THE DIAGNOSIS OF THE ENTERPRISE VALUE CRISIS AND THE PARTICULARITIES OF ITS MANAGEMENT

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Abstract: *The practice of developed countries demonstrates that value has a number of unique properties that make it the best decision-making criteria for crisis management and, in a broader sense, the best criterion for assessing the success of enterprise management in general. The global economic crisis, the fragility of enterprise value in the current economic context, and the ongoing diversification of value creation sources served as a basis for researching the mechanism of diagnosing the enterprise value crisis. The mechanism is based on the internal factors of the enterprise environment, i.e. the financial factors, and is detached from the macroeconomic environment in which the enterprise operates. According to the author, the diagnosis of the crisis situation aims to establish the moment when the company starts to lose its value, which is a premature signal of the enterprise's crisis. Therefore, the diagnosis of the enterprise's crisis-entry process is carried out in two ways, which are based on enterprise valuation methods and the economic profit indicator. In the research, the author studies the particularities of the value crisis management according to the stage of life cycle. For crisis management, the author examines the enterprise based on three financial dimensions: liquidity, risk and value, and determines the vectors of decisional efforts at different stages of the life cycle.*

Keywords: *enterprise value, value-based management, crisis diagnosis, diagnosis of the enterprise value crisis, enterprise value management.*
JEL Classification: *G32.*

1. Introduction

The enterprise management process aims at achieving a fundamental goal - maximizing its value. Economic developments in recent years have shown that the value of an enterprise correlates with the existence of a healthy domestic financial environment within the enterprise. Therefore, searching for the most effective methods of organizing financial activity is a serious call for the local business environment.

The global economic crisis, the fragility of the value of the enterprise in the current economic context, and the ongoing diversification of value creation sources served as a basis for researching the mechanism of diagnosing the enterprise value crisis. The mechanism is based on the factors of the company's internal environment, i.e. the financial environment, and is detached from the macroeconomic environment in which the enterprise operates.

The cause of the problems for most of enterprises is not the crisis itself, but the inadequate management decisions previously taken, possibly many years before the crisis.

The practice of developed countries demonstrates that value has a number of unique properties that make it the best decision-making criterion for crisis management and, in a broader sense, the best criterion for assessing the success of enterprise management in general. In a correct use, the value criterion allows for effective decisions that will improve the long-term economic situation of the enterprise.

We believe that recent events have accentuated the value of business-driven enterprise value. Those who assimilated it pretty well, currently have important advantages. In particular, during the crisis, they focused better on the business environment, because they were driven not only by the information provided by the market, but also by the results of their own analysis and the enterprise value modeling.

2. Considerations on enterprise value management in a crisis situation

The events of the international financial crisis have shown that the market price for listed companies and the transaction price for private enterprises cannot serve as a benchmark for crisis management decisions. However, the limited ability of the market to determine the internal value of the enterprise does not question the timeliness of the value-based approach. On the contrary, the orientation towards the internal value for existing owners under disproportionate prices is a well-grounded approach to managing the business in times of crisis.

By synthesizing the bibliographic sources in the field (Rappaport, 1986; Evans and Bishop, 2001; Chernozzub, 2010; Damodaran, 2012), the author identified the essence of enterprise value management in a crisis situation characterized by the following:

1. The main indicator of the business situation in times of crisis is the internal value for the existing owner. It is very important to determine the value of the business, regardless of the market and investors' reaction and behavior. As the crisis progresses, we can reevaluate the enterprise to find out the dynamics and analysis of the causes that have generated changes in value;
2. In times of crisis, the use of enterprise value management concepts makes it possible to take decisions that are not obvious. For example, under normal circumstances, loss of market share can be seen as a defeat, and in times of crisis, a conscious reduction in activity can lead to an increase in value;
3. Essential changes in the external environment require us to give weight to value factors. Will be determined the register of value factors and the impact of each factor on the value of the enterprise, after which focus on the most important ones;
4. Modeling possible changes in value factors allows us to assess the risks and verify the company's safety margin;
5. If the company resists the safety test, we can say that its strategic possibilities not only allow to pass the crisis, but also make a leap once the crisis is over. It is necessary to predict the evolution of value factors during the development of the crisis.

In the literature, the issue of enterprise value management in a crisis situation is practically not approached, the possibilities of using the enterprise value in the anti-crisis management, the merger and takeover of enterprises are researched (Evans and Bishop, 2001; Gryaznov et al., 2003), and some sources address the issue from the perspective of management and valuation of insolvent enterprises at different stages of the insolvency process (Chernozzub, 2010).

Anti-crisis management, in the context of enterprise value management, presents the creation of a system of principles and methods for the elaboration and realization of a complex of managerial decisions, aimed at preventing and overcoming the reduction of the value of the enterprise, as well as minimizing the negative consequences on the enterprise.

The primary purpose of enterprise value management in a crisis situation is to recover the financial situation of the enterprise and minimize the reduction of its value, caused by financial crises.

According to the author, in the process of achieving its main purpose, the enterprise value management in a crisis situation has to solve the following basic tasks (Figure 1):

1. Implement a value monitoring system, which will signal the enterprise's management of the value evolution and which will be achieved through:
- the diagnosis of the triggering of the value crisis;
- establishing the decision-making vectors according to the life cycle stage.
2. Implementing a value piloting system that will be achieved through:
- operative value management (short term);

– strategic value management (long-term).

3. Implementing the value control system.

Based on the above-mentioned task, we consider that they can be the basis for value management and we recommend the following model of the value management system in crisis situation, Figure 1:

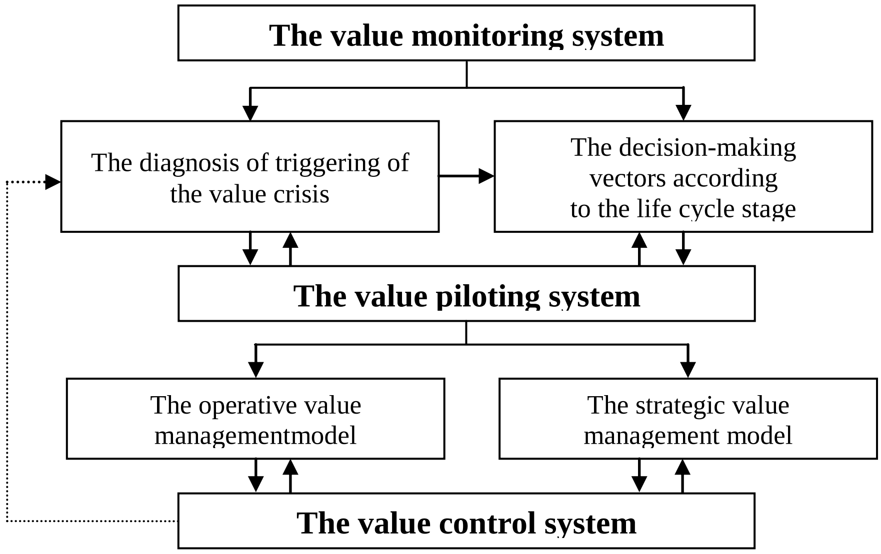

Figure 1. Enterprise Value Management System in Crisis Situation

Source: elaborated by the author.

According to the author, the stages of the value management system in crisis situation are current at a certain stage of the enterprise's lifecycle, so only the value monitoring system can be applied at the start-up stage, as at this stage the enterprise faces survival problems and it is premature to talk about the implementation of a value management and control system, but at the growth, maturity and decline stages, all components of the enterprise value management system can be applied.

In the present research we will only deal with the components of the value monitoring system, namely the diagnosis of the enterprise value crisis and the particularities of the value crisis management in relation to the life cycle stage, the other components of the value crisis management system of the enterprise will constitute subject to further research.

3. Approaches to the diagnosis of the enterprise value crisis

By solving the problem of managing the enterprise value in overcoming the crisis situation, *first of all* we consider it important to establish *a crisis diagnosis mechanism*, namely the situation in which the enterprise starts to lose its value, which is the premature signal of enterprise crisis.

In order to solve the given problem, we propose to diagnose the process of entering the enterprise in a crisis by two ways, which are based on the use of:

–Instrument of enterprise valuation methods;

–The economic profit criterion.

3.1. Diagnosis of the crisis based on enterprise valuation methods

During the use of *enterprise valuation methods* in diagnosing the crisis situation, our approach is based on the fact that the current (internal) value represents the initial stage, and at the same time the control point in the anti-crisis management. Namely, the evolution of the fundamental value signals incipient and prematurely the future entry of the enterprise in crisis.

As we know, the modern enterprise evaluation tool is based on 3 methods: the expense, revenue, and comparative (market) method.

We believe that the basis of each valuation method is the fundamental signals of value creation. According to the author, the expense model is the discrete model of the increase in the value of the enterprise, but in general, the value of the enterprise itself is estimated on the basis of the capital size and reflects the current prospects of the enterprise. The basis of the revenue method is the model of continuous value growth, and the value of the enterprise expands through the mechanism of actualizing future cash-flows and reflects a long-term vision of the enterprise's development. The theoretical basis of the comparative method is the general-scientific method of the comparative analysis, and the basic premise of its application is the existence of a developed financial market.

As a result of the systematization of modern enterprise valuation methods and various criteria for value creation, the author of this research has determined the scope of their use in detecting the situation of entering in crisis and destroying the value of the enterprise.

Table 1. The diagnosis of the crisis situation based on the enterprise valuation methods

No.	Estimated value based on different methods	Conclusions
1.	$V_p>V_v$ $V_p>V_c$	The enterprise is growing, there is an increased investment demand on the enterprise, the development potential is undervalued, high liquidity of the shares and other securities
2.	$V_p<V_v$ $V_p<V_c$	Enterprise is declining, low investment demand on the enterprise, low liquidity of securities
3.	$V_v<V_c$	Existence of signs of worsening of the financial situation and orientation towards short-term development perspectives
4.	$V_v>V_c$	The existence of signs of improvement of the financial situation and the appearance of the long-term development prospects of the enterprise
Where V_p - the value of the enterprise obtained on the basis of the comparative (market) method; V_v - the value of the enterprise obtained on the basis of the revenue method; V_c - the value of the enterprise obtained on the basis of the expense method.		

Source: elaborated by the author.

The analysis of points 1 and 2 of Table 1 determines the appropriate time to sell the business on the basis of a comparison of the enterprise's market value with the fundamental value.

The analysis of points 3 and 4 of Table 1 sets out the prerequisites for addressing the financial crisis of the enterprise based on an indicator - the enterprise value indicator, its dynamics and the ratio between value indicators estimated on the basis of the discrete and continuous growth model formulas.

Based on the obtained results, namely establishing the mechanism of the interdependence between the enterprise's value and the financial state of the enterprise, by which the worsening (improvement) of the financial situation of the enterprise is explained by the change of the value factors of the discrete and continuous growth model, the author solves the problem of creating *the premature diagnostic model of the entry of the enterprise into crisis* and the loss of value in the near future.

3.2. Diagnosis of the crisis based on the economic profit criterion

When using *the criterion of economic profit* in diagnosing the crisis situation, our approach is based on the fact that an important step in the financial dimensioning of the process of value destruction within the enterprise is the identification of the critical amounts of the key financial indicators of the enterprise.

In order to solve the existing problem, we consider it important to identify the critical point in the value creation process that would involve a combination of the key financial and strategic characteristics of the enterprise where the change in the investment value would be zero. The zero value of the investment value would allow the delimitation of the critical level of the indicators. Thus, the strategic analysis of the financial model of the enterprise and its basic criterion - economic profit, will allow us to diagnose the crisis of value based on a new model of the profitability threshold analyzing, the particularities of which are formalized in Figure 2.

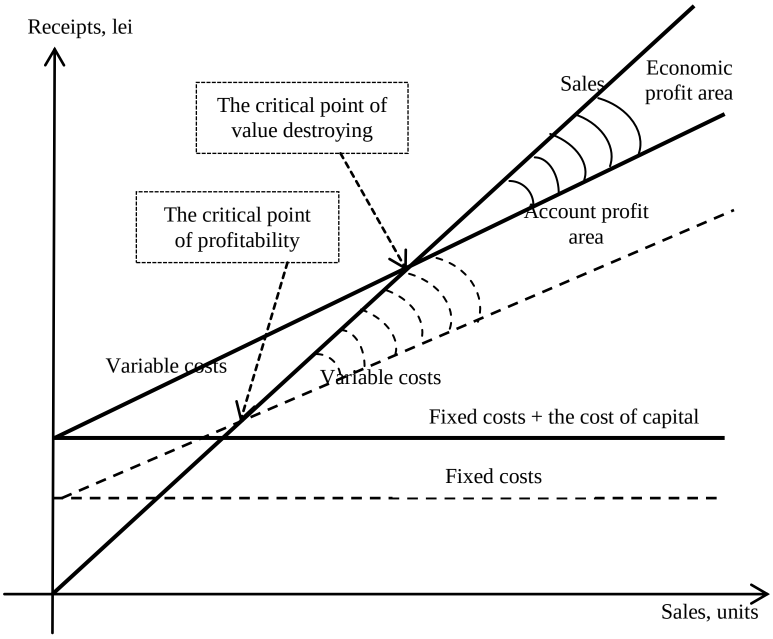

Figure 2. The critical point of enterprise value in correlation with the traditional analysis of the critical point of profitability

Source: elaborated by the author.

The traditional approach to the profitability threshold is based on the assumption of the possibility of applying the special classification of expenditures on the basis of the dynamics criterion and the highlighting of all variable expenditures, regardless of the sphere of their occurrence. Therefore, the task of this approach is to cover the expenses actually incurred by sales receipts. In other words, the main calculation point is zero accounting profit from basic activity. The main coefficient in the traditional analysis of the critical point is the operational leverage, which measures the sensitivity of profit from basic activity to changing earnings.

But the analysis of the critical point of value proposed involves another basis for determining the critical threshold, as it is based, as shown in Figure 2, on other assumptions. In this case not only the obvious (de facto) but also the non-obvious (alternative) expenses are detected. The underlying task is to cover total, obvious and alternative expenses, including expenses with capital. Therefore, another critical point of calculation appears: zero economic profit. Accordingly, new financial ratios are needed, which would include the impact of capital expenses, which remain permanent and independent of sales volume.

To determine the critical point indicator of value destruction, we will start from the zero economic profit hypothesis. Critical value of return on sales has a considerable impact on the critical point rating. The research of the problem of detecting such a critical size was dealt with by scientist *Alfred Rappoport* in his work *"Creating Shareholder Value. The New Standard for Business Performance"*[5]. According to A. Rapppoport, the critical profitability can be calculated both on the increase of expected sales (formula 2) and on the predicted sales (formula 1):

$$TPM_{inc} = \frac{(IFAIR+WCIR)\times WACC}{(1+WACC)\times(1-t)} \qquad (1)$$

$$TPM = \frac{OI_{t-1}+TPM_{inc}\times(\Delta S_t)}{S_t+\Delta S_t} \qquad (2)$$

where TPM_{inc} – profitability of annual sales growth; TPM (threshold profit margin) – critical profitability of total annual sales volume; $IFAIR$ – incremental fixed assets investment; $WCIR$ – working capital investment rate; S_t – sales in year t; ΔS_t – change of sales volume in year t; $WACC$ – weighted average cost of capital; t – tax rate; OI – operating income.

We recommend the use of critical dimensions to analyze the strategic value destruction both at the enterprise level and at the level of the enterprise's functional units.

4. The particularities of the enterprise value crisis management at different stages of the life cycle

An important step in enterprise value management in a crisis situation is *the financial stabilization of the enterprise*. But taking into account that financial crises can be triggered at different stages of the life cycle, we consider important that the financial stabilization process contains as main tools the management of key value impact indicators specific to that life cycle stage.

By manifesting at any stage in the enterprise's lifecycle, the financial crisis hinders the development of the enterprise, substantially increasing the life cycle stage. Characterizing this particularity of the financial crisis, it should be noted that its manifestation at every stage of the life cycle has its own specificity that must be taken into account in the process of financial stabilization of the value of the enterprise in a crisis situation.

The enterprises life cycle for different countries and different industries is diverse, but the life cycle curve for all enterprises is the same. The life cycle curve consists of different stages describing the enterprise's dependence on internal and external factors occurring over a certain period of time. To each stage can be attributed the financial factors that influence the value of the enterprise (Table 2).

Table 2. Organizational and financial particularities of the enterprise at different stages of the life cycle.

Stage of life cycle	Financial peculiarities	Organizational features	Dependence on external factors	Dependence on internal factors
Start-up	High share of borrowed funds, high financial risk, low profitability indicators	Gradual entry into the market, intensive marketing, establishing contracts with suppliers and creditors	Strong	Weak
Growth	Optimal financial risk, high production risk, high profitability indicators	Intensive modernization, increased production quality	Neutral	Neutral

Maturity	Optimal overall risk, high returns, reduction of rotation coefficients of current assets	The total employment of all resources, the gradual immobilization of the working capital, the wear and tear of the fixed assets	Weak	Strong
Decline	Total high risk, low returns, rotation and solvency indicators	Poor marketing, loss of trust by suppliers and creditors, resource wear	Strong	Strong

Source: elaborated by the author.

In the process of value crisis management of the enterprise, we propose to examine the enterprise based on three financial dimensions: liquidity, risk and value.

The analysis of the enterprise at different stages of the life cycle through the financial component will allow us to solve two tasks: to detect the changes that are characteristic of each financial dimension and to introduce a new aspect in the issue of the enterprise movement from one stage to another in the life cycle, namely that of value.

The start-up stage is characterized by the creation of the enterprise, therefore at this stage the value of the enterprise is highly conditioned by the outside forces, the financial activity being just a beginning. However, from a financial point of view, the value of the enterprise at this stage can be defined by the enterprise's net assets (the value of the invested capital).

Throughout the start-up stage, the cash-flow of the enterprise from the operational and investment activity is negative, respectively to supply the enterprise with financial resources, the enterprise resorts to external financial sources, registering a positive cash-flow from the financial activity. The negative cash-flow of the operational activity is explained by: (1) low efficiency due to low production volumes and the existence of losses; (2) there is still a need for additional investments in the enterprise's working capital to increase the production volume. Typically, the increase in current assets takes place on the investment resources of the founder of the enterprise.

Therefore, we consider that at this stage an unusual situation is formed, for which the existence of the crisis is characteristic. Addressing the crisis in correlation with the objectives of the enterprise, we can see that in a crisis situation, the enterprise develops based on a determined logic, which contains the following phases:

1. *The strategy crisis*, which involves special errors in product portfolio decisions, inappropriate industry and competition misconduct, and mistaken positioning of the enterprise;
2. *The results crisis*, i.e. errors in investment activity and minimum return on invested capital;
3. *The liquidity crisis*, the lack of financial resources for solving the enterprise's tasks.

The development of the crisis based on the above logic is possible at any stage of the life cycle.

If we take into account the particularities of the movement on the life cycle curve, then we can highlight the particularities of the problem of the financial resources sufficiency at different stages. We will then examine the changes in the liquidity dimension as they move to a new stage. Analysis of the changes will allow us to complement the concept of life cycle with financial crises, which are generalized in Table 3.

Table 3. Liquidity and financial crises at different stages of the life cycle

The type of crisis	Start-up	Growth	Maturity	Decline
Enterprise liquidity crisis	Permanent negative CF from operational activity	Periodically negative CF from operational activity	It's not a feature	Periodically negative CF from operational activity
The liquidity crisis of the owner's capital	Permanent CF negative for owners	Periodically negative CF for owners	It's not a feature	Periodically negative CF for owners
Financing crisis	The impossibility of attracting borrowed capital and reducing capital expenses	Unbalanced relation between equity and borrowed capital		

Source: elaborated by the author.

Based on Table 3, we see that the following financial crises are characteristic at the start-up stage: the enterprise's liquidity crisis and the liquidity crisis of the owner's capital. The first type of crisis is caused by the disproportion between working capital and the increasing needs of the business. For the owner, the crisis consists in creating a negative cash-flow, and thus reducing the value of the enterprise.

In order to overcome the liquidity crisis, it is necessary to manage the working capital prudently by correlating the growth rate of current assets with the rising debt ratio, reducing the growth rate of some current assets by using their efficiency and optimizing their volumes. The task of management is to bring the enterprise's operational flow to the area of positive dimensions. Therefore, the key process is *to transform the entrepreneurial energy into a constant cash-flow from the operational activity*.

In order to manage the value of the enterprise at the start-up stage, particular attention should be paid to liquidity and financial stability indicators. Since this period is characterized by the start of production and the lack of full use of production capacities, it is not rational to make any conclusions based on profitability or rotation indicators. As a rule, at the start-up stage, the weight of borrowed sources in the enterprise's liability is important, which increases the financial risk, therefore enterprise value management actions will aim to stabilize the financial indicators.

At *the growth stage,* the basic process consists in *turning the cash-flow into market share*. The entire stage is disturbed by *management crises*: the first group of crises leads to the delimitation of the managerial function from the entrepreneurial function, and the second group is focused on the crash of the entrepreneurial and owner roles. In the face of the entrepreneur, there is the dilemma of sharing ownership with new investors, because it is necessary to share control over the enterprise in order to solve the growth objectives. Settlement of growth targets on account of the active attraction of borrowed capital, but not of own capital, is confronted with the credibility of the enterprise and the quality of attracted credit management. Thus, a necessary problem to solve at this stage is *the strategic character of the capital structure*, which is conditioned by:

1. The impact it has on the weighted average cost of capital. The small weight of borrowed capital de facto denotes the non-use of cheaper financial resources than its own capital. Respectively, the enterprise has high capital expenditures;
2. The strategic nature of the capital structure shows that attempting to resolve growth on loans without attracting new investors-owners leads to the emergence of specific effects linked to the considerable weight of borrowed capital in the capital structure. These effects create barriers to enterprise development, that is to say, related to the selfish investment decisions of management that lead to conflicts of interest between the

manager and the owner. Given the large weight of the borrowed capital, the manager will either select high-risk investment projects, or refuse to invest in projects at a similar risk to the one typical of the enterprise. In the first case, the phenomenon of corporate finance has been called the substitution of assets or the change in the risk profile of assets, and in the second it is refused investment or insufficient investment.

At the same time, we tend to mention that with the increase in financial risk, the enterprise's competitive immunity is diminished, by stealing funds in servicing loans, to the detriment of investing in development.

The specificity of financial crises at the growth stage consists of:

– Changing drivers of the enterprise's liquidity crisis, which is linked to rhythms of growth. Thus high growth rates can lead to the formation of a negative cash-flow from operating activity not because of losses but due to enormous investments in working capital.
– The dilemma of the simultaneous financing of the increase in production volume and the acceleration of investments. The task of growth requires solving the issue of investment in working capital, but that of the acceleration - long-term investment in development.

In order to manage the value of the enterprise at the growth stage, rotation and profitability indicators have a particular importance. That higher is the level of these indicators, that greater is the impact on the enterprise value.

The maturity stage occurs as a result of the increased use of all the forces of the enterprise, i.e. it is manifested through the involvement of all resources (labor, land, production capacities, capital, entrepreneurial skills) and the maximum production, which means effective use and distribution of resources. At this stage, the role of internal factors, namely financial ones, in managing enterprise value is maximal, as external conditions are beneficial to a mature enterprise.

At this stage, the enterprise undergoes a new series of crises, and in a normal development it has a scattered capital structure. Financial liquidity crises are not current. Following the definition given by Boston Consulting Group specialists, the enterprise becomes "milking cow". However, the causes for the onset of financial crises are preserved.

In order to manage the value of the enterprise during the maturity stage, particular attention will be paid to the state of the indicators of sales profitability, return on assets and equity, and the duration of rotation, i.e. the financial component of the stability of the enterprise's operation. But if the indicators of financial and production risk are high, then liquidity and solvency indicators will be required to stabilize. The deviation of the financial indicators from the average values per branch in the maturity stage tells us about the financial instability in the operation of the enterprise and if no remedial measures are taken, the enterprise will find itself in a difficult situation.

Among the basic signals certifying the reduction of the financial value of the enterprise in the maturity stage may be, first of all, the physical and moral wear and tear of fixed assets, the renewal of which requires the attraction of additional resources, which leads to the increase of the risk indicators of the enterprise. However, if management will strictly plan its actions and move to a new technic and technologically level, while increasing the volume and quality of goods, then the company will move to a new life cycle in the growth stage, respectively avoiding the period of decline.

Analyzing the possibilities of applying the theory of value management to enterprises in crisis, we formulated and systematized the monitoring vectors of the main financial indicators of enterprises according to the life cycle of the enterprise presented in Figure 3.

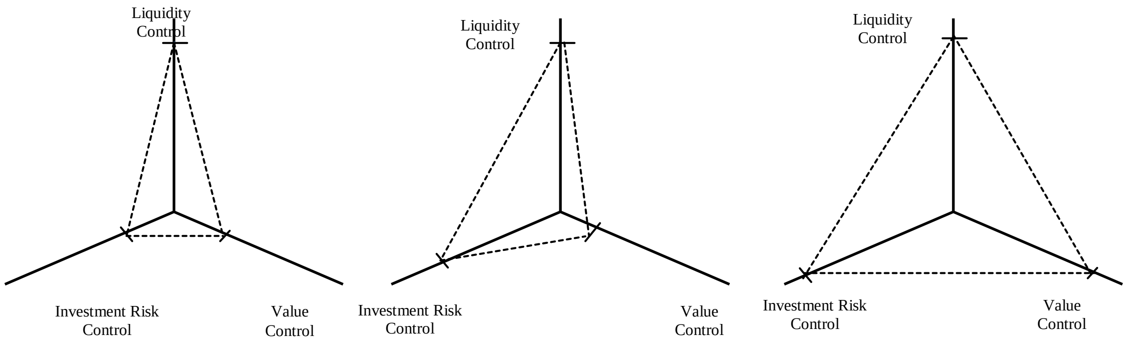

Figure 3. The vectors of decisional efforts at different stages of the life cycle
Source: elaborated by the author.

For effective enterprise value management at different stages of the life cycle, the evaluation criteria must be individual to each step, as they directly depend on the factors that influence the enterprise at a certain stage of the life cycle. The enterprise evolving over time is subject to changes in the structure of assets and liabilities, competitiveness, fixed assets and other factors. Thus, depending on the life cycle stage, there are a number of priority directions in enterprise value management, which is based on the specificity of problems that correspond to one or another stage.

5. Conclusions

We believe, that the methods of diagnosing the enterprise value crisis outlined in this research, represents a proactive approach to crisis management. Timely detection of the crisis enables the enterprise's management to take operational measures to neutralize unwanted phenomena and correct the development vector.

However, a key issue of contemporary financial management science is to develop and propose solutions to the possibility of obtaining long-term benefits from economic crises. In order to resolve the issue, the subject of further research will be *the value piloting system* and *the value control system*.

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