

On the Impact of Employee Stock Ownership Plan on Innovation and Corporate Development of Manufacturing Companies

-- Take Midea Group as an Example

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Abstract

Employees are an important core resource for enterprises, and attracting and retaining talent has become the key to enterprise development. In recent years, many companies have implemented employee stock ownership plans as a way to motivate employees and improve the output of their work results. For manufacturing enterprises, maximizing the utility of human resources is of even greater importance to the long-term development of the enterprise. Based on the above background, this paper selects Midea Group, a leading domestic home appliance manufacturing enterprise, as the research object to study the impact process of Midea Group's implementation of employee stock ownership plan on innovation performance from 2015-2022, analyze the innovation intensity from two perspectives of changes in corporate R&D expenditure and corporate R&D personnel, further explore the impact of employee stock ownership plan on corporate performance, and also select enterprises in the same industry to compare with it. In addition, we also selected companies in the same industry to compare with, to verify the long-lasting impact of employee stock ownership plan on enterprise development, and to summarize the effect of the implementation of employee stock ownership plan of Midea Group.

Keywords

Employee Stock Ownership Plan; Innovation Performance; Financial Performance.

1. Introduction

For enterprises to be better and stronger and bigger, they should just hold on to high-quality development. For manufacturing enterprises, human resources are the core resources of enterprises, and innovation is the driving force of enterprise development. The current global economic growth rate is slowing down, and enterprises are facing a diversified external environment and competitive pressure at the moment. The key for enterprises to improve their strength is innovation. Based on the above motivation through the employee stock ownership plan can save the cost of employee incentive funds, but also to promote the depth of talent and the company bound; on the other hand, innovative enterprises employees have greater confidence in the company's prospects, and have the motivation to participate in the employee stock ownership plan. As a powerful measure to motivate employees and improve corporate governance, employee stock ownership plan has its own advantages to effectively attract innovative talents and thus improve the competitiveness of the company.

In 2014, the China Securities Regulatory Commission issued applicable opinions on the implementation of employee stock ownership by listed companies. Domestic companies started to implement employee share ownership plans. In recent years, many scholars at home and abroad have conducted research on employee share ownership plans and corporate innovation, corporate performance, and risk-taking, exploring the corresponding relationships

mostly through empirical analysis, and clarifying the impact of employee share ownership plans on corporate development. Therefore, in this paper, from the micro perspective of enterprises, we select the financial data of enterprises from 2015-2022, and further compare and analyze with the industry average from three perspectives of enterprise innovation investment, innovation intensity and enterprise financial performance, in order to verify the effect of the implementation of employee stock ownership plan.

2. Literature Review

In 2014, Chinese enterprises began to implement employee stock ownership plans, and many scholars conducted empirical studies on employee stock ownership plans on enterprise development, and the results found that employee stock ownership plans can promote the improvement of enterprise R&D and enhance enterprise competitiveness, but also bring certain risks to enterprises. Zhang Wangjun (2016) et al. found that employee stock ownership plans reap proven market evaluations, but at the same time, they can bring high leverage risks [1]. Zhang Weidong (2016) et al. found that the study found that shareholders will receive positive cumulative excess return after the listed company announced employee stock ownership plan [2]. Huang Yunxu (2018) found by analyzing employee shareholding data of listed companies that there is a positive relationship between employee shareholding and company performance, the effect of management shareholding is better than that of ordinary employee shareholding, and executive shareholding is positively related to the capital structure of the company, and employee shareholding of non-publicly issued shares affects company performance more weakly than employee shareholding of shares acquired from secondary market purchases and gifts [3]. Wang Ye (2018) et al. found that the higher the endowment of human capital, the more companies tend to implement employee stock ownership plans [4]. Shen Hongbo (2018) et al. empirically tested the path of the impact of employee share ownership plans on the business performance of state-owned enterprises, the proportion of executives in private enterprises who choose to participate in employee share ownership plans is higher than in state-owned enterprises, and the cost of corporate governance is reduced after the implementation of employee share ownership plans in state-owned enterprises, and business performance is weaker than in private enterprises [5]. Pingping Huang et al. (2019) found that firms that implemented ESOPs had higher innovation output compared to firms that did not implement ESOPs, and this boost was more significant in firms with higher information transparency [6]. Zhou, Donghua (2019) et al. found that employee stock ownership plans promote corporate innovation mainly by reducing agency costs and increasing corporate risk-taking capacity [7]. Compared with state-owned enterprises, the implementation of employee stock ownership plans in non-state-owned enterprises is more likely to increase firm innovation output. Meng Qingbin (2019) and others found that the implementation of employee stock ownership plans promoted innovation output, and the non-leveraged employee stock ownership plans with high purchase discount and long lock-in period promoted innovation output more strongly, while the expansion of the number of employee stock ownership plans may cause the problem of "free-riding", which is not conducive to innovation output [8]. Li, Yun et al. Li Yun et al. (2020) found that employee stock ownership plans in China have a significant innovation incentive effect, showing a "U" shaped cumulative effect relationship [9]. (2020) found that employee stock ownership plans in China have a significant innovation incentive effect, showing a "U" shaped cumulative effect relationship. Zhang Jiangkai (2020) found that employee stock ownership plans with executive participation have negative accrual and true surplus management and the more power management has, the more significant the surplus management is [10]. Liu, Li-Hui et al. Liu, Li-Hui et al. (2021) find that employee stock ownership plans have a lag and persistence on firms' innovation output, and that three types of

firms have better incentive effects: technology-intensive industries, stock subscriptions to private offerings, and a high percentage of employee subscriptions [11].

3. Case Description

3.1. Introduction of the Midea Group

Midea Group was founded in 1968 and officially listed in 2013 (stock code: 000333) Its main production products are the production and operation of household appliances, motors and their components and other equipment, and is one of the largest white goods production bases and export bases in China. Midea Group has been implementing employee stock ownership plan since 2015, and has been implementing employee stock ownership plan every year. Midea Group's employee stock ownership plan mainly carries out equity incentive through share repurchase, competitive transfer, etc. The objects of the stock incentive are mostly core employees and management staff. The enterprise's R&D expenditure rises year by year, the intensity of R&D is increasing, and the decreasing response of R&D capitalized expenditure in 2018 indicates that some of the funds are converted into intangible assets, and the book value of the enterprise's intangible assets patent rises year by year, and the enterprise's innovation level is improved.

3.2. 2014 Employee Stock Purchase Plan Implementation Process of Midea Group

Midea Group's 2014 Employee Stock Purchase Plan Implementation Plan is shown in Table 1.

Table 1. Implementation of the ESOP in 2014

Date	Process
January 10, 2014	The Board of Directors adopted the draft stock option incentive plan of Midea Group Co. The Supervisory Committee adopted the "Proposal on the Verification of the List of Incentive Subjects of the Company's Stock Option Incentive Plan (Draft)>".
	Stock option incentive materials reported to the China Securities Regulatory Commission for the record
February 17, 2014	Consideration and adoption of the relevant proposals of the Share Incentive Scheme
February 18, 2014	The board of directors considered and approved the proposal related to the equity incentive plan
April 21, 2014	Cash distribution to all shareholders and simultaneous transfer of cash to all shareholders from capital surplus
May 26, 2014	The Board of Directors considered and approved the Proposal on Adjusting the Exercise Number, Exercise Price and Incentive Target of Stock Options under the Company's Equity Incentive Plan
March 27, 2015	The shareholders' meeting considered and approved the "Proposal to Adjust the Incentive Target and the Exercise Number of Stock Options under the Share Incentive Scheme of the Company".

Data source: Announcement on matters related to the exercise of the first exercise period of the Phase I Stock Option Incentive Plan.

3.3. 2015-2022 Employee Stock Purchase Plan of Midea Group

Midea Group's 2015 - 2021 Employee Stock Purchase Plan Implementation Plan is shown in Table 2.

Table 2. Midea Group 2015-2022 Employee Stock Purchase Plan

Stock short name	Board Proposal Day	Announcement date of shareholders' meeting	Implementation completion date	Actual number of shares held (million shares)	Stock Sources
Midea Group	2015-03-31	2015-04-21	2015-05-18	648.38	Repurchase by listed companies
Midea Group	2016-03-26	2016-03-24	2016-04-26	258.31	Repurchase by listed companies
Midea Group	2017-03-31	2017-03-29	2017-05-18	284.64	Repurchase by listed companies
Midea Group	2018-03-31	2018-04-24	2018-05-15	177.93	Competitive transfer, targeted transferee
Midea Group	2018-03-31	2018-04-24	2018-05-15	331.85	Competitive transfer, targeted transferee
Midea Group	2019-04-20	2019-05-14	2019-07-08	373.21	Repurchase by listed companies
Midea Group	2019-04-20	2019-05-14	2019-07-12	186.78	Repurchase by listed companies
Midea Group	2020-04-30	2020-05-22	2020-07-10	353.77	Repurchase by listed companies
Midea Group	2020-04-30	2020-05-22	2020-07-15	187.36	Repurchase by listed companies
Midea Group	2021-04-30	2021-05-22	2021-08-03	243.65	Repurchase by listed companies
Midea Group	2021-04-30	2021-05-22	2021-08-11	198.56	Repurchase by listed companies
Midea Group	2022-04-30	2022-05-21	2022-07-18	377.04	Repurchase by listed companies
Midea Group	2022-04-30	2022-05-21	2022-07-26	282.68	Repurchase by listed companies

4. Employee Stock Ownership Plan Incentive Effect

Midea Group started to implement employee stock ownership plan in 2015, what is the incentive effect of employee stock ownership plan? This paper obtains financial index data from Oriental Fortune Choice data, and analyzes the operating capacity, profitability, solvency, development capacity and R&D capacity of Midea Group from five perspectives respectively.

4.1. Operating Capacity Analysis

Operating capacity refers to the efficiency of an enterprise's operating assets. The efficiency of the enterprise's operating assets mainly refers to the turnover rate or turnover speed of the assets. In this paper, the accounts receivable turnover rate and inventory turnover rate are selected to analyze the operating capacity of the company.

From Table 3, it can be seen that the accounts receivable (including notes receivable) turnover ratio of Midea Group has increased year by year from 2015 to 2022, and the industry average accounts receivable turnover ratio fluctuates around 14%, and since 2019 Midea Group's accounts receivable turnover ratio has been maintained above 10% during this period, which is close to the industry average, thanks to Midea Group's successful completion of digital transformation to improve the efficiency of accounts receivable management and Excellent sales channel management. In recent years, Midea's inventory turnover rate fluctuates within

6%, and the inventory turnover rate of the home appliance industry is stable at around 6%, but Midea's annual inventory turnover rate is higher than the industry average, the highest in 2016, reaching 8.86%, and after 2018, Midea's inventory turnover rate remains stable and still higher than the industry average.

Table 3. Midea Group Operating Capacity Index from 2015 to 2022

Index	2015	2016	2017	2018	2019	2020	2021	2022
ITO	8.06	8.87	8.01	6.37	6.38	6.50	6.29	5.20
ART	5.57	7.21	9.77	8.61	10.05	10.99	11.83	11.02
Industry average ITO	7.02	7.32	7.00	6.44	6.15	5.72	5.45	4.75
Industry Average ART	14.29	13.51	14.27	14.33	14.68	13.11	12.96	11.99

4.2. Profitability Analysis

Profit is one of the business objectives, and a profitable company can improve its solvency and make it have sufficient cash flow, which can be the growth of corporate value and enhance its reputation. In this paper, we analyze the profitability of a company through return on net assets and income from main business.

From Table, it can be seen that the return on net assets of Midea Group has been decreasing year by year, but the main business income has been increasing year by year, and the main business income in 2022 has increased about 137% year by year compared with 2015, and the return on net assets has decreased by 32% year by year. The main business income of Midea Group has been maintained at a stable level of growth from 2015 to 2022, which are higher than the average main business income of the industry, indicating that Midea Group is in white home appliance industry is in a leading position. The net asset margin of the white household appliance industry is stable at 20%, and the return on net assets of Midea Group has been stable in the fluctuation range of 26% since 2015, and its return on net assets are higher than the industry average, and the highest return on net assets of Midea Group is 28.66% in 2021. Combined with the business income of the enterprise, Midea Group has promoted the introduction of talents and increased the proportion of R&D investment during the decade, and the patent output ranks first in the field of white goods, while the enterprise makes investment to expand output, and the total asset scale of the enterprise is expanding continuously.

Table 4. Midea Group profitability indicator from 2015 to 2022

Index	2015	2016	2017	2018	2019	2020	2021	2022
ROE	28.66	26.62	25.63	25.80	26.21	24.84	28.66	26.62
Sales revenue	1285.7	1471.7	2407.1	2596.7	2782.2	2614.8	3010.3	3058.5
Industry Average ROE	22.58	23.58	25.55	22.94	21.28	18.94	19.36	20.13
Industry average Sales revenue	419.54	493.37	689.21	798.96	837.74	833.69	966.76	995.18

4.3. Growth Capacity Analysis

Development capacity refers to the development trend and development potential of the company's future production and operation activities, mainly relying on financial indicators such as unsustainable growth of main business income and continuous increase of capital investment and profit growth, etc. By analyzing the development capacity of the enterprise, we can judge the development potential of the enterprise and predict the prospect of the enterprise so as to provide an important basis for business managers and investors to make business decisions and investment decisions. The analysis of financial indicators such as growth capacity can be used to determine the development potential of an enterprise, predict the future of an enterprise, and provide an important basis for business and investment decisions by managers

and investors, thus avoiding major economic losses caused by poor decisions. In this paper, the growth rate of total assets is chosen to measure the development capability of the enterprise. From Table 5, it can be seen that the total asset growth rate of Midea Group fluctuates in a wide range from 2015 to 2022, with the lowest total asset growth rate of 6.29% in 2018 and the highest point of 32.41% in 2016. The industry average total assets growth rate is similar to the fluctuating trend of the total assets growth rate of Midea Group. The total asset growth rate of Midea Group has been significantly higher than the industry average during 2015-2022, indicating that the growth ability of the company has been higher than the industry average.

Table 5. Midea Group Growth Capacity Index from 2015 to 2022

Index	2015	2016	2017	2018	2019	2020	2021	2022
Total assets growth rate	7.11	32.41	45.43	6.29	14.51	19.35	7.65	8.92
Industry average total assets growth rate	3.46	27.72	26.19	1.28	10.37	9.00	3.55	2.25

4.4. Solvency Analysis

The ability of a company to repay its corporate debt is the ability to service the debt. Analysis of financial data and other accounting information of manufacturing companies reveals the ability to realize assets, the level of debt and the ability to repay debt. It assesses the risks that exist and provides information for internal users and external stakeholders to use in decision making. In this paper, we analyze the long-term solvency of the company in terms of gearing ratio and the short-term solvency of the company in terms of current ratio, quick ratio and.

From Table, the current ratio of Midea Group from 2015-2022 has been maintained at a stable level, in line with the trend of changes in the industry's current ratio, the highest of Midea Group's current ratio was 1.50 in 2019 and the lowest point was 1.12 in 2021. the current ratio of Midea Group from 2015-2022 has been fluctuating up and down, and the quick ratio of the enterprise from 2015-2022 is higher than the industry average level. The lowest quick ratio of Midea Group is 0.91 in 2021, and the highest point is 1.09 in 2018 and 2019. the gearing ratio of Midea Group has been maintained at a stable level from 2015 to 2022, fluctuating roughly above and below 64%, which is similar to the industry average. it can be said that the debt servicing risk of Midea Group is relatively small, and the overall analysis shows that Midea Group has a strong overall debt servicing capacity, which is significantly higher than the average level of the industry.

Table 6. Midea Group's solvency indicator from 2015 to 2022

Index	2015	2016	2017	2018	2019	2020	2021	2022
Current Ratio	1.30	1.35	1.43	1.40	1.50	1.31	1.12	1.27
Industry average current ratio	1.23	1.18	1.26	1.29	1.30	1.27	1.12	1.20
Quick Ratio	1.15	1.18	1.18	1.18	1.28	1.14	0.91	1.04
Industry average quick ratio	1.08	1.03	1.06	1.09	1.09	1.07	0.88	0.97
Gearing ratio	56.51	59.57	66.58	64.94	64.40	65.53	65.25	64.05
Industry average gearing ratio	60.86	64.69	66.31	63.63	62.19	62.53	64.56	64.90

4.5. Innovation Ability

Innovation is the core driving force of enterprise development. This paper mainly selects R&D investment, the proportion of R&D investment to business revenue, the number of R&D personnel and enterprise patent output to analyze the changes of Midea Group's innovation ability.

From Table 7, it can be seen that the overall R&D investment of Midea Group shows an upward trend, and with the growth of enterprise revenue, the proportion of enterprise R&D investment

in operating revenue is maintained at 3.5% of the level. Midea Group, as a main white home appliance manufacturing enterprise, attaches great importance to technological innovation, and after the implementation of the employee stock ownership plan from 2015, the R&D investment from 2015-2022 has increased significantly in the research of core technologies, while Midea Group continues to increase the transformation of R&D achievements. Midea Group attaches great importance to scientific researchers, as can be seen from 2015 to 2022 the number of R & D personnel of the enterprise has been growing, from 8672 people in 2014 to 20782 people in 2022. From the perspective of the number of patent authorization, by checking the Midea Group 2022 annual report, we know that by the end of 2022, the patent authorization maintenance of Midea exceeds 80,000 pieces, according to the data of Midea Group annual report, the number of Midea Group's patents in the white goods industry in the first place. Compared with other home appliance companies this value is far ahead.

Table 7. Midea Group's innovation indicators from 2015 to 2022

Index	2015	2016	2017	2018	2019	2020	2021	2022
R&D	52.63	60.46	85.00	98.11	96.38	101.19	120.15	126.19
Total R&D expenditure as a percentage of operating revenue	3.78	3.78	3.51	3.75	3.46	3.56	3.52	3.67
Number of R&D personnel	8,672	8,741	10,520	12,321	13,727	16,071	18,105	20,782

5. Conclusion

This paper analyzes the impact of Midea's employee stock ownership plan on innovation performance and financial performance, and finds that the implementation of the employee stock ownership plan in consecutive years has effectively improved the innovation performance of the company, and the innovation intensity of the company has increased year by year, and the investment in R&D has increased. The enterprise's accounts receivable turnover rate and inventory turnover rate are both higher than the industry average during the implementation of the employee stock ownership plan, which indicates that the employee stock ownership plan has well promoted the transformation of employees' status into "corporate partners" and stimulated the management potential of employees, thus improving the enterprise's management capability. The return on net assets and operating income of the enterprise have increased every year during the implementation of the employee stock ownership plan, and they are both higher than the industry average. During the implementation of the employee stock ownership plan, some profit standards are set, and the core employees are motivated to meet the standards, thus improving the overall economic effect of the enterprise. Although the growth rate of total assets of the enterprise is unstable and fluctuates within a certain range, as far as the whole industry is concerned, the business capacity of Midea Group is at the forefront of the industry. The employee stock ownership plan has improved the solvency of the enterprise, while the growth rate of total assets of the enterprise has expanded year by year, and the continuous expansion of the enterprise scale is beneficial to the long-term development of the enterprise.

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References

- [1] Zhang Wangjun, Sun Yi, Wan Limei. Research on the effects and problems of employee stock ownership plan of listed companies [J]. Financial regulation research, 2016(03): 90-103.
- [2] Zhang Weidong, Luo Minmin, Tao Yuanyuan. Research on the shareholder wealth effect of employee stock ownership plan of listed companies--empirical data from China's securities market [J]. Journal of Beijing University of Technology and Business (Social Science Edition), 2016,31(02):61-70.
- [3] Huang Yunxu. A study on the impact of employee stock ownership plan on company performance [J]. Finance and accounting communication, 2018,(20):32-35.
- [4] Wang Y, Sun Huixian, Wu Ting et al. Human capital endowment, marketability and employee stock ownership plan selection [J]. East China Economic Management, 2018, 32(12):133-142.
- [5] Shen Hongbo, Hua Linghao, Xu Jiji. Business performance of state-owned enterprises implementing employee stock ownership plans: incentive compatibility or incentive insufficiency [J]. Management World, 2018,34(11):121-133.
- [6] Huang, P.-P., Jiao, Y.-H. Employee stock ownership, information transparency and corporate innovation-a quasi-natural experiment based on employee stock ownership plan [J]. Science and Technology Progress and Countermeasures, 2019,36(22):102-111.
- [7] Zhou, Donghua, Huang, Jia, Zhao, Yujie. Employee stock ownership plan and corporate innovation [J]. Accounting Research, 2019,(03):63-70.
- [8] Meng, Qingbin, Li, Xinyu, Zhang, Peng. Can employee stock ownership plans promote corporate innovation? -- Empirical evidence based on the perspective of corporate employees [J]. Management World, 2019,35(11):209-228.
- [9] Li Yun, Ding Linfeng. Employee stock ownership plan, collective incentives and corporate innovation [J]. Finance and Economics Research, 2020,46(07):35-48.
- [10] Zhang Jiangkai, Song Chang, Wang Yulong. Executive participation in employee stock ownership plans, outside director governance and surplus management [J]. Finance and Accounting Monthly, 2020,(01):19-26.
- [11] Liu, Lihui, Sun, Dan, Liu, Rui. A study on employee stock ownership plan, agency costs and firm innovation performance [J]. Macroeconomic Research, 2021(06):161-175.