

Analysis of Management Entropy Based on the Law of Enterprise Lifecycle

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Abstract: According to Darwin's theory of evolution, life continuously evolves through natural selection and adaptation to the environment. Similarly, businesses evolve by continually adjusting and optimizing their structures and functions in the face of market competition and environmental changes. Therefore, businesses can be seen as organic entities with lifecycles similar to those of living organisms. In general, the lifecycle of a business can be divided into five stages: the founding stage, growth stage, maturity stage, decline stage, and extinction stage. Each stage has its specific internal and external environmental conditions, along with corresponding opportunities and risks. To survive and thrive in each of these stages, businesses need to formulate appropriate strategies and measures based on their specific circumstances. This article will analyze the issue of managerial entropy that businesses face at different stages from the perspective of the laws governing the business lifecycle. Managerial entropy refers to the disordered state that arises within a business due to factors such as information asymmetry, poor communication, and coordination challenges, leading to reduced efficiency, resource waste, and decreased innovation capacity. Managerial entropy is one of the critical factors influencing the survival and development of businesses and deserves close attention. The article will propose solutions tailored to the managerial entropy issues at each stage, aiming to help businesses reduce the impact of managerial entropy and extend their lifecycles.

Keywords: Business management, Managerial Entropy, Lifecycle, and Management Characteristics.

1. Overview of the Evolution Law of The Enterprise Life Cycle

1.1. Development course of enterprise life cycle theory

Charles Robert Darwin proposed the theory of evolution in 1858 and further introduced the theory of "survival of the fittest." Which believed that in nature, only those creatures that adapt to environmental changes, can adapt to competition and timely adjust themselves can survive and reproduce. Marshall in 1891 in "principles of economics", according to Darwin's theory of evolution, the analogy to the enterprise, think the development of enterprises is the same as the development of life, can be divided into different life cycle, including generation stage, growth stage and decline stage, each stage has its unique characteristics and challenges, need to adopt different strategies to deal with. In this process, companies need to constantly adapt to change to maintain their competitive advantage and survive. This is consistent with Darwin's "survival of the fittest" theory of evolution. If enterprises want to survive and develop in the market competition, they must have adaptability and flexibility. It needs to constantly adapt to the changes in the market, timely adjust its business strategies, develop new products or services, and even change its own organizational structure and business model when necessary. Only those enterprises that can adapt to environmental changes, adapt to competition and adjust themselves timely can survive and prosper.

American management scientist, chuck love dis (Ichak Adizes) for many years committed to study how enterprise development, aging and decline, and founded the enterprise life cycle theory, the theory mainly from the internal management, structure, relationship describes the enterprise growth process, the enterprise life cycle is divided into three

stages: gestation stage, growth stage and aging stage, the subdivided into ten periods: gestation, infancy, children, adolescence, life, stability, noble, aristocratic early, bureaucratic, bureaucratic, death. Ichak love, enterprise life cycle theory emphasizes the characteristics of various stages in the process of enterprise development and challenges, gestation is the initial stage of the enterprise, it has not been formally established, the founder of the enterprise at this stage is usually interest driven, they may explore the market, raise funds and looking for partners. In infancy, the enterprise has been established, but it is still very weak, there are many uncertainties and risks, enterprises need to establish their own products or services, and determine their own market and target customers. Enterprises in the learning period have begun to grow at this stage, but they still need to go through a lot of trial and error and learning process. Enterprises need to establish their own brand image, expand market share and improve production efficiency. Companies have grown rapidly in adolescence and have made major breakthroughs, and they need to increase their management and organizational capabilities to better manage and coordinate their internal departments and resources. Enterprises in the prime of life have become mature, but the market competition is becoming more and more fierce. Enterprises need to increase their innovation ability, constantly launch new products and services, and improve their market share and customer loyalty. In the stable period, the enterprise has reached its peak and become the market leader, and the enterprise needs to maintain its market position and constantly improve its products and services to maintain its competitive advantage. The aristocratic enterprises has been very stable at this stage, but the management may become bureaucratic and conservative, lack innovation and flexibility, and enterprises need to constantly seek new opportunities and challenges to avoid falling into recession. In the early stage of

bureaucracy, enterprises began to get into trouble at this stage, and the management may be overly conservative, lack of innovation and flexibility, leading to the gradual loss of market competitiveness. In the bureaucratic period, the enterprise fell into a recession period, and there may be internal conflicts and disputes between the management and the employees. The enterprise needs to take effective measures to readjust the organizational structure and management mode to restore the competitiveness. The death period is the last stage of the life cycle of an enterprise. Enterprises usually cannot adapt to market changes and face financial problems and management chaos, leading to the demise of the enterprise.

Some domestic scholars also put forward their own views on the theory of the life cycle of enterprises. Among them, Chen Jiagui (1995) divided the life cycle of enterprises into the stages of gestation, survival, rapid growth, maturity, decline and metamorphosis according to the growth of enterprises. According to the scale expansion of the enterprise, the enterprise is divided into three growth modes, including underdevelopment type, normal development type and supernormal development type. Different growth types have different characteristics in different growth stages of the life cycle. In the gestation period, the enterprise establishment stage, the capital, technology, market and other aspects are relatively weak. In the survival period of enterprises began to operate, facing market competition and survival pressure, need to constantly adjust the business strategy. In the period of rapid growth, enterprises have entered a stage of rapid development, with scale expansion and profit increase, but also facing challenges in management and capital. Entering the mature period, the scale of the enterprise reaches a certain degree, the market share is stable, but the growth rate slows down. Decession enterprises began to decline, market share reduction, profits and so on. In the metamorphosis period, enterprises need to carry out transformation and upgrading or look for new development opportunities, otherwise they will eventually decline.

Another scholar, Li Ye (2000), selected sales as the classification standard, divided the enterprise life cycle theory into gestation, birth, growth, maturity and decline, and put forward a correction model of typical enterprise life cycle. After market research, the enterprise founder has formed the intention of entrepreneurship. Just when the entrepreneur is ready to start the company and has the confidence to take responsibility and risk, the company may be born. When the enterprise is officially approved for registration, the enterprise is established in accordance with the law, entering the initial birth period. This is a period of exploration, learning, and survival. Enterprises should design good products according to market demand, be familiar with the process and equipment in production, and produce qualified products; open sales in time and withdraw funds quickly; allocate people, money and goods in management. After the initial period, if the enterprise can gradually stabilize and start to make profits, it will enter the growth period. This stage is a period of rapid development of enterprises, and it is necessary to strengthen management and control risks. When the enterprise gradually stabilizes and begins to mature, it enters the mature period. At this stage, we need to focus on improving efficiency and maintaining sound operation. When companies start to show signs of a recession, they enter a recession. At this stage, we need to timely adjust our business strategy and find new growth points.

In the study of enterprise life cycle, many scholars have put

forward different theories and methods. Among them, the research of Xiong Yijie (2002) is somewhat innovative and practical. On the basis of the qualitative analysis of the enterprise life cycle, he used the modified exponential function model to make a quantitative analysis of the enterprise life cycle. By estimating and testing the parameters in the model, he divided the life cycle of the enterprise into four stages, namely, the growth stage, the maturity stage, the decline stage and the elimination stage. In his opinion, the division of these four stages not only has to accord with the general law of enterprise development, but also can be used for objective judgment and prediction by mathematical methods. His research provides a new perspective and tool for the theory and practice of the enterprise life cycle.

1.2. The application value of the enterprise life-cycle theory

The application value of the corporate lifecycle theory is reflected in several aspects:

1. Strategic Planning:

The corporate lifecycle theory can help the leadership of a company better understand the stage it is in and accordingly formulate strategic plans. Different stages require different strategies, such as a focus on market penetration in the early stages, while an emphasis on product innovation or diversification strategies may be needed in the mature stage.

2. Risk Management:

Understanding the corporate lifecycle helps in predicting and managing potential risks. Early stages may be associated with financial risks, while the mature stage might involve risks related to market share stability. By understanding the lifecycle, companies can take measures to mitigate these risks.

3. Resource Allocation:

The corporate lifecycle theory helps optimize resource allocation. Start-up companies may need more funding for research and development and marketing, while mature companies may focus more on efficiency and cost management.

4. Market Positioning:

The lifecycle theory helps companies determine their position in the market. This can guide the selection of target markets, competitive strategies, and brand image shaping.

5. Performance Evaluation:

Companies can use the lifecycle theory to assess their performance and compare it with competitors in the same or different industries. This helps determine whether the company has achieved its expected stage-specific goals.

6. Strategic Partnerships and Mergers and Acquisitions:

Understanding the corporate lifecycle helps in deciding whether to engage in strategic partnerships or mergers and acquisitions. Companies can choose to partner with counterparts in different lifecycle stages to achieve common goals.

7. Human Resource Management:

The lifecycle theory can guide human resource decisions, such as hiring, training, performance assessment, and promotions, to ensure that the organization's talent and structure align with the lifecycle stage.

In conclusion, the application value of the corporate lifecycle theory lies in helping companies better understand and address the challenges and opportunities at different stages of the lifecycle, thereby improving the effectiveness of their strategic planning, resource allocation, and performance management. This helps enhance the company's

competitiveness and sustainability.

2. Definition of Governing Entropy and Its Laws

2.1. The concept of entropy

Entropy is a fundamental concept in thermodynamics that represents the degree of disorder of the system. In thermodynamics, entropy is a parameter describing the thermodynamic state of a system, and the larger the entropy, the higher the degree of disorder of the system, that is, the higher the degree of disorder of the system. In information theory, entropy is the unit of measure representing information uncertainty. It is the expected value of the information quantity of a probability distribution, the larger the entropy, the higher the uncertainty of the information, and the higher the degree of information confusion. Overall, entropy is a measure of the degree of disorder and disorder and can be used to describe the properties of physical and information systems. In management, entropy is used to describe the disorder, chaos and out of control in the management process. Because the entropy increase will continue without intervention, we need to artificially make the gradually disordered state orderly and actively do the entropy decrease to slow the rate of chaos.

2.2. Definition of management entropy

As an open and complex giant system, enterprises have biological characteristics and social characteristics. In the process of its development, various factors interact with each other, leading to a complex process of dynamic evolution from gestation, creation, growth to maturity and variation. The development process of an enterprise not only involves the change of internal factors, but also is affected by the external environment. Political, economic, cultural and other factors will have an important impact on the development of enterprises. Therefore, enterprises need to constantly adapt and change to cope with these changing environments. In this complex development process, enterprises are faced with various uncertainties and chaos. For example, the change of market demand, the change of competitive environment and technological innovation will have an important impact on the development of enterprises. Therefore, enterprises need to have a strong adaptability and innovation ability to cope with these changes and challenges.

Different scholars have defined management entropy from different perspectives. Ren Peiyu (1997,2001) introduced entropy into management science and obtained the concept of management entropy, that is, management entropy refers to the ratio of performance of management that represents the order degree and energy state in a certain time and space of movement. Any kind of management organization, system, policy, method, in the relatively closed organization movement process, always presents an irreversible process of effective energy gradually reduced, and ineffective energy constantly increasing. The greater the management entropy, the more chaotic the internal management; the contrary, the more orderly the internal management, the higher the management efficiency.

2.3. The law of managing the entropy

On this basis, Ren Peiyu (2001) put forward the law of decreasing management efficiency of isolated system, the management dissipation structure and the increasing law of

management efficiency of open complex system.

The law of diminishing management efficiency means that when the enterprise is only in an isolated system, the increase of management entropy is inevitable and irreversible due to the lack of necessary production materials and product elements to exchange with the environment. No matter how the management factors such as the organization, system, policy, method, culture, theory and technology of the enterprise system are, the energy and production and operation factors played in the movement of the isolated system will gradually decrease, while the ineffective energy will gradually increase, which is an irreversible process. This also determines that the management efficiency will continue to reduce, and the isolated enterprise organization system will evolve from orderly to disordered state, and eventually to decline. In other words, enterprises cannot operate independently and need to communicate and cooperate with the external environment. If the enterprise is isolated from the external world and cannot obtain the necessary resources and information, the management efficiency will be continuously reduced, and eventually leads to the increase of the system entropy, that is, the aggravation of the disordered state. Therefore, enterprises should actively communicate and cooperate with the external environment to maintain the sustainability of their development and survival.

Management dissipative structure means that an enterprise system can maintain its stability and self-organization in an ever-changing environment while constantly receiving external information and resources. In other words, the enterprise system is not just a simple isolated system, but an open system with dynamic complexity and self-regulation ability. The dissipative structure is a non-linear open system far away from the equilibrium state, with similar characteristics to the "entropy increase". It focuses on "openness", followed by non-equilibrium. When a system has a "dissipative structure", it can effectively counter the entropy increase. When the enterprise exchanges the production factors and products with the environment, the enterprise forms the negative entropy increase of the management through the management dissipation structure, which promotes the enterprise to develop in an orderly direction, and then makes the management efficiency grow continuously, that is, the increasing law of the management efficiency.

3. The Relationship Between the Evolution Law of The Enterprise Life Cycle and The Management Entropy

3.1. Management characteristics of each stage of the life cycle

Based on the research of Ren Peiyu (2003), this paper divides the life cycle of an enterprise into five processes: generation, growth, maturity, decline and death, and analyzes the characteristics and complex transitions of various stages of the enterprise life cycle.

1. Idiophase

In the early stage of an enterprise, the phenomenon of local random order appears in chaotic economy. The production of enterprises has randomness and complexity. Its sufficient condition is the random order product in chaotic economic system. Its goal is to pursue economic benefits and be able to carry out self-organization, adaptation and self-evolution in

function. The generation process of an enterprise is that a local element in a chaotic system suddenly makes an orderly movement around the attractor in a certain direction, and the collection of elements that jointly make an orderly movement is the enterprise.

At this stage, enterprises need entrepreneurs to have the ability of innovation, market insight, the ability to quickly adapt to changes, fund raising ability and management ability, so as to meet the market demand. The initial stage of enterprises are usually in a high-risk and uncertain environment, with a relatively weak market position and an imperfect management system. Entrepreneurs are the main driving force of the enterprise, and their motivation and goals determine the direction and vision of the enterprise. Entrepreneurs may have many motivations, such as satisfying their own interests, realizing personal value, solving social problems, etc. The goal of entrepreneurs is specific and quantitative, such as achieving a certain income, market share, social impact, etc. At the initial stage, an enterprise needs to have an innovative idea or product, which can meet the needs of the market or customers, and has certain competitive advantages, which can be different from other similar enterprises. Innovation and competitive advantage can come from technology, model, brand, team and so on aspects. At the initial stage of production, an enterprise needs to have sufficient resources and ability to support the operation and development of the enterprise, including human resources, financial resources, material resources, information, etc. Resources and capabilities can be either internal or external, such as partners, investors, governments, etc. The acquisition and utilization of resources and capabilities is one of the important tasks in the early stage of enterprise production. In the early stage of their emergence, enterprises are faced with many uncertainties and changes, which need to deal with various risks and challenges, such as market changes, competitive pressure, legal regulations, technical barriers, etc. Risks and challenges can be threats or opportunities, depending on the coping strategies and capabilities of enterprises.

2. Growth period

The enterprise is separated from the chaotic economic system into a relatively independent system. Due to the birth time is not long, the operation order of each element of the enterprise system is still very low, for example, the lack of clear rules and regulations of enterprises entrepreneurs lack of depth in management. In the face of complex enterprise environment is lack of experience. As a new thing, the enterprise system faces all kinds of difficulties in action inevitably appears some passive in order to change this adverse situation, the enterprise system must grow rapidly.

Enterprises in the growth stage are usually in the period of rapid expansion, which needs to improve their market share and economic benefits through continuous investment and expanding the production scale. Enterprises in the growth stage need to timely adapt to the changes of market demand, actively introduce and develop new products or services, constantly improve product lines, improve product quality and reduce costs, so as to enhance the core competitiveness of enterprises. Enterprises in the growth stage need to actively integrate resources, including human, material and financial resources, to support the development needs of enterprises, improve production efficiency and reduce costs. In addition, enterprises also need to strengthen brand building and publicity, actively shape the corporate image and reputation,

improve consumer awareness and trust, and promote the promotion of sales and brand influence. Enterprises also need to upgrade their management and organizational structure, and establish a sound management system and human resource management system, so as to support the rapid development of enterprises and improve their management efficiency.

3. Maturation period

In the mature stage, the enterprise has formed a sound rules and regulations and a perfect organizational structure, and has a relatively stable source of profits, the founder of the enterprise has changed from directly operating the enterprise to hiring professional managers to entrust management. At this time, the enterprise has also accumulated rich experience and wisdom, and the anti-interference ability is greatly enhanced. The enterprise gradually changes to develop outside, maintain and consolidate the existing position, from passive adaptation to the environment to active transformation of the environment.

In the mature stage, the market share of enterprises is relatively stable, and the competition pattern has been basically determined. Enterprises need to maintain their competitive advantage by consolidating the existing market and looking for new markets. At this time, the enterprise's products have been relatively mature, product innovation is relatively less, mainly in the maintenance and improvement of product quality investment. Enterprises in the mature stage usually need to pay attention to cost control and efficiency improvement, and improve their profitability by optimizing the production process, saving costs and improving the management efficiency. In addition, enterprises in this stage also need to improve and upgrade their technology to keep pace with the market and technology to improve product quality and production efficiency. At the same time, it is necessary to adjust the organizational structure and improve the management level and efficiency to meet the needs of enterprise development.

4. Winter

With the development of science and technology, new technologies and new products continue to emerge. If enterprises fail to introduce new technologies and develop new products in time, they will gradually lose their market competitiveness. When the market saturation increases, the market demand tends to stabilize, and the market growth rate decreases, it is difficult for enterprises to make new breakthroughs in the market share competition. With the expansion of enterprise scale, the difficulty of enterprise management gradually increases. If the enterprise management lags behind and cannot adapt to the market demand and management change, it will gradually lose its competitive advantage. As time goes by, the resources and market advantages of enterprises are gradually consumed. If the enterprise cannot adjust its strategy in time and find new growth points, it will gradually fall into the situation of resource exhaustion. If an enterprise makes strategic mistakes, such as blind expansion, missed market opportunities, and investment failure, it will gradually lose its market share and competitive advantage, and then fall into recession. At this time, the movement of various elements within the enterprise changes from order to disorder, so that the original orderly structure of the enterprise system is destroyed, the function of the system is deteriorated and the anti-interference ability is reduced. The operation efficiency of the enterprise organization is quite low, which is manifested in the decline

of product competitiveness, the market share is shrinking, and the enterprises in the recession stage gradually change from orderly to chaos.

At this stage, due to the comprehensive effect of the external environment and internal management and other factors, the market share of enterprises gradually declines, and enterprises gradually lose their advantages in the market competition. At the same time, the market share declines, the sales volume of enterprises gradually decreases, and the operating income gradually declines. Due to the fierce market competition and rising costs, the profit margin of enterprises is gradually declining, and the profitability of enterprises is suppressed. At this time, there are also problems in the operation and management of the enterprise, such as management team mistakes, rigid organizational structure, staff loss, etc., the management of the enterprise is chaotic, and it is difficult to operate effectively. Due to the decline of corporate profits and sales volume, enterprises face financial pressure, such as cash flow shortage, debt accumulation, etc. The performance of the enterprise in the market is gradually declining, the brand value of the enterprise is gradually declining, and the visibility and reputation of the enterprise is gradually declining.

5. Death phase

With the increasing disorder of the movement of the elements within the enterprise, when the disorder tends to approach the disorder of the whole chaotic economic system, the elements in the enterprise collapse, the system collapses, and the enterprise collapses.

At this time, the market share of enterprises gradually narrowed, unable to compete with competitors, and finally withdraw from the market. In the process of operation, the enterprise suffered significant losses and was unable to repay its debts. At the same time, the enterprise was faced with problems such as aging production equipment and backward technology, unable to carry out normal production, and finally stagnated. The scale of the enterprise is gradually narrowed, the need for large-scale layoffs, resulting in adverse social impact. In the process of market exit and financial bankruptcy, the enterprise image gradually declines, the brand value and market reputation are gradually lost, the management faces great pressure and challenges, the management is chaotic, unable to operate effectively, and eventually dies out.

3.2. The performance of management entropy in different stages of the enterprise life cycle

1. Idiophase

Enterprise is a random orderly product of chaotic economic system, the enterprise early by disordered state gradually to orderly state, according to the definition of management entropy, at this stage, the enterprise management entropy is at a higher level, management entropy mainly manifested in information asymmetry, management chaos, etc., this is due to the lack of experience, the lack of resources and management system. As the enterprise moves from birth to growth stage, the management entropy value drops accordingly. In order to develop in the medium and long term competition, enterprises will constantly mobilize their resources to form more effective structure and function, so as to adapt to the external environment and form a stable benign interaction with the external environment. This kind of self-organization is carried out by enterprises to adapt to the environment, and this kind of adaptation is realized through

self-organization. At this time, various elements of the enterprise, such as talent, capital, technology and so on, will suddenly make an orderly movement in the direction of meeting the market demand, and its goal is to pursue economic profits.

2. Growth period

In a closed system environment, always presents the effective energy gradually reduced, and ineffective energy increasing an irreversible process, namely the management efficiency law, in the case of no intervention will inevitably management entropy increase, management entropy mainly for organization flattening, process, etc., this is due to the enterprise in the process of rapid expansion, management system and process is not yet perfect, difficult to effectively respond to the increasingly complex business environment, enterprises will be from orderly to disorderly state. At this time in order to avoid the phenomenon of management of entropy increase, you need to form management dissipative structure, introducing negative entropy, when a complex enterprise organization away from equilibrium, constantly with the environment for energy, material and information exchange, under the interaction between internal units, negative entropy, increase, the organization order is greater than the increase of disorder, to form a new orderly structure and produce new energy. At this time, when the negative entropy flow introduced by the enterprise from the external environment, or the internal management negative entropy generated, can continuously offset the entropy increase under the same entropy increase interaction, making the enterprise system show negative total entropy. At this time, the enterprise system is in an orderly development state, and the management efficiency of the enterprise is high.

3. Maturation period

In the enterprise and the external environment in the process of material, energy and information exchange, when the introduction of entropy flow or internal management the sum of negative entropy flow, lasting is equal to the enterprise system within the new entropy, the total entropy of the system no longer change, the enterprise will become an open complex system, enterprise has entered the mature period. At this time the management entropy in a stable state of balance, in the mature stage, enterprise internal management entropy increase mainly for deficiencies in management rigidity, innovation, etc., this is due to the enterprise in the mature period has formed a certain management system and process, but may lack of innovation consciousness and flexibility, it is difficult to adapt to the rapidly changing market environment.

4. Winter

When enterprises introduce negative entropy flow and internal management negative entropy is not enough to offset the natural process of internal entropy increase, which makes the total entropy value of enterprise system, enterprise movement from orderly to disorder, destroy the orderly structure of the enterprise system, system function deterioration, anti-interference ability decline, the enterprise introduced the negative entropy flow interaction with the external environment, also introduced the positive entropy flow, these problems further led to the increase of system entropy value, exacerbated the disorder of system elements, make the overall situation of the enterprise system further worse, the enterprise entered the recession.

Enterprises at this stage by the external pressure and internal friction interaction, on the one hand, the external pressure on the system elements caused by the organization

mechanism, will aggravate the elements of disorder, make the system internal friction increases, on the other hand when the system internal friction increases, enterprise anti-interference ability will reduce, thus more difficult to cope with external pressure, eventually lead to the period of enterprise system management entropy increase, enterprise gradually to disorder.

5. Death phase

As enterprise system management entropy value increasing, the internal elements of disorder, when the change reached the critical point, the enterprise internal disorder approximate to the whole chaotic economic disorder, the enterprise system management entropy value reached the maximum, the elements will be toward chaotic economic system disorder, leading to the collapse of the enterprise system, enterprise eventually die.

4. The Impact of Management Entropy on The Enterprise Life Cycle

4.1. The significance of the impact of managerial entropy on a company's lifecycle

1. Innovation and Flexibility:

A moderate level of managerial entropy can encourage innovation and flexibility, helping the company rapidly adapt to market changes, particularly in the startup and growth phases.

2. Resource Optimization:

Lowering managerial entropy can improve resource utilization efficiency, particularly in the mature and decline phases, reducing waste.

3. Organizational Efficiency:

Appropriate managerial entropy can promote collaboration and employee engagement, enhancing organizational efficiency and employee morale.

4. Risk Management:

Controlled managerial entropy can reduce risk, preventing decision-making confusion and errors, contributing to organizational stability.

5. Corporate Culture and Values:

Managerial entropy is closely linked to corporate culture and values. It can shape the company's culture, reflecting leadership styles and organizational values.

6. Sustained Competitiveness:

Managing managerial entropy effectively helps companies maintain competitiveness and sustainability, ensuring their long-term presence in the market.

7. Change and Restructuring:

Adjusting managerial entropy can assist companies in better coping with change and promoting innovation and fresh thinking when change or restructuring is needed.

The impact of managerial entropy on the corporate lifecycle is of paramount importance to managers. Managers need to manage and adjust managerial entropy according to the stage and market environment in which the company operates in order to balance order and innovation, ensuring the company can adapt to change and achieve success. Excessive or insufficient managerial entropy can both potentially have negative effects on the business, making it crucial for careful consideration at different stages.

In the early stage of an enterprise, the management entropy is reduced from high, the enterprise is in the growth period,

the effective energy of management energy and production and operation factors is increasing, and the management efficiency is continuously improved, so the enterprise can develop and grow rapidly. In the mature stage, the management entropy of the enterprise reaches a stable state. As the enterprise gradually enters the mature stage, the management entropy gradually increases, and the enterprise needs to consume more management energy to maintain the operation, so the management efficiency gradually decreases. If companies fail to take timely measures to deal with the increase in entropy, it may lead to recession or even collapse. In the recession stage of an enterprise, the management entropy reaches the peak, and the production and operation factors of the enterprise are gradually out of control, and the influence of the entropy increase is difficult to reverse, so the enterprise is in a state of irreversible recession. At this time, enterprises need to take extremely effective measures to delay the speed of entropy increase as far as possible and maintain the survival and development of enterprises. Therefore, enterprises must realize the impact of management entropy on the enterprise life cycle, and take effective management measures to reduce the impact of management entropy, and improve the management efficiency and competitiveness of enterprises.

4.2. The management measures of the enterprise.

In order to mitigate the adverse effects of managerial entropy, extend the lifespan of a business, and maintain competitiveness, companies can adopt a range of effective management measures:

1. Continuous Innovation and Improvement:

Sustained innovation is key to a company's growth. Encouraging employees to generate new ideas and explore new markets and product areas is essential. Improving management methods, production techniques, and product structures enhances production and management efficiency, reducing the occurrence of managerial entropy.

2. Optimizing Management Structure:

By streamlining the organizational structure, reducing unnecessary middle management layers, and simplifying management procedures and processes, a company can enhance management efficiency. A streamlined structure helps in making decisions more quickly and being more adaptable to market changes.

3. Establishing Information Systems:

Developing efficient information systems that facilitate the sharing and transmission of information within and outside the organization is critical. This reduces information asymmetry and barriers, enhancing the accuracy and timeliness of management decisions, thus alleviating the negative impact of managerial entropy.

4. Enhancing Employee Skills:

Investing in employee training and education to elevate their professional skills and qualities equips them to adapt to market changes and technological innovations. Highly skilled employees contribute to increased production efficiency and management effectiveness, lowering the risks associated with managerial entropy.

5. Strengthening Corporate Culture:

Establishing a strong corporate culture, defining core values, and fostering unity and harmony in the workplace is essential. This enhances employee cohesion and loyalty, driving the company towards long-term sustainable

development and reducing the adverse effects of managerial entropy.

These comprehensive management measures help companies better adapt to the ever-changing market and management challenges, reducing the impact of managerial entropy, extending the company's lifespan, and promoting sustained success and growth. Companies should formulate appropriate strategies and plans based on their specific circumstances and market environment to ensure the effective implementation of these measures.

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