ANALYSIS OF AN ENTERPRISE BASED ON A NEW DIAGNOSIS MODEL

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Abstract: *Rapid economic and technological change, environmental problems, pandemics, and energy problems are determining continuous changes in businesses. It is necessary to use diagnostic frameworks to provide clear insights about a company. The use of several diagnostic frameworks substantially helps to get a conclusive picture of the organisation and leads to the point of setting up the necessary changes in the organisation. A brief overview of several organisational models allows us to understand what they contain and how they work. In this paper, we propose an organisational analysis model- a determination model- and exemplify it with a case study. For the analysis of the company that represented the case study, the model introduced in this article is used, as well as a questionnaire whose questions were scored from one to five points by members of the organisation. These questions lead to the scoring of complementarity factors introduced in this article. The comparison of these factors has made possible the analysis of the company. This analysis, as well as the conclusions, has been presented in this article. For higher accuracy of the investigations, the questionnaire was completed twice for the same company, in a period of almost one year, by two different people. The company operates in the field of electricity production.*

Keywords: *organisational diagnosis, organisational diagnosis models, organisational change management tools, determination model, complementarity factors.*

1. INTRODUCTION

To make an organisational diagnosis, it is necessary to use a corporate model as a framework for analysing and evaluating the organisation's functionality and effectiveness. The use of several diagnostic frameworks substantially helps to get a conclusive picture of the organisation and leads to the point of setting up the necessary changes in the organisation [1]. Organisational diagnosis models usually contain several building blocks having relationships established between them. Analysing the relationships between the building blocks will help diagnose an organisation. In some models, the distinction between the elements of the model is made by their positioning (leadership is at the centre of the model in Weisbord [5]) (Fig. 1); in others, by definition (soft/hard – in the case of McKinsey – Fig. 2) [2]. The relationships between the elements are of alignment (Gailbraith-2002) [3], interdependence (Leavitt-1965), connection or congruence like in Nadler Tushman model [4] (Fig. 3) or are not explicit – Weisbord [5, 6].

2. PRESENTATION OF THE PROPOSED MODEL

The model we propose for organisational analysis is based on two premises.
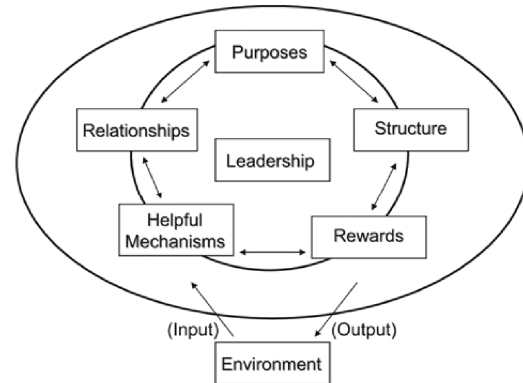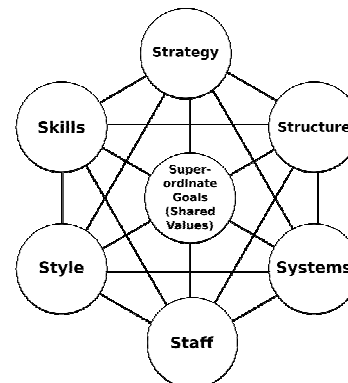
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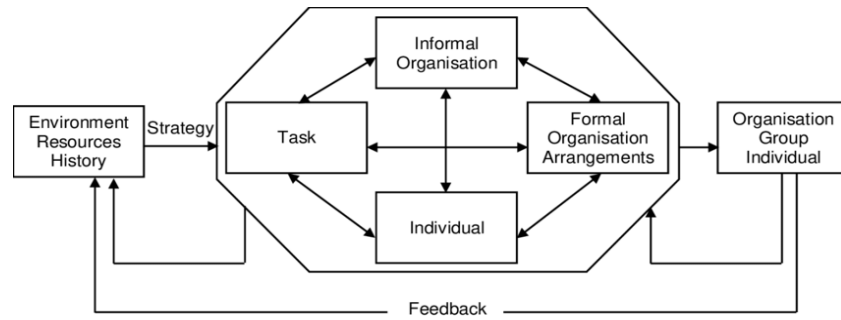E-mail addresses: *vbaicu01@yahoo.com* (A.V. Baicu),

Fig. 1. Six-Box Weisbord model [5].

Fig. 2. Hayes's model [11].

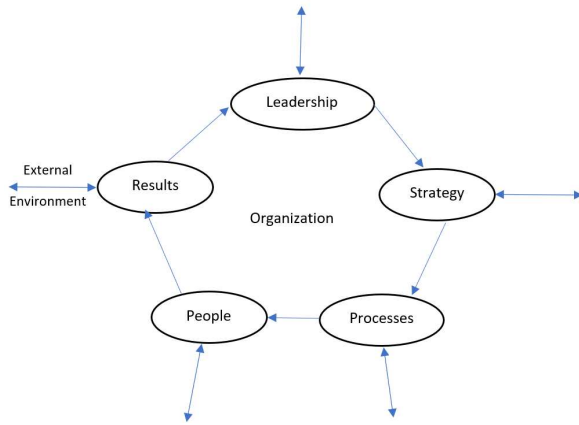**Fig. 3.** Nadler & Tushman's congruence model [4].

Fig. 4. Determination model.

1. The elements of the model (Fig. 4) are in a determining relationship.

More precisely, one element determines the next, each of the elements being both determining and determined. Changing one element leads to changing the one it determines. Identifying an element in disequilibrium enables us to identify all the aspects in disequilibrium that have defined the state of the element under analysis and, at the same time anticipate the possible disequilibria of the characteristics determined by the element in question.

2. Each element's steady state gives the model's steady state.

Each model element is influenced by trends and complementary centripetal and centrifugal forces. Every aspect has several characteristics founded in management textbooks and organisation theory [7, 8, 9].

The equilibrium between these forces at the level of the component elements of the model confers equilibrium within the model. The assessment of the organisation's state results from evaluating the complementary factors of the organisation's characteristics.

The organisation's characteristics (minus the results) have been listed in Table 1. Centrifugal factors were scored for each feature with scores from 1 to 5. The questions leading to the completion of Table 1 are listed in Table 2.

Table 1

Complementary descriptive factors of an organisation

Components of the organisation		Characteristics	*A* – Complementary centripetal factor	*B* – Complementary centrifuge factor
1. LEADERSHIP	**1. Management**		Omnipotent	Symbolic/ Democratic
2. STRUCTURE	**2.1. Structure**	2.1.1 Complexity	Vertical differentiation	Horizontal differentiation
		2.1.2 Formalisation	Strongly contoured	Permanently adaptable
		2.1.3 Centralisation	Concentrated	Dispersed
	2.2. Design		Functional	Divisional
	2.3. Strategy	2.3.1 Corporate	Growth	Innovate
		2.3.2 Competitive	Better	Different
3. PROCESSES	**3.1.Processes**	3.1.1. Changes the processes	Internal	External
		3.1.2 Recruitment	Internal	External
		3.1.3 Learning	Formal	Informal
4. PEOPLE	**4.1. Culture**		As is	wanted
	4.2. Relationships between employees		Formal	Informal
5. RESULTS	**5. Results**		Internal	External

Table 2

Questionnaire questions

1. Management is directly responsible for failure or success.
2. Much of the success or failure is due to external forces that the manager manages.
3. How differentiated is the vertical structure in terms of management layers?
4. The horizontal structure of the company in terms of occupational, administrative and task groups is differentiated.
5. The job descriptions in the company are strict and very well-defined.
6. The positions in the company are flexible and adaptable.
7. Orders come from the centre.
8. Orders come from several handling centres.
9. The structure is functional (divided into functional departments).
10. The structure is divisional.
11. Corporate strategy is growth.
12. The corporate strategy is for renewal.
13. The competitive strategy is to be better
14. The competitive strategy is to be different from other competitors.
15. Internal changes take place (staff, equipment, implementations)
16. External changes occur (field of activity changes, technology is replaced, other customers).
17. Recruitment is aimed primarily at those within the organisation.
18. Recruitment mainly targets those outside the company.
19. Training is formal (written materials are used,

20. Training is informal (one-to-one courses, direct interaction at work)
21. We rely on the people of the organisation to get results.
22. The proposed results lead members of the organisation to perform.
23. Relations between members of the organisation are formal.
24. Relations between members of the organisation are informal.
25. The company's results are appreciated internally.
26. The company's results are externally appreciated.

Below is a case study of an electricity generating company.

3. CASE STUDY. APPLICATION OF THE MODEL

The study was completed in November 2021. The questionnaire was completed in August 2020 and September 2021 with the help of an advisor and deputy director. The company is state-owned, with over 1700 employees. Techno-economic parameters were not analysed, as these can be found in other analyses commonly used by other studies. The research was based on the questionnaire completed below – Tables 3 and 4 – and some additional public descriptive information that can be found online.

Table 3

Questionnaire completed for ELCEN SA, August 2020

Components of the organisation		Characteristics	A – Complementary centripetal factor	B – Complementary centrifugal factor	A − B
1. LEADERSHIP	**1. Management**		Omnipotent	Symbolic/ Democratic	
			5	3	**2**
2. STRUCTURE	**2.1. Structure**	2.1.1 Complexity	Vertical differentiation	Horizontal differentiation	
			4	2	**2**
		2.1.2 Formalisation	Strongly contoured	Permanently adaptable	
			2	2	**1**
		2.1.3 Centralisation	Concentrated	Dispersed	
			5	3	**2**
	2.2.Design		Functional	Divisional	
			5	4	**1**
	2.3.Strategy	2.3.1 Corporate	Growing	Renewal	
			1	1	**0**
		2.3.2 Competitive	Better	Different	
			4	4	**0**
3. PROCESSES	**3.1.Processes**	3.1.1. Changes the processes	Internal	External	
			4	4	**0**
		3.1.2 Recruitment	Internal	External	
			5	1	**4**
		3.1.3 Learning	Formal	Informal	
			1	5	**-4**
4. PEOPLE	**4.1. Culture**		Existent	Wanted	
			2	2	**0**
	4.2. Relationships between employees		Formal	Informal	
			4	4	**0**
5. RESULTS	**5. Results**		Internal	External	
			3	3	**0**

Total **A**	Total **B**	Total **A-B**
45	**37**	**8**

Questionnaire completed for ELCEN SA, September 2021

Components of the organisation		Characteristics	A – Complementary centripetal factor	B – complementary centrifuge factor	A − B
1. LEADERSHIP	**1. Management**		Omnipotent	Symbolic/ Democratic	
			2	2	**0**
2. STRUCTURE	**2.1. Structure**	2.1.1 Complexity	Vertical differentiation	Horizontal differentiation	
			3	4	**-1**
		2.1.2 Formalisation	Strongly contoured	Permanently adaptable	
			4	2	**2**
		2.1.3 Centralisation	Concentrated	Dispersed	
			5	4	**1**
	2.2.Design		Functional	Divisional	
			4	3	**1**
	2.3.Strategy	2.3.1 Corporate	Growing	Renewal	
			3	3	**0**
		2.3.2 Competitive	Better	Different	
			3	1	**2**
3. PROCESSES	**3.1.Processes**	3.1.1. Changes the processes	Internal	External	
			2	2	**0**
		3.1.2 Recruitment	Internal	External	
			5	1	**4**
		3.1.3 Learning	Formal	Informal	
			1	5	**-4**
4. PEOPLE	**4.1. Culture**		Existent	Wanted	
			2	1	**1**
	4.2. Relationships between employees		Formal	Informal	
			4	1	**3**
5. RESULTS	**5. Results**		Internal	External	
			3	3	**0**
			Total **A**	Total **B**	Total **A −B**
			41	**32**	**9**

3.1. Company analysis based on the tool

The sum of centripetal complementarity factors is more significant than the one of centrifugal factors. This indicates a high degree of rigidity in the organisation, which is explainable for a state-owned energy company that needs many well-defined procedures and hierarchical structures. In the following lines, we will identify the elements with significant differences between factors, looking for solutions to make the organisation more flexible.

The most significant differences in scores between factors are observed in the recruitment and learning processes (4 points). Two ideas emerge:

1. The influx of experience from outside the organisation is low.

2. The learning process within the organisation is predominantly informal.

Company employees are rotated or promoted within the company, with little hiring from outside. The organisational culture will tend to be more people-based than results-based, which can lead to stagnation, lacking a real driving force for change. Managing change under these conditions will be very difficult, and there is a risk that the way of working will not be adapted to the surrounding realities.

There is no effective process of continuous training and learning for employees. The average age in the

company is relatively high. In the next decade, the vast majority of employees will leave the company to retire. Since the learning is more informal, there is an increased risk of losing a lot of the experience gained, leading to poor results in the future.

Identifying the most significant differences between the complementarity factors characterising the human resource, we can say that the most unbalanced element of the organisation is the human resource. Using the determinants model, we can see that processes are the determinant element for human resources, more precisely, the recruitment process. Human resource is the determinant element for results. We can anticipate that the results will soon be unsatisfactory and may, in the longer term, have the effect of changing leadership.

All these conclusions determine us to propose some remedial solutions.

3.2. Proposed solutions

It is recommended to give middle management more responsibility to lead and supervise departments and more detailed duties at the individual level to prevent too much rigidity in the organisation's structure.

At the same time, it is recommended that the leadership process is "democratised" by involving more managers from levels 2-3 of the organisation.

It is recommended to find an efficient communication solution between the members of the organisation with the possibility to store valuable information and solutions resulting from the communications.

A solution to decrease rigidity is engaging in joint projects with other companies either by creating virtual enterprises or by jointly accessing European funds.

The restructuring of the organisation requires financial resources, which may need to identify new profit areas or expand existing ones.

A necessary measure is to increase the complexity of the horizontal structure by better compartmentalisation and more precise separation of the tasks to be carried out. It is essential to establish a way to supervise all activities efficiently - the use of Gant charts might be a solution.

Lower-level managers need to be more involved in the decision-making process. For this, they need to be prepared through appropriate training that includes change management elements. A strong and effective HR department is required to support the above implementations.

There is a need for an R&D department that should be up to date with what is happening internationally, and that can propose what the subjects for technical training should be in the next period. Collaboration with persons or entities from the university environment could be a solution.

Digitisation is a factor that can make a decisive contribution to business processes and results. It can significantly contribute to retaining knowledge and experience within the organisation. It can produce a more accessible transition from one generation to another one. At the same time, the HR department needs to implement a clear and well-structured succession policy for company leadership.

R&D and IT need to work together to find the best digitisation solutions for the company, as they have an essential role to play. They must select, propose and implement the solution.

To avoid bad results, it is recommended to have a detailed analysis of risks and risk factors by a risk manager.

3.3. Comments on the case study

Although the two tables were completed at a significant time difference (almost one year) by different people, one can notice that the difference between the complementary factors resulting from each table is practically the same (8 points respectively, 9 points). In the time interval between the two questionnaires, no significant changes were made in the organisation. The difference between the sums of the resulting factors is relatively substantial. This leads us to consider that the organisation needs rebalancing.

There are some differences in the evaluation between the two questionnaires. The significant differences relate to assessing the relationships between employees and the leadership style. The assessment of the company's advisor may be more subjective, as his seniority in the organisation is less than one year, as opposed to the deputy director, whose seniority in the company is much longer. At the same time, because of the deputy CEO's position in the organisation, his relations with subordinates may be more formal, and he may then generalise more.

Despite these differences of opinion, common characteristics can create a relevant image of the company.

The analysis made after the first questionnaire was considered relevant by the top management and discussed in one of the company's meetings. Unfortunately, as observed after the second questionnaire, no significant changes were made, and after a while, the special administrator of the company and the deputy director were changed.

4. CONCLUSIONS

Using the analysis tool proposed above, a company diagnosis can be realised based on two premises: the determinants in an organisation and the balance between the complementarity factors. Although the tool is new, the results are encouraging, and the feedback received from the beneficiary is good. The results of this analysis were discussed in a group meeting within the company.

It was demonstrated that the analysis tool used and the scheme showing the determination model can offer an out-of-the-box description/ image of any company, even in industry 4.0 [10]. At the same time, based on the analysis, solutions can be identified to increase the organisation's efficiency.

In the way the instrument is structured at this moment, it is not meant to realise a very detailed analysis; however, the tool determines the imbalances in the organisation and can predict what will happen in the future.

Implementation of a high degree of digitisation (PLM, ERP, Digital Twin) will lead to structural changes in companies, so part of the strategies, processes as well as part of operational management will be taken over by

intelligent machines capable of learning and improving production and maintenance. However, exploratory innovation, adaptation and continuous innovation will remain the task of members of the organisation. The responsibility remains, however, with the general manager to create a framework for innovation and change. All the management, together with the HR department, is responsible for successfully implementing the strategic decisions made by top management. The diagnostic tool described in this paper can be of real help for strategic decisions with an impact on long-term company performance.

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