

## THE RESPONSE TO THE SHOCKS PROVEKED BY EXTERNAL FACTORS

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### ABSTRACT

*In this article, we present a simple model of response to a turbulent manifestation in the environment, which organization of any type should try to implement. First, it was described the types of perturbations that can exist in a dynamic business environment. Also, we propose a model of management response to the disturbing event, depending on the readiness of the organization in dealing with them. In the last part of the article, we propose a simple scheme of resourcing allocation for the response, by using a ranking system of the shocks that are provoked by turbulence of the external factors of the business environment.*

**KEYWORDS:** *turbulence, shocks, management flexibility, external factors*

**JEL CLASSIFICATION:** *L20, L26, M10, M20, O10*

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### 1. INTRODUCTION

The business environment is mostly the analyzed mostly in a constant state, where every factor influences the organization only by providing opportunities or threats. Most commonly used methods use to observe the external environment of the organization is the PEST analysis (Political, Economic, Social and Technological analysis) and its expanded versions (Palmer & Hartley, 2008). While others try to analysis the near external environment (business environment) represented by the market and its players where the organization activates. Porter (2001) has developed one most popular method for analysis this environment, named the Five Forces, which analyses the Industry Rivals, the Bargaining power of Suppliers, Threat of Substitutes, Bargaining power of Suppliers, Threat of New Entrants (Porter, 2008).

When external environment is analyzed in a dynamic way, the main goal is to observe the trajectory of its evolution which commonly known as change. Change is the process by which certain elements (individuals, organizations, factors, phenomena, substances) change their properties. In mathematics, the change is represented by magnitudes, which change values according to the time or the analyzed case, called variables. The opposite of the variable in mathematics is constant, a size that does not change its value. In nature, there are no constants, but only variables that change rarely or very slowly, being insignificant.

Change can be represented as the evolution trend (or vector) of an element from an initial state to a later one. But change can also be represented as a change in the evolution trend of the element.

In order to respond appropriately to the requirements of the environment in which they operate, organizations are continually required to design and implement changes of a certain magnitude.

In management, the turbulence of the environment is the threat and opportunity situation that manifests itself in a defined degree of risk or uncertainty. According to Ansoff & McDonnell (1990) "The turbulence of the organization's environment is constituted by the combination of its changeability and predictability." The changeability is described by two variables: the complexity of the environment and the novelty of the challenges the organization has to meet. Predictability is described by two variables, the rapidity of changes defined as a ratio of the evolution of the

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challenges, the organization's response speed and the visibility of the future, or the predictability of future information available for decision-making.

Based on the turbulence scales developed by Ansoff, Moldoveanu and Dobrin (2012) have developed a new scale that has elements of analysis of the turbulence response efficiency: the type of competence of the management, the sources of information, the management system and the technological structure of management.

**Table 1. Turbulence Scale**

<b>Turbulence</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Competency type</b>	Mastering change	Diagnostics	Optimization	Finding opportunities	Creation
<b>Information source</b>	Previous	Past performance	Extrapolation	Prediction	Weak signals
<b>Management system</b>	Procedures	Financial control	Long-term planning	Strategic planning	Surprise problems
<b>The technological management structure</b>	Hierarchical procedures	Functional diagnostic	Division, optimization, modelling	Matrix, expert models	Adaptive, Artificial Intelligence

*Source:* adapted from Moldoveanu & Dobrin (2007)

The response of organizations to environmental turbulence and the change in external factors is named flexibility. Flexibility is the ability to make environmental turbulence in a relatively short time without changing the organization's strategy. Flexibility can also be represented by successive changes in the organization's activity, depending on the volatility and uncertainty of the environment.

Gerwin (1993) considers that flexibility can be divided into three forms: real flexibility, potential flexibility, flexibility required. Real flexibility is the ability of the company to adapt to the present moment. Potential flexibility is the company's maximum ability to adapt. Flexibility required is the ability to adapt to an unfavorable event. So if the required flexibility is greater than real flexibility, the company will have to mobilize additional capabilities.

## **2. LEVELS OF EXTERNAL FACTORS INFLUENCE**

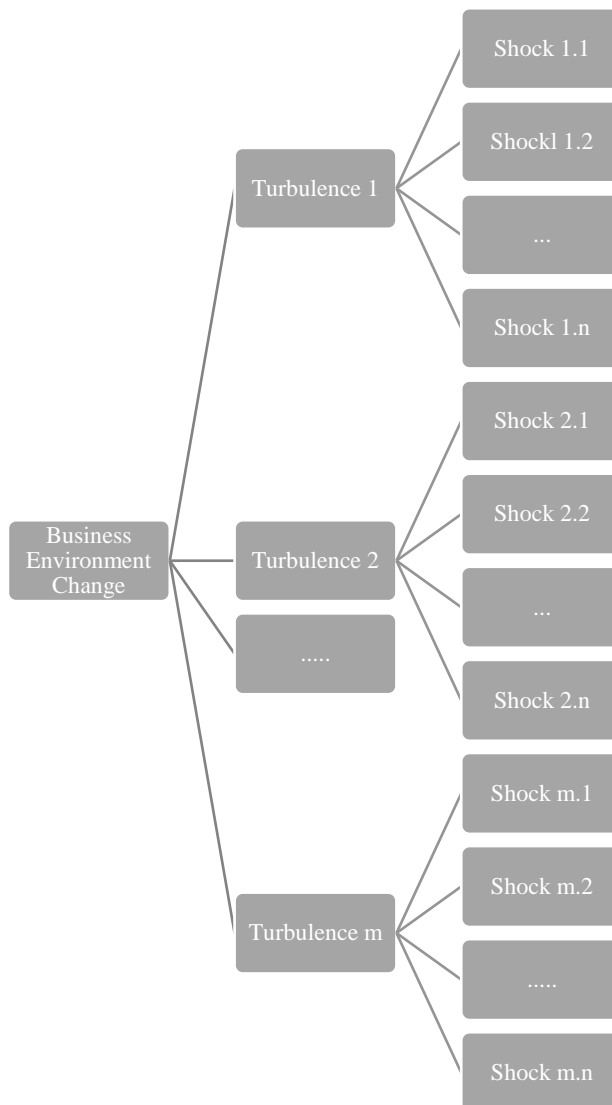
It can be seen that the impact of external factors can be classified according to the intensity, the specificity of the influence and the propagation velocity and the mode of manifestation, in three major levels:

Shock is an unexpected event whereby one or more exogenous factors can manifest in a very short time since triggering, with a strong intensity, but with a short duration of life, leaving short, medium or long lasting effects on organization and also the environment in which it operates. However, a shock cannot significantly alter the characteristics of the triggering factor or of the factors that have been disturbed by it. Shock can be represented as a subdivision of the turbulence state, often triggering it.

Turbulence is an event or phenomenon that can trigger its triggering, but not its mode and period of manifestation, consisting of a set of simultaneous or consecutive shocks of one or more exogenous factors. The turbulence occurs in a short time since triggering, but with a longer duration than the shock, leaving in most cases short, medium or long-lasting effects on the organization and the external environment. Due to the fact that the turbulence can be predicted, the organization can adapt to it in order to avoid or frustrate possible effects posed by threats or opportunities.

Change is a long-term event or phenomenon that can be predicted, with a much more predictable, but not certain manifestation, which can be represented by a series of simultaneous or consecutive turbulences or shocks manifested in one factor or several factors. The change takes place over an

average period of time since triggering, with a long time to manifest itself, leaving major long-term effects on the organization and the environment in which it operates. Due to the fact that change is a major long-term event, the organization's management must implement a change program of the organization to adapt to the effects of change throughout its lifetime.



**Figure 1. Levels of manifestation of the characteristics of an external factor**

*Source: adapted from Trifu (2014, p.208)*

We proposed a management model based on the three main options: resistance to short-term shocks or combating them, flexibility against environmental turbulence and use of change management to cope with major changes in the external environment.

Shock resistance is used when the shock has a very high rate of propagation, and the effects can be borne by the organization, giving management the opportunity to focus on the challenge of the environment of greater complexity such as turbulence or change. However, in the event of shocks that may disrupt or endanger the integrity of the organization, management must take action to avoid, combat or minimize their effects.

### 3. THE RESPONSE A DISTURBING EVENT

An unexpected change of an external factors can have some destructive effect on the organization, if the system of management in not prepared to respond with fast and an adequate response. The change can be triggered by a disturbing event or a series of events that can have modified the landscape of the organization's environment. In the first phase the event will be observed by organization before or after it's triggering. In the figure below, we exemplify the 3 scenarios depending of readiness of the management to respond to the disturbing event.

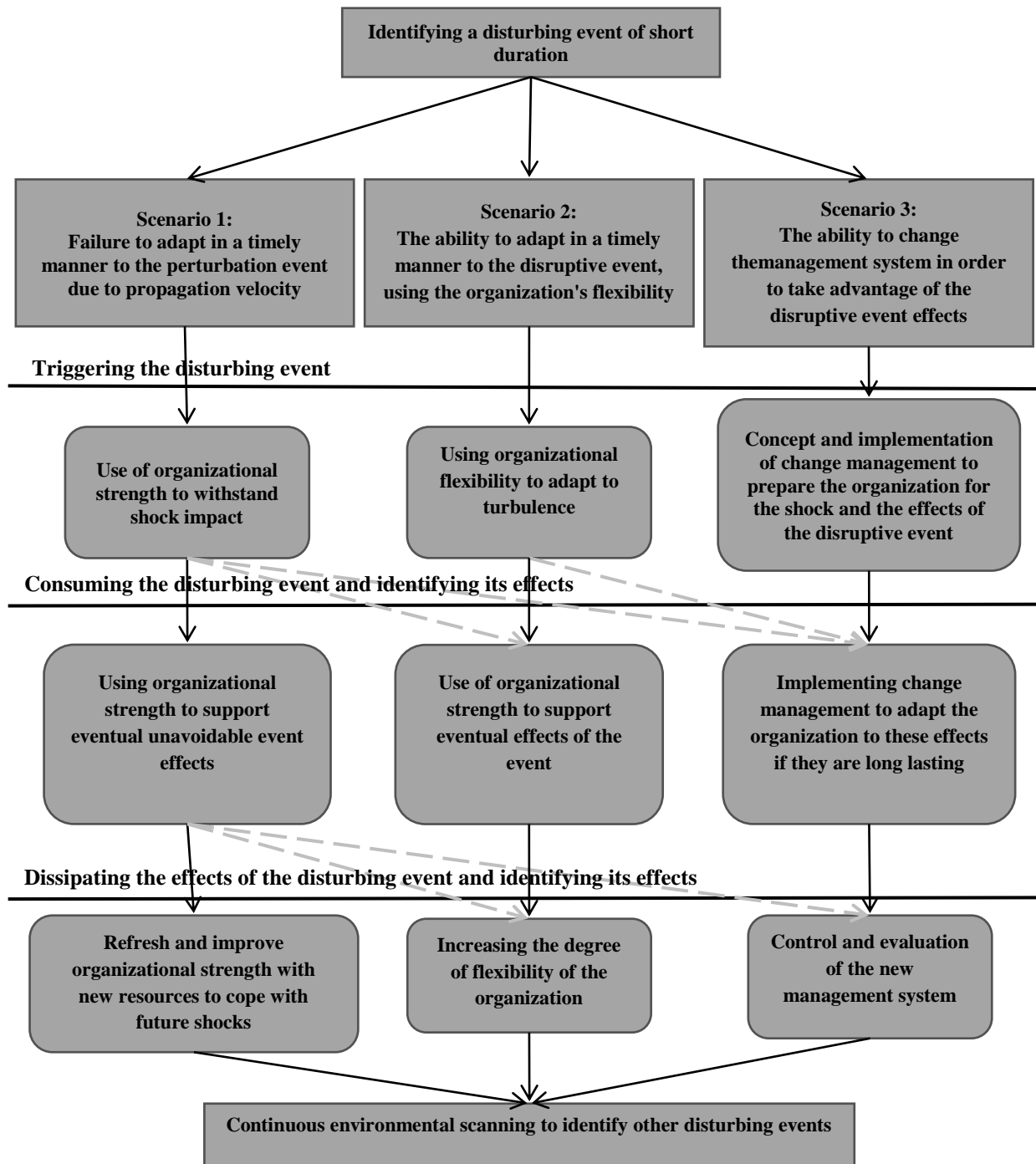


Figure 2. Scenarios on survival to a shock of a disturbing event  
 Source: adapted from Trifu (2015, p.202)

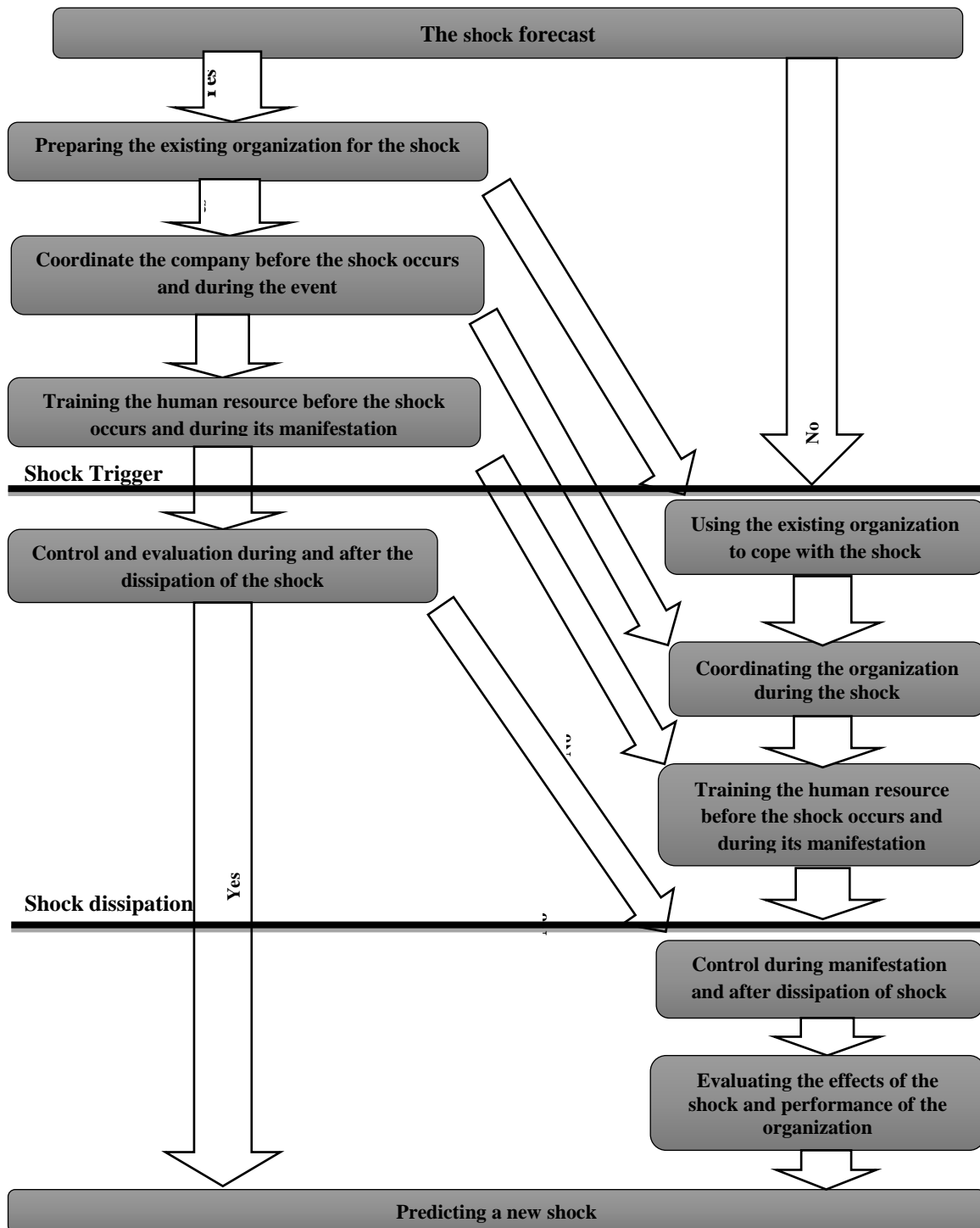
After the organization identifies a disruptive event and, depending on the speed of its propagation in the environment, intensity and expected effects on the organization, management will decide what action to take:

If the event has a very high speed (in some cases instantaneous) propagation, being in most cases a shock (sudden fluctuations in stock, commodity, exchange rates, human / technical accidents in nuclear power plants, stopping the supply of water or electricity, riots, revolutions, natural disasters, etc.), with unpredictable effects, it is recommended that the management decides to resist using the allocated resources for such events. During this time, the organization will analyze how to manifest the shock and possible follow-up in order to conceive and implement the tactics (if the effects will manifest in the short term), the strategies (if the environmental effects will be manifested over a medium or long duration) or operational actions (if the effects of shock have dissipated, and the environment has reached the initial state) required.

If the event has a velocity of propagation, enabling organizations to adapt, being represented mostly by the turbulence of an external factor (increase / decrease demand or supply of products and services upstream and downstream rate developments the interest rate exchange, launch a new product / service to competition or the appearance of a new product / service complementary, changing consumer behavior, implementation of reforms by the political factor in the branch of activity, the imposition of embargoes, the discovery or exhaustion of a deposit, the migration of some species of animals, the change of excise rates, etc.). The organization will need to identify the operational or tactical action to avoid (threaten) or frustrate (event) the effects of the event. After dissipating the event, the organization will need to consider whether its effects have dissipated; if they caused another turbulence or a new shock, in order to make a decision; have changed the characteristics of a factor that will influence the organization on a long-term basis, resulting in the need to conceive and implement an organizational change.

If the event has a reduced propagation rate, but a longer duration of manifestation, being represented in most cases by a change in the characteristics of one or more factors (the implementation of a new national, the change of the demography, the emergence of a replacement technology or new methods of exploitation, the implementation of austerity policies, the effects of climate change, change of the fiscal code). The organization will need to develop new strategies to adapt the organization to change, both throughout the phenomenon (due to the possibility of shocks and turbulence) and to the effects resulting from the cessation of this phenomenon.

In terms of combating shock, using management functions, it can be seen that the predictive function is of crucial importance because it provides the organization with the time to prepare for its impact. A company that did not anticipate the shock will begin to adapt its functions of organization, coordination and training only after the impact has taken place, and in some cases the control and evaluation function can be used at the time of the shock dissipation. However, the best alternative is for any organization to create resistance to the shock impact shock due to the fact that shocks cannot be predicted in the long term. Thus, the organization will need to adopt management actions that can implement preventive measures to combat, mitigate and cover the effects of the shock. For example, in the case of a natural disaster: prevention is represented by long-term investment to improve building resistance, staff training, etc.; the reduction is represented by the preventive measures taken shortly before the shock propagation of the company's activities (flood dams, temporary relocation of assets, evacuation of staff, etc.); covering the effects of shocks is represented by asset value assurance. Thus, unlike the turbulence of the environment, where a company can use its organizational flexibility to design special adaptation tactics or change the environment where the organization can develop its adaptation methods by implementing change management models, in the case of shocks actions must be taken in - a very short or even instantaneous time, like an organizational reflex.



**Figure 3. Manifestation of managerial functions during the shock**  
 Source: adapted from Trifu (2015, p.205)

#### 4. RESOURCE ALLOCATION IN TIME OF TURBULENCE

In terms of turbulence, the company must be flexible enough to be able to avoid major threats and exploit the opportunities that have arisen due to shocks. However, it is highlighted that the organization will not be able to respond to all the threats caused by shocks of turbulence. The result is that the organization will only respond to the shocks that pose a major threat to the survival of the entire organization, followed by the response to the memories of medium gravity. And in the case of

low-impact threats, the response to their effects will only be carried out in the absence of threats of higher priority, and only if the costs of response actions are less than the damage caused.

<b>Types of disturbing factors shocks</b>		
<p><b>High gravity:</b></p> <ul style="list-style-type: none"> <li>-Natural hazards that endanger the company's assets.</li> <li>-Demand reduction for the entire range of products / services.</li> <li>-The strong volatility of the company's stock prices (both through market dynamics and speculative attacks).</li> <li>-Increased demand for raw materials needed</li> <li>-Socio-political instability (riots, revolutions).</li> <li>-Military conflicts.</li> <li>-Prohibition or restriction of the organization's object of work.</li> <li>-The emergence of a revolutionary substitution technology that can be introduced in the short term on the market.</li> </ul>	<p><b>Average gravity:</b></p> <ul style="list-style-type: none"> <li>-Launch of a new product by a leading competitor</li> <li>-Market entry of a new major competitor.</li> <li>-Exit from the market of a significant customer or supplier.</li> <li>-Introducing new legislation on the work of the organization (Labor Legislation, -Consumer Rights, Rules / Regulations, etc.).</li> <li>-Changing tax policy (tax increases, taxes and excise taxes).</li> </ul>	<p><b>Low gravity:</b></p> <ul style="list-style-type: none"> <li>-Events or phenomena with seasonal appearance.</li> <li>-The emergence of small-scale competitors.</li> <li>-Changing the currency rate slightly.</li> <li>-Increase of interest rates on investment credits.</li> <li>-Decrease of interest rates on deposits.</li> <li>-Delay in delivery of raw materials by suppliers.</li> <li>-Delays in payment by borrowers.</li> <li>-Exit of a shareholder in the General Shareholders' Meeting.</li> </ul>

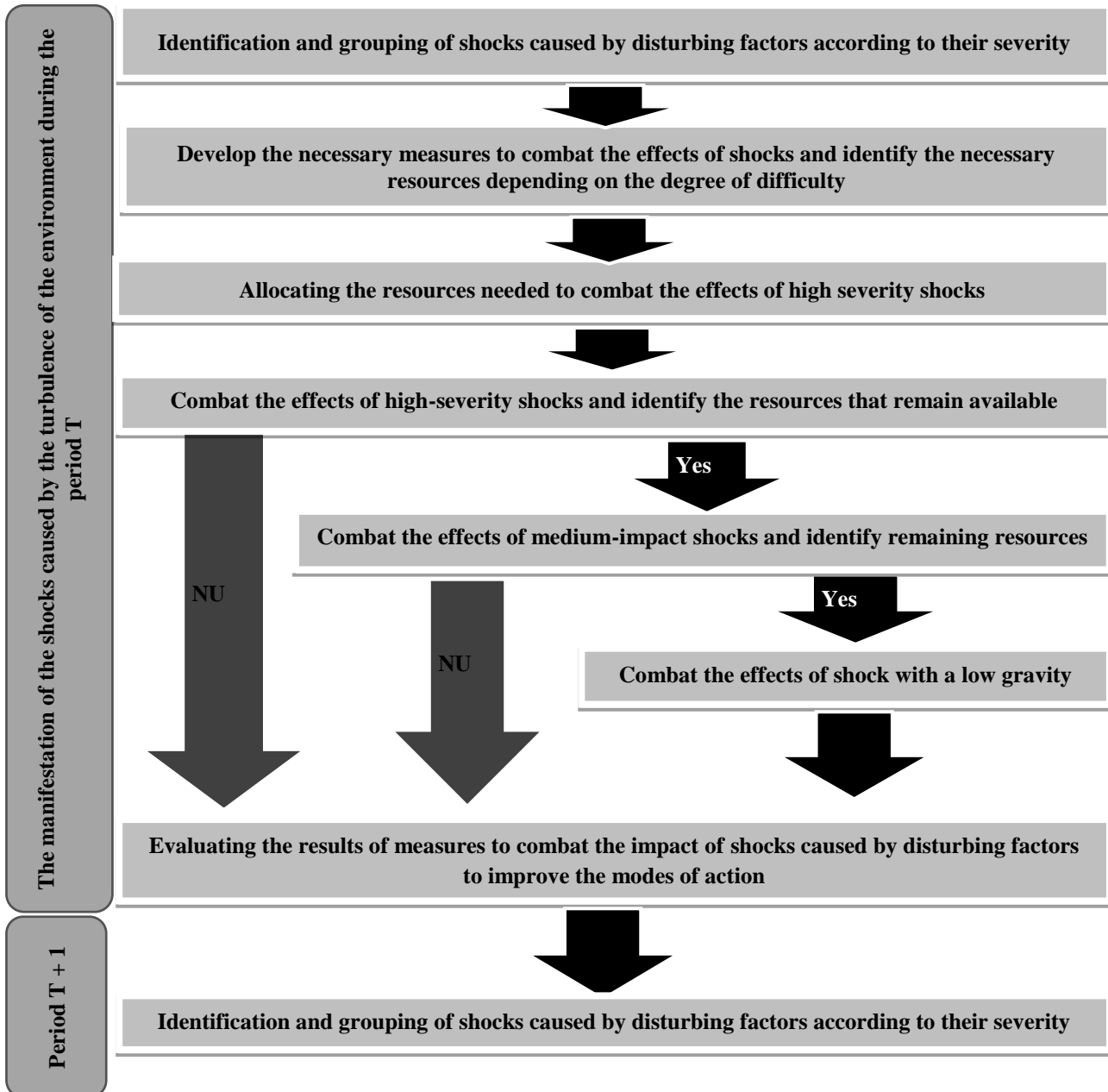
**Figure 4. Categories of disturbing factors depending on the degree of severity**

*Source:* adapted from Trifu (2015, p.206)

In the case of turbulence, all the disruptive factors must be grouped according to the severity of the shocks caused by them. This grouping will be influenced by the effect they will have on the profitability of the organization, the costs needed for the organization to be able to respond to them, the time remaining to influence the organization, and their ability to destabilize other organizational factors, cause a chain reaction. Their classification is as follows:

- High-severity shocks are events that can end the company's business permanently or for a limited time. This type of shock threatens the organizational integrity of the company itself. The management's response to these types of shocks cannot be postponed, and the resources allocated to adapt to their effects or to avoid disturbance will be considerable. Constrain their shocks' effects will fall under the responsibility of top management;
- Average-severity shocks are events that have a limited effect on the organization, focusing in particular on a single organizational function. These can affect the firm's ability to be competitive on the market and may reduce the efficiency of processes, but they cannot put the company into existential danger. Management's response to the effects of these shocks will only be the case if the organization has additional resources (financial, human, informational and time) that can cover and respond to the existing shocks with a high degree of gravity or if there is no such shock. Combating the disruptive effects of these shocks will be the responsibility of department managers after their actions have been accepted by senior management;

- Low-severity shocks are events that may have disruptive effects on the operational or compartment level. However, their magnitude will not affect the company as a whole, with the management response being available only if the necessary resources remain after allocating them for higher severity shocks. There are cases where it is indicated that these shocks should be ignored, if necessary, and greater focus on concentration and resource allocation on higher severity disturbances is given.



**Figure 4. Sharing resources according to the severity of the shocks**

*Source:* adapted from Trifu (2015, p.208)

Based on the above figure, we can see that the most important stage is represented by the identification of shocks by degree of severity, due to the fact that their erroneous identification can have devastating effects by developing ineffective actions to combat a crucial threat or over-financing an action that will combat a shock with minor effects. The next stage is represented by the necessary

measures to combat the effects of the disturbing factors shocks, which will conceive the actions that the company will take, calculate the resource requirements for each shock and select the responsible personnel. At this stage, the necessary resources will be allocated to combat shocks with a high degree of severity, then on the basis of the unused resources the resources for the medium-degree shocks will be delimited and finally the resources for the shocks with a low degree of the remaining resources. It should be pointed out that in case of need for additional resources, for the shocks of high gravity, it will be possible to take the resources from the budgets to combat the less important shocks. If, as a result of the fight against a high priority shock, unused resources remain, they will be relocated to tackle lower priority shocks. In the absence of material, financial, human or informational resources to combat a low-severity shock, it will not be ignored, but continuously monitored to estimate possible damage or if it climbs to a higher degree of gravity to allocate resources if the situation becomes urgent. The last step is the evaluation of measures to combat the impact of shocks caused by disturbing factors, analyzing the effectiveness of the measures, but also the degree of professionalism in their implementation by the management team, the total resources consumed and, last but not least, the damages caused of shock. After this stage, the process is resumed in order to cope with the new environmental challenges.

## 5. CONCLUSIONS

In conclusion, every organization should analyze their business environment and try to prepare for the unforeseen events that can disturb some factors that have a direct or indirect influence on its activities. Resulting that organization and its management should be flexible enough to avoid threats and to use opportunities arisen from triggering of an event. If the event trigger almost instantaneous, the organization should have procedures of management that would help to resist or even survive the first effects of the perturbation. In this article, we present a simple model of response to a turbulent manifestation in the business environment, which organization of any type should try to implement. Also, we highlighted the importance of ranking of shocks of their impact on the company's activities, resulting in a prioritization of resource allocation to upstand the resulted threats or to exploit the new opportunities.

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