreased after 2019. The effect of the third equity incentive is stronger than the first two, and the overall effect is the best.

3.3. Analysis of Solvency

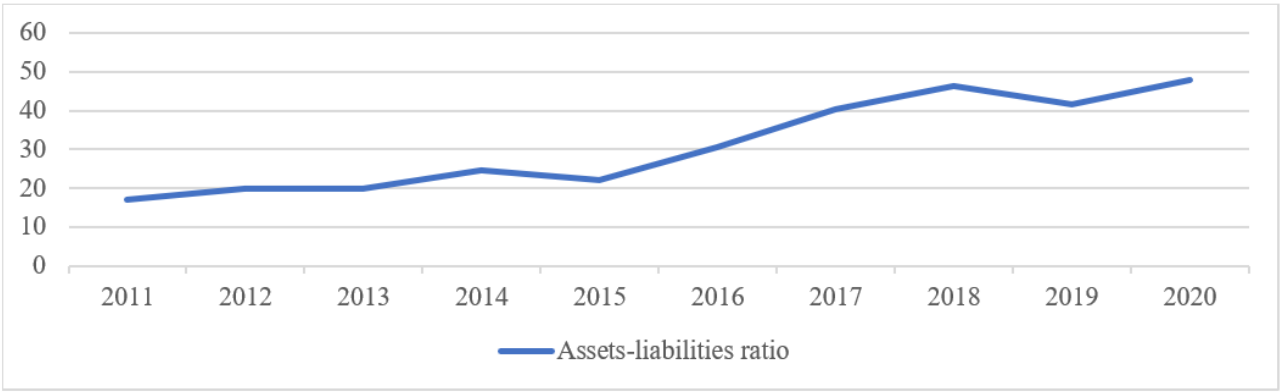


Fig 3. Solvency Indicator

After 2011, the assets-liabilities ratio basically showed an upward trend, indicating a positive effect, but the slight fall in gearing ratio in 2015 could reflect that the long-term effect of debt servicing ability implemented by the first equity incentive was not stable enough.

After 2015, the assets-liabilities ratio showed a significant upward trend, which can show that the intention to start raising the assets-liabilities ratio, iFLYTEK needs to bring in external funds for

research and development, and a reasonable increase in the assets-liabilities ratio also represents confidence in the future development prospect, which is conducive to promoting development.

After 2017, the assets-liabilities ratio continued to climb and only decreased in 2019. However, considering these circumstances, such as the increase in the enterprise's main business revenue and net profit, and the enhancement of its scientific research capability, the enterprise's debt servicing ability has not weakened and the assets-liabilities ratio remains reasonable, and the effect of equity incentive is basically positive.

3.4. Analysis of Profitability

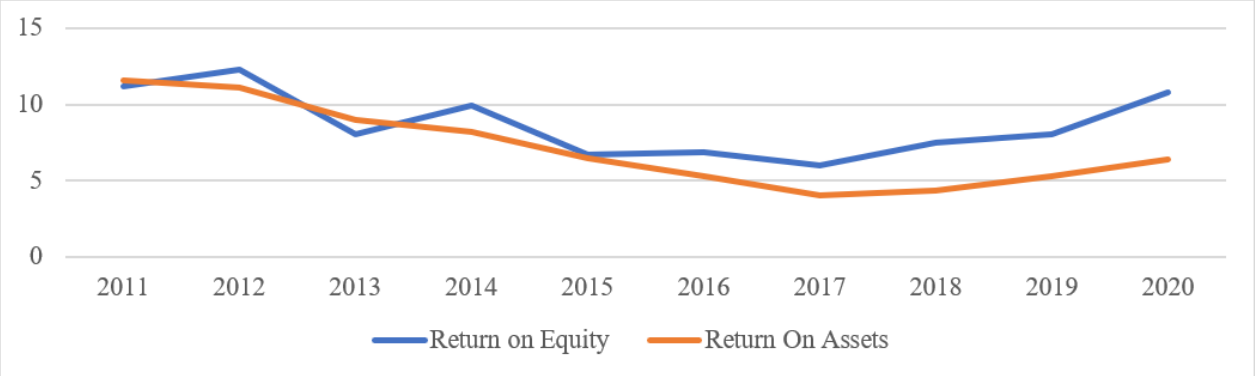


Fig 4. Profitability Indicators

After 2011, the return on net assets showed an upward trend in 2012, although the subsequent return on net assets and total net asset margin showed a downward trend, which to a certain extent indicated that the long-term effect on profitability of the first equity incentive implementation was not stable enough.

After 2015, the return on net assets and total net asset margin both show a decreasing trend, which is not significant enough for iFLYTEK's profitability.

After 2017 and 2020, the total net asset margin and net asset margin all showed an upward trend, and the third and fourth equity incentives had a positive effect on the profitability of iFLYTEK, and the effect was significant.

In summary, the first and third effects are positive and stronger, and the second is weaker. The implementation of the equity incentive plan by iFLYTEK is beneficial to the improvement of the growth capacity, operating capacity, solvency, and profitability of the enterprise from an overall perspective.

4. Conclusions and Recommendations

4.1. Features and Issues of iFLYTEK's Equity Incentive Scheme

In terms of results, equity incentives have had a positive effect on iFLYTEK, but there are still many problems that cannot be denied. The following is a summary of the characteristics and problems of iFLYTEK's equity incentives.

4.1.1 The incentive model is in line with the company's reality

iFLYTEK has chosen different incentive models in several equity incentive schemes, in line with the characteristics of the various development stages of the company, to maximize the equity incentive effect. The first two equity incentive plans used stock options, which were suitable for a company in a period of rapid development at the time; the third and subsequent plans implemented restricted shares, which considered the maturity of the company's development and could better constrain the behavior of incentive targets, avoid short-sighted and opportunistic behavior and bind personal value to corporate value. The fifth incentive recently implemented by iFLYTEK uses a hybrid stock option and restricted stock model. Considering the maturity of the company, the

combined advantages of the two methods can stabilize existing technical talent and attract more emerging talent, promoting steady corporate development and improving overall cohesion. [7]

4.1.2 Multiple assessment systems co-exist

The exercise conditions of equity incentive of iFLYTEK include both individual level and company level, which can ensure the effectiveness of equity incentive to a certain extent. The dual appraisal system can avoid using a single corporate financial indicator as the standard, reduce the pressure on employees, reflect the work results of the incentive recipients at multiple levels, and make the incentive scheme fairer and more effective.

4.1.3 Unreasonable exercise conditions

The results of the multi-competency analysis show that the first two equity incentive implementation effects differed significantly. Due to the relatively lenient conditions set for the first exercise, all performance assessments were achieved. The second equity incentive scheme failed to exercise on time because the exercise conditions were too stringent, and the incentive recipients were discouraged by the inability to exercise their rights. The exercise conditions were set reasonably according to the actual situation of the enterprise to achieve the incentive purpose of the equity incentive and maximize the enterprise value. The unreasonable exercise conditions will largely discourage the employees and create a negative working attitude, which will seriously affect the implementation effect of the equity incentive.

4.1.4 Long-term effects are difficult to maintain

From the point of view of the implementation of the equity incentive time period, the incentive has a positive effect on the overall performance of the company, but the lack of bright performance in terms of growth capacity, the duration is not stable enough, as a long-term incentive mechanism, the effect of the equity incentive is not obvious.

4.1.5 Equity incentive performance assessment system needs further improvement

When designing the exercise conditions, the evaluation index of iFLYTEK places too much emphasis on financial indicators and lacks attention to other indicators. As a high-tech enterprise, iFLYTEK has the characteristics of industry with large initial investment and long capital recovery period. If only profit-related financial indicators are used as the criteria in the evaluation criteria of exercise rights, it is difficult to reflect the labor achievements of the incentive recipients objectively and fairly.

4.1.6 Limited incentive effect on core technical staff

In high-tech enterprises, the R&D capability of R&D personnel largely determines the sustainable power of the enterprise's subsequent development. The capital investment in R&D and the innovation capability of researchers are both indispensable keys for high-tech enterprises. In all three phases of the equity incentive scheme, the proportion of core technical personnel is relatively small. In the design of the equity incentive scheme, KDDI gave less consideration to the incentive of the research personnel, which made the incentive effect of the core technical personnel limited. [8]

4.2. Suggestions for Equity Incentive Scheme

4.2.1 Scientific setting of exercise conditions

When designing the exercise plan, we should fully consider the industry situation and the enterprise's own situation, and not set too high exercise conditions, such as the second equity incentive of iFLYTEK due to the harsh exercise conditions, which makes it difficult to realize the exercise, and to a certain extent, discourage the motivation of the incentive staff. The financial indexes set too high as the exercise conditions are null and void, but also discourage the motivation, and seriously affect the effect of equity incentive.

4.2.2 Reasonable assessment periods

The term of equity incentive is generally three to five years. Appropriately extending the term of equity incentive can help solve the problem of insufficient long-term momentum of equity incentive. In the equity incentive scheme for 2021, iFLYTEK has already started to consider the inclusion of long-term incentives as a regular measure in the full salary management.

4.2.3 Performance evaluation indicators should be diversified

iFLYTEK places too much emphasis on financial indicators in the evaluation of performance, which is prone to short-sighted behavior and cannot consider the long-term development of the company. When formulating the equity incentive scheme, the general indicators used to evaluate performance should also be combined with special indicators that incorporate the characteristics of the company, and non-financial indicators should also be added. However, non-financial indicators are more difficult to account for than financial indicators, and it is also difficult to set more consistent standards between different projects. Therefore, consideration can be given to adding a small number of non-financial indicators to the evaluation criteria to optimize the evaluation of the implementation of equity incentives.

4.2.4 Increase attention to core technical personnel

As a high-tech enterprise, the staff who have mastered the core technologies are the source of power for the development of iFLYTEK. Therefore, when setting up the equity incentive scheme, we should not only consider the management staff who decide the capital investment in R&D of the enterprise, but also increase the incentive for the scientific research staff who directly affect the R&D capability. Expanding the scope of incentives for research staff and giving more research staff opportunities, as well as increasing the proportion of shares held by research staff, will make the research team more stable, increase the cohesion of the R&D team, reduce the possibility of losing highly skilled personnel and further promote the maximum effect of equity incentives. [9, 10, 11]

4.2.5 Refining exercise indicators for the right conditions

As a high-tech industry combining intelligent voice and AI, technological research and development and product sales are very important. However, the actual utility and value of these technological developments are not directly reflected by the profitability of the company, and the needs and satisfaction of the target customers should be considered. Therefore, the evaluation of the effectiveness of the implementation of equity incentives should also consider the satisfaction of the customer's needs. Different exercise indicators for different markets will help to make the evaluation more scientific and rigorous.

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