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Prace Naukowe Akademii im. Jana Długosza w Częstochowie. Pragmata tes
Oikonomias 10, 87-100

2016

Artykuł został opracowany do udostępnienia w internecie przez Muzeum Historii Polski w ramach prac podejmowanych na rzecz zapewnienia otwartego, powszechnego i trwałego dostępu do polskiego dorobku naukowego i kulturalnego. Artykuł jest umieszczony w kolekcji cyfrowej bazhum.muzhp.pl, gromadzącej zawartość polskich czasopism humanistycznych i społecznych.

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Preventive crisis management through the concept of continuous management

Summary: The basis of preventive crisis management is the concept of continuous crisis management. The components of preventive crisis management system are the actions carried out in the pre-crisis stage. The article considers such objectives of preventive crisis management as monitoring of external and internal environment, risk assessment, forecasting enterprise sustainability, scenario planning, and development of preventive measures.

Keywords: preventive management, crisis management, environment factors.

Introduction

Crises are an integral part of the process of historical and spatial evolution of the world economy. In the contemporary world, in the era of interrelation and interdependence of national economies, crises and recessions occur more frequently, affecting a growing number of economic subjects. Management of individual organization in a constantly changing environment is becoming more difficult.

To mitigate the effects of the crisis organizations have to resort to the methods of crisis management. At the same time crisis management can be divided into preventive (pre-crisis) and reactive management (management at already occurred crisis situation).

Preventive crisis management is a part of continuous management aimed at effective negation of potential threats.

The main aim of the work is formalization of preventive crisis management system. The hypothesis of the article is suggestion that preventive crisis management is based on the concept of continuous crisis management, and the components of preventive crisis management system are the actions carried out in the pre-crisis stage.

1. Preventive and reactive crisis management

The term “crisis management” has emerged in the Republic of Belarus comparatively recently. The emergence of the term is particularly resulted from the transition of our country to a market economic system, the expansion of foreign economic relations and, as a consequence, a certain dependence of the country economy on the economic development of neighboring countries.

In the framework of the legislation of the Republic of Belarus, the term “crisis management” is associated primarily with the activities of the anti-crisis manager that carries out the procedures of enterprise bankruptcy (rehabilitation or liquidation).

However the enterprises resort to anti-crisis managers on the terms of running crisis situation, but the ongoing system crisis management is carried out by the managers of the organization.

Crisis management is a specific management activity. It has both common management features, and specific characteristics. Crisis management is a kind of management, implying controlled processes of crisis anticipation and insurance of the enterprise development in times of crisis [1].

Any management is in the long run crisis management, as the main objectives of enterprise management are the conservation of its structure and mode of its activity, as well as the implementation of programs and plans aimed at further development of the enterprise.

Proceeding from the foregoing crisis management can be divided into the following types:

- reactive crisis management;
- preventive (anticipatory) crisis management.

Reactive crisis management is implemented with the manifestation of negative consequences of crisis situations, and is aimed at stabilizing the Preventive crisis management is aimed at early detection of crisis indicators and prevention of crisis situation. The latter type of crisis management, in our opinion, is more effective.

The main objective of preventive crisis management is a timely gathering and analysis of information about indicators that characterize the internal and external environment of enterprise, a change of which may serve as a sign of crisis onset. With explicit manifestation of negative influence of external and internal environment processes, preventive management system loses its meaning.

2. Concept of continuous management

From the perspective of potential crisis, continuous management is a holistic process, the main task of which is to identify potential threats to enterprise and determination of the potential impact of these threats to business processes in

order to construct a sustainable organization that can effectively neutralize potential threats.

Continuous management can also be conditionally divided into 3 stages, as follows pre-crisis stage, crisis stage and the post-crisis stage. Each stage is characterized by certain actions in relation to crisis situation.

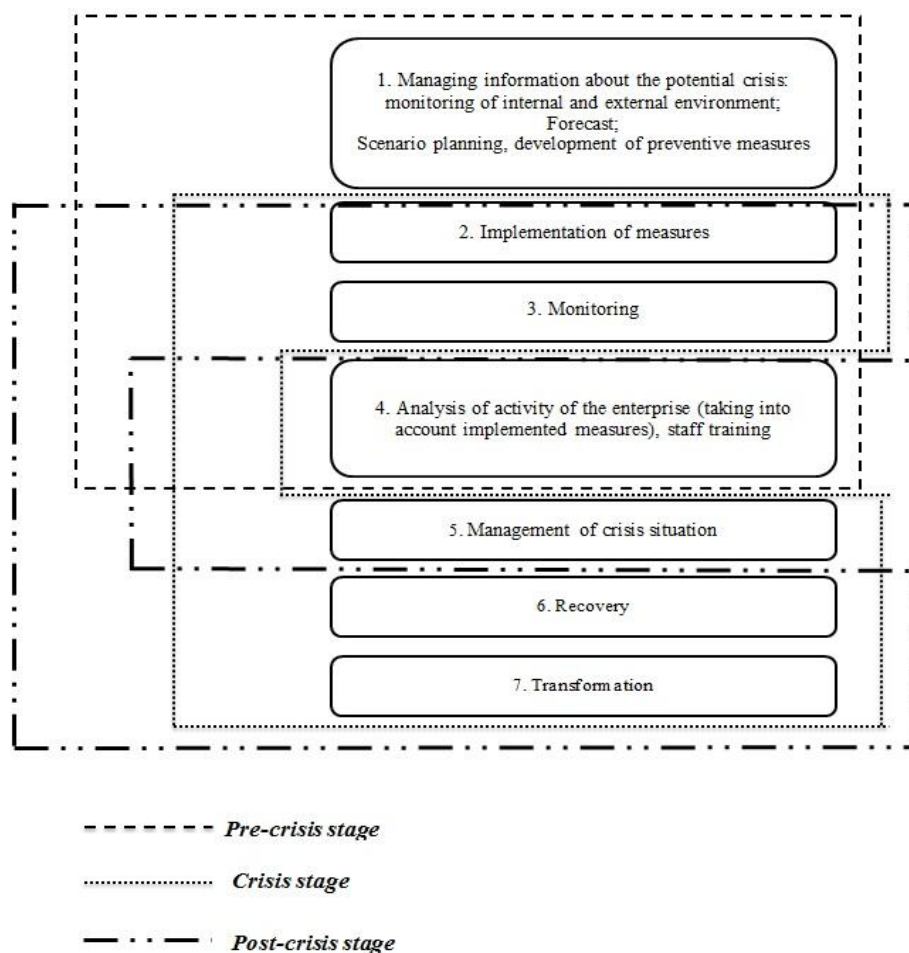


Fig. 1. Continuous crisis management

Actions carried out on the pre-crisis stage are the components of the of preventive crisis management system that has following key objectives:

- Analysis of external environment of the organization, formulation of generalized forecast of environment development.
- Monitoring of the internal state of organization in order to identify threats to its further functioning.

- Integrated diagnostics of every business process of the enterprise. According to some authors, preventive crisis management should be applied precisely to the individual business processes, conducted by the enterprise [2], [3].
- Determination of the current stage of organization life cycle of and preparation for potential threats.
- Development of anti-crisis measures aimed at preventing the causes of potential threats.
- Implementation of anti-crisis measures.
- Effectiveness evaluation of implemented measures.
- Development of scenarios of further organization development after implementation of preventive measures.

3. Monitoring of internal and external environment in the system of preventive crisis management

Analysis of external environment is one of the main components of the organization's management. The external environment can be divided into three interrelated categories: remote, branch and operating environment of the organization [4].

Remote environment includes economic, social, political, technological and ecological factors that are outside the control of the organization.

Branch environment is characterized by the conditions of competition for organizations offering similar products and services.

Operating environment of the organization embraces factors that have direct impact on its activity, and the organization itself can influence on these factors to a certain extent. Among the components of operating environment can be distinguished competitive position of the enterprise, its main customers, reputation of the enterprise's suppliers, as well as the reputation of the enterprise's employees.

Table 1. Environmental factors that potentially threaten to emerge crisis situation at the enterprise

Category of external factors	Changes in factors
Remote environment	<ul style="list-style-type: none"> – recession in national and global markets – decline in household income – influence of supranational organizations (the country's participation in the economic integration groups) – changes in age and gender structure of the population – changes in public attitudes – legal restrictions – technological changes – changes in climate, environment pollution

Table 1. Environmental factors... (cont.)

Category of external factors	Changes in factors
Branch environment	<ul style="list-style-type: none"> – power imbalances of major market competitors – emergence of new competitors, need for differentiation – threat of vertical integration posed by suppliers – threat of vertical integration posed by buyers – emergence of substitute goods and services
Operating environment	<ul style="list-style-type: none"> – displacement of the enterprise competitive position (loss of market share, decrease in price competitiveness) – changes in values of the enterprise's major customers – loss of primary supplier – credit crunch – restricted access to labor markets

External environment factors of different levels are mutually reinforcing and their transformation can complement and intensify changes on other levels. For example, changes in the monetary policy legislation in one way or the other affect the activity of banks, which in turn provides or limits access to credit on the part of organization. The emergence of substitute goods and services can move the value of the main consumers of the goods or services in one direction or another.

Combination of factors given in Table 1 can be extended and supplemented in accordance with branch and main activity of the company.

To analyze external factors can be used PEST-analysis that requires listing all the relevant external forces using four headings: Political, Economic, Sociological and Technological.

This analysis can be extended to ICEDRIPS-analysis that includes following components [5]:

- Innovation including new technology too which may be particular to an industry.
- Competitors. Not only direct rivals but threats from substitute products, new entrants to the market, the changing power of suppliers and the changing power of customers. (These five factors are known as the Five Forces of Competition).
- Economic factors such as inflation, exchange rates, downturns in the industry, public spending etc.
- Demographics. The relevant statistics of age, gender, geography, social class etc, and changes in these.
- Regulatory environment, ie laws, regulations, agreements and conventions.
- Infrastructure such as telecommunications networks, transport, public services and utilities.
- Partners. Strategic alliances with other companies or organizations.
- Social trends, including acceptance of technology, use of leisure time, fashions and changing beliefs.

The internal environment of the company includes its functional activities and key resources:

- Marketing (products and services, distribution, pricing strategy, image).
- Finance and book keeping (the volume of financial resources, revenue, ability to borrow, effective accounting).
- Production activities (technical efficiency, logistics system, technology development, patents).
- Staff (personnel qualification and motivation, human resources policies, staff turnover).
- Quality management (quality monitoring and improvement).
- Information systems (accuracy, timeliness and relevance of information, information communication with contractors).
- Management (organizational structure of the company, organizational climate, strategic planning, company's experience).

Internal environment of the company is a complex system. In its analysis should be taken in account both quantitative and qualitative factors of organization development.

To analyze quantitative factors are used methods based on objective standards of certain enterprise characteristics evaluation:

- Balance model of financial stability analysis.
- Predictive models of bankruptcy risk (discriminant analysis model – MDA): Altman Z-score [6], Lis model, Taffler model [7], Fulmer model [8]; in the post-Soviet space: Belikov-Davydova model [9], Zaitseva model [10], Savitskaya model [11].

The study of qualitative factors of organization development is based on the following methods:

- SWOT-analysis – a technique assuming that the effective development of organization is based on maintaining the balance of the company's internal resources (Strengths and Weaknesses) and external environment (Opportunities and Threats). The technique allows forecasting the further development of the company based on the interaction of internal and external environmental factors.
- Value chain analysis – analysis of the main and auxiliary activities of the company, transforming inputs into production that is of value to the consumer.
- Analysis of the company's internal resources – analysis of the strategic advantages of the company (tangible assets, intangible assets and organizational capabilities).
- PRIMEFACT-analysis – technique based on analyzing of 9 indicators: People, Reputation (or Brand), Intellectual property, Market information, Ethos (or Values or Culture), Finances, Agility, Collaborators and Talents (competencies and skills) [7].

On the basis of results of the company external and internal environment analysis there are made conclusions about the company current state, there is also formed a view about the potential risks to the company further functioning.

4. Risk assessment

Risk is a threat of potential loss of part of resources or shortfalls in revenue as a result of economic activity.

Despite the potential losses and threats accompanying risk, it is a source of income, so it is impossible to completely eliminate the risk of entrepreneurial activity.

Both internal and external environment factors, given above can operate as risk sources. At the same time there is a technique of forming a database of the external and internal environment critical points, which may lead the company to a state of instability. This technique includes:

- Environment scanning – analysis of officially published and syndicated data, study of retrospective information flow (allows to identify similar risks and assess their consequences for the system).
- Environment monitoring – tracking current and emerging information in order to prevent critical situation and system stability loss.
- Anticipation – creating information about future of the environment, its projective critical points (risk points).

5. Forecasting the stability of small enterprise

As part of preventive crisis management prognosis serves as a tool of information availability for enterprise sustainability. The main purpose of prediction is foresight of the system future state. Prediction is distinguished by uncertainty of knowledge about future behavior of the system, about the conditions in under which the system would develop.

There is defined a number of prognosis principles in prediction theory, which can be represented as requirements to prognosis characteristics [12]:

1. Purpose existence principle. For successful prediction the observer should formulated the purposes of system development. The main purpose of any enterprise development is profit maximization. However, when it comes to crisis management, the purpose may avoidance of crisis situation, leveling of its effects, enterprise survival.
2. Systematic principles. It requires consideration of all significant factors of development of the system and its components. This principle requires systematization of all internal and external environmental factors. The greater

the number of factors is taken into account, the more accurate will be the model of system development. However emergent properties of the system do not provide a model of its development through the model of development of its individual components. This means that the model should be developed taking into consideration mutual influence and multiplication of factors.

3. Multivariation and probability of prediction assumes that any system has a sufficient set of development trajectories. The challenge of enterprise's management is to select the most likely options of development, but the reliability of the estimates depends on the number of options considered. Most commonly extrapolation method are taken as initial alternatives, as they take into account the most stable patterns and connections peculiar to organizations. It should be noted that the extrapolation calculations are based on the principle of inertia, i.e. the fact that any system tends to the preservation of current trends, and the larger the system is the greater is its inertia. If we small enterprise as a system, its degree of inertia is quite low, because small businesses are characterized by a certain flexibility and maneuverability.

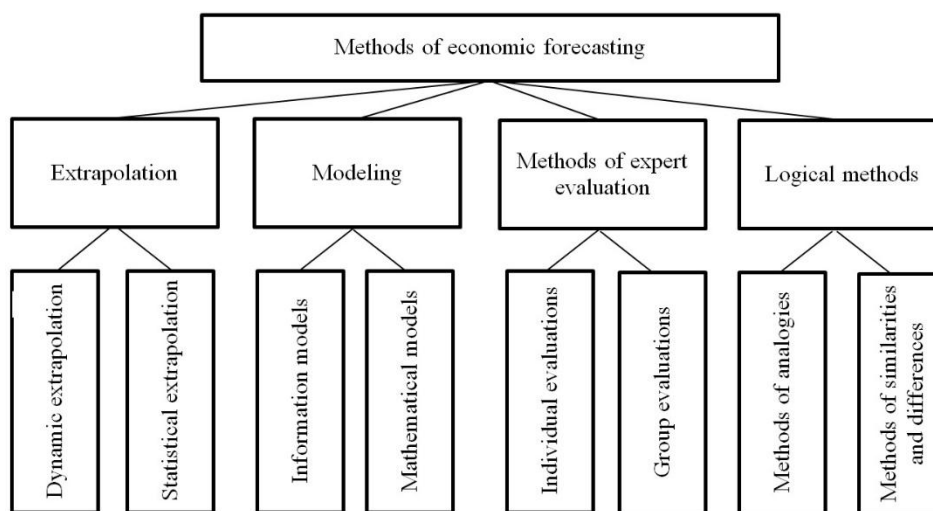


Fig. 2. Methods of economic forecasting

There are a variety of methods of economic forecasting, and during their selection it should be considered a significant limitation, namely that the prognosis horizon should be less than the interval of actual observations. Often, this significantly reduces the period for which the prognosis is made, especially in fluctuating economic systems, characterized by continuous movement, changes and restructuring that largely describes the current operating conditions of small businesses in the Republic of Belarus.

As previously mentioned, the activity of small enterprise has a probabilistic nature, which limits the use of traditional quantitative methods to predict future conditions business functioning. So often for these organizations are suitable qualitative evaluation methods: methods of expert evaluation, logical methods, information models.

6. Scenario planning

Scenario planning is one of management tools, which allows to generate a model of the future development of the company in the conditions of uncertainty.

Scenarios are different from forecast, prognoses and visions. Scenarios are vivid descriptions of plausible futures [13].

Table 2. Difference between, prognoses and visions

	Scenarios	Prognoses	Visions
Objects of examination	Possible, plausible futures	Probable futures	Desired futures
Basis	Uncertainty based	Based on certain relations	Based on values and desires
Risks illustration	Fully illustrate risks	Selective risks illustration	Hide risks
Methods of generation	Qualitative and quantitative	Quantitative	Qualitative and quantitative
Perspective term	Strong in medium to long-term perspective	Strong in short-term perspective	Function as triggers for voluntary change

Scenario planning includes five following steps [14].

Step 1. Focusing

On the basis of internal and external environment analysis there are selected factors that can particularly affect the development of organization. This step is being taken by head of the enterprise or crisis management team.

Among the factors internal and external environment are chosen key factors, that have urgently affected the organization activity in the past and the change of which can also affect future development of the organization.

The most effective way to implement this step is to conduct a survey of administration and other persons responsible for decision making process in the organization.

Table 3. Exemplary questionnaire for persons responsible for decision making process

Questions	Response analysis
1. <i>If you were able to have an answer to the question about the future development of the company, what the question would be?</i>	Helps to learn about the subjective attitude of the interviewee about the future development of the company, expectations / fears, as well as the factors that caused these expectations / fears
2. <i>In your opinion, what would be unavoidable over the next few years?</i>	It allows the respondent to think about inevitable determinants of the company development
3. <i>What event in the past would you call the triumph of our company? Why?</i>	Helps to analyze the factors determining the success of the company in the past
4. <i>What event in the past, would you call the main mistake of our company? Why?</i>	Helps to analyze the factors determining the failures of the company in the past
5. <i>What are the most important decisions to be taken by the company in the near future?</i>	Helps to identify the main opportunities and threats for the development of the company
6. <i>What are your greatest fears about the company's future development?</i>	Direct question. In the framework of preventive management helps to reveal what the respondent is concerned most of all

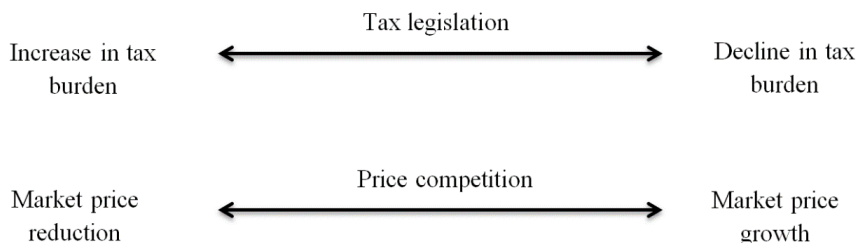
On the basis of the survey results are formed the key issues on which will be focused scenarios of the company further development.

Step 2. Exploration of the driving forces

This step involves identification of the main driving forces in the framework of the key issues determined in the first step. The goal is to select 2–3 of driving forces on the basis of which scenarios will be created.

The driving forces are selected on the basis of the importance of a key issue (often a subjective opinion) and the degree of driving force uncertainty.

The most simple and reliable way to create scenarios is to picture these critical uncertainties on axes that frame the poles of what seems possible in the timeframe you are dealing with. These “axes of uncertainty” represent a continuum of possibilities ranging between two extremes [14]. For example:

**Fig. 3.** Examples of “axes of uncertainty”

Step 3. Scenario matrix

The axes are crossed to create a framework, which can be used to explore four possible scenarios for the future.

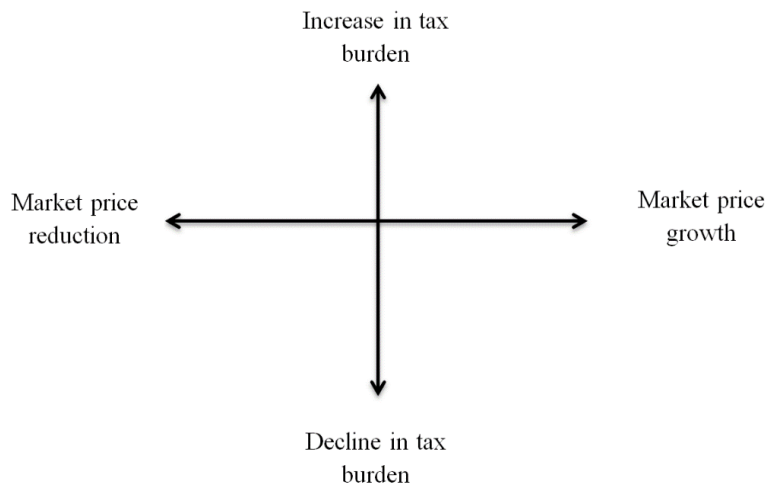


Fig. 4. Example of scenario matrix

Scenarios are not limited by influence of two key factors, they may also include answers to the questions raised at the first step.

Step 4. Scenario writing

Scenarios are a combination of scientific research and the product of the writer's imagination. In any case they should respond to the following questions:

1. How would the driving forces balance affect the company, its employees and suppliers?
2. How would it affect its customers, their customers and future customers in the value chain?
3. How would it affect the company's competitors, their employees and suppliers?

Step 5. Reconciliation of scenario and strategic plan

The reliability of the company's strategic plan is reviewed through the prism of the scenarios. There is a possibility of changes in the strategic plan under the influence of the events referred to in certain scenarios.

In this last phase there are created mechanisms that will help organization track shifts in the environment and adjust its strategy accordingly.

7. Development of preventive measures

Preventive anti-crisis measures are based on the solution of the problems identified during the writing of the further development of enterprise scenarios, and aimed at leveling the consequences of a situation described in realistic-pessimistic scenarios.

First of all it should be found out how deeply the development of the situation described in some scenarios, may influence the company's activity.

Table 4. Impact degree of potential crisis situation

Impact degree	Description
Low	<ul style="list-style-type: none"> – Operating irregularities are minimal – Absence of threat to the prestige of the enterprise – Absence of threat in the sphere of contract execution
Average	<ul style="list-style-type: none"> – The company works with allowable disruptions; objectives that would rise after the disruptions leveling, would be fulfilled in usual regime – There are disruptions in the sphere of contract execution with minimal negative consequences. However worsening of these disruptions is not expected – In certain cases the effect of circumstances extends beyond the organization. However, this effect is not accompanied with it negative consequences
High	<ul style="list-style-type: none"> – Disruptions of the enterprise functioning extend beyond the permissible limits. There is expected reduction in the quality of performance and violation of the terms of its implementation – Objectives that would rise after the disruptions leveling would not already be fulfilled in usual regime. Most likely that there would be the need of additional labor involvement for their achievement – Disruptions in the sphere of contract execution cause negative consequences (penalty clauses) – Negative impact extends beyond the organization and affects its t operating and branch environment
Very high	<ul style="list-style-type: none"> – The organization is not able to complete its current challenges – Contracts breach with severe consequences. There are also possible legislative violations (for example tax legislation) – Devastating consequences for the company's financial state

Depending on the degree of possible negative impact of the situation on the activities of the organization there is selected an appropriate program of actions directed to prevent this situation, or, if it is inevitable, the most effective leveling of its consequences.

There are 3 main methods of interaction with the crisis that can be potentially used in the development of preventive anti-crisis measures:

1. Avoidance of crisis situation that can develop in following ways:
 - Taking actions to eliminate the potential threat.
 - Participation in alternative activities.
 - Elimination of the specific vulnerability of the enterprise.

2. Modification – change of the company so that the probability of a crisis situation and possible damage was in permissible limits.
3. Acceptance – crisis situation fully or partially accepted by the enterprise with all possible consequences.

Conclusion

Preventive crisis management is a holistic management activity. Its main task is timely collection and analysis of information on the indicators that characterize the internal and external environment of the enterprise, that may serve as crisis indicators when modifying.

The constant fluctuation of factors of internal and external environment, the limited reliable information leads the enterprise to the need of continuous monitoring, analysis and forecasting of market functioning prospects and the place of the enterprises in this market. Monitoring, analysis and forecasting are the main tasks of preventive crisis management.

Preventive crisis management involves the development of the program directed at preventing a potential crisis situation in the company or, if it is inevitable, the most effective leveling of its consequences.

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Пrewencyjne zarządzanie kryzysowe przez koncepcję ciągłego zarządzania

Synopsis: Podstawą prewencyjnego zarządzania kryzysowego jest koncepcja ciągłego zarządzania. Składnikami systemu prewencyjnego zarządzania kryzysowego są działania realizowane na etapie sprzed kryzysu. W artykule zaprezentowane takie cele prewencyjnego zarządzania kryzysowego, jak monitoring zewnętrznego i wewnętrznego otoczenia, oceny ryzyka, prognozowanie trwałości przedsiębiorstwa, planowanie scenariuszy rozwoju przedsiębiorstwa i środków prewencyjnych.

Słowa kluczowe: prewencyjne zarządzanie, zarządzanie kryzysowe, czynniki otoczenia.