

Competitiveness Enhancement in A National Medical Institute

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***Abstract:** The interest of the specialized literature for the competitiveness of the organization has derived, on the one hand, from the studies on countries and regions competitiveness and, on the other hand, from the concern of both managers and researchers about identifying effective ways of meeting customers needs and of dominating competitors. Basically, the competitive advantage could aim at either reaching a low cost of products or services or differentiating them in one or several ways against the competitor products. The competitiveness of an organization derives from the price / performance attributes of the existing products. An organization attains sustainable competitiveness if they succeed creating and maintaining several core competencies that would generate effects through replication and innovation. This approach may be adopted and applied as a specific definition of healthcare organizations competitiveness, as practice shows us that core competences become the fundamentals of the strategy and even competitive advantages and sources of key success factors. This paper aims at reviewing a healthcare unit having a single specialty providing high-performance and very high difficulty medical services. The original idea was to obtain a competitive advantage by introducing an entirely new, innovative treatment method to the clinic, which is also complementary to the medical services traditionally offered.*

Keywords: Competitiveness, competitive advantage, endovascular treatment, resources

Introduction

The Organization for Economic Cooperation and Development (OECD) defines competitiveness as “the capacity of competing organizations, branches, regions, and states of sustainably ensuring a high yield from the use of production factors, as well as a high income resulting from the efficient use of the labour force”.^{1,2} While competitiveness at national level is most often seen as a means used to improve public services for enhancing quality of life based on a rational use of the country’s resources, competitiveness at organization level focuses on the capacity of companies of understanding the competition environment and of adjusting to the market needs.

As a matter of fact, Michael Porter shows that productivity is an essential factor in determining long-term quality of life, as this is the basis of the national income, while national competitiveness is expressed by national productivity³ (Porter, 2008). This approach could bring in the idea that countries enter competition to ensure a quality of life as good as possible for their citizens, while naturally searching for increasingly high productivity. In today's age of Globalization, the performance of a state is increasingly linked to the contribution companies bring to the national budget. Krugman considers that, in fact, “companies rather than states are the ones competing against each other”⁴ (Krugman, 1994). His reasoning is related to the competitiveness outcome: if a non-competitive company cannot pay their employees, suppliers also become bankrupt; not the same applies for a state. Therefore, public policies become extremely important in shaping the companies’ competitiveness drivers by means of competition policy, tax system, subsidy award, etc. On the

¹Vasile Vese, Adrian L. Ivan, “Istoria integrării europene”, Ed. Presa Universitară Clujeană, 2001

²www.oecd.org OECD Economic Surveys: Ireland 2013

³Porter, M. E. “On Competition. Updated and Expanded”, Ed. Boston: Harvard Business School Publishing, Boston, 2008

⁴Krugman, Paul R & Venables, Anthony J. "Globalization and the Inequality of Nations," The Quarterly Journal of Economics, MIT Press, vol. 110(4), pages 857-80, November, 1995

same page, we can also consider the opinion of the Competitiveness Advisory Group⁵ (a group of 13 experts appointed by the European Commission in 1995 whose purpose is to study the European Union competitiveness) according to which the competitiveness concept involves productivity, efficiency, and profitability and it's a means of achieving social wellbeing without increasing inflation. Michael Porter³ provides a clear delimitation: productivity is mainly the prerogative of national competitiveness, while efficiency, profitability, and achievement of market targets are related *par excellence* to the companies competitiveness⁶ (Snowdon, Stonehouse, 2006).

The current competition context shows a clear distinction between static and dynamic competitiveness. Static, conventional competitiveness focuses on competition by price, as companies rely on the low cost of the labour force and of the resources, which enables them to maintain good competitiveness by keeping or reducing production costs⁷ (Berinde, 2006). Dynamic competitiveness is associated with the fluctuating nature of the competition environment that not only focuses on the relationship between costs and prices, but also on the capacity of companies to think strategically, to learn, to rapidly adapt to the market conditions, and to innovate. Considering this, competitiveness is defined as the capacity of companies to permanently upgrade their technological facilities in order to manufacture competitive products (Berinde, 2006). Considering the economic reality in most fields, we are entitled to state the dynamic competitiveness approach is much more appropriate nowadays. An organization attains sustainable competitiveness if they succeed creating and maintaining several core competencies that would generate effects through replication and innovation. The factors that could contribute to the correct identification of dynamic competitiveness of an organization include: the leadership, the competences, and the resources of the organization, the strategic options and actions of the organizations and of their competitors, the current competitiveness level, the opportunities, and the threats within the competition environment⁸ (Radu-Gherase, 2009).

The success of the organization mostly depends of the competitive advantages of the organization in relation to their competitors. The need of permanently assessing the competitive position of the company is essential for two reasons: (a) to assess their own capacity of entering and staying on the market (b) to achieve competitive positioning against their competitors, thus achieving competitive advantage.

Peter Drucker⁹ has identified eight performance areas with a determinant role for the long-term success of an organization: positioning on the market, innovation, productivity, physical and financial resources, return, managers performance, employees performance and attitude, public responsibility. The achievement and/or maintenance of competitive advantages are considered core priorities for the management of the company. All managers should ask themselves questions regarding the advantages that have enabled their success previously, the advantages currently supporting their business in order to determine the competitive advantages that will ensure their further success.

According to Porter et al.¹⁰, the competitive advantage of a company basically relies on ensuring a low cost of a product or service whose features differentiate it from similar products supplied by the other competitors. Innovation is the main source for effectively achieving competitive advantage. Schumpeter¹¹ defines innovation as one of the following:

- the emergence of a new product
- the emergence of a new market;
- the introduction of a new manufacturing method;
- the procurement of a new supply source
- the generation of a new form of organization of the specific industry.

The competitive advantage could essentially focus on the following two aspects:

- A. the cost advantage is to achieve production costs below those of competitors by exploiting economies of scale, gaining experience or any other source of unit cost reduction, maintaining a certain parity or proximity in terms of quality. If cost reduction has a negative impact on quality, this competitive advantage becomes both inoperative and harmful. If buyers don't notice a big difference between the quality of the competitor products and the company's products, the company's profit will exceed the average because:
 - low costs will enable the company to apply prices equivalent to those on the market;

⁵Competitiveness Advisory Group (UE). Enhancing European Competitiveness. First report to the President of the Commission, the prime Ministers, and Heads of States, June 1995

⁶Stonehouse G, Snowdon B. Competitive Advantage Revisited: Michael Porter on Strategy and Competitiveness. Journal of Management Inquiry 2007 16: 25. DOI: 10.1177/105649260730633

⁷Berinde M. "Concurență și competitivitate", curs destinat masteranzilor de la anul II, Facultatea de Științe Economice, Oradea, 2006

⁸Radu-Gherase C. "The Influence of Leadership on Organization's Level of Competitiveness. Review of International Comparative Management", Faculty of Management, Academy of Economic Studies, Bucharest, Romania, vol. 10(5), pages 959-967, December, 2009

⁹Drucker P. The practice of management. Ed. Harper Business, Boston, 2006

¹⁰Porter ME., Teisberg E.O. "Redefining Health Care: Creating Value-Based Competition on Results", Boston: Harvard Business School Press, 2006

¹¹Schumpeter, J.A. Business cycles: a theoretical, historical, and statistical analysis of the capitalist process. Mansfield Centre, Connecticut: Martino Pub. ISBN 9781578985562., (2006) [1939]

- the price reduction the company will agree upon will remain lower than the cost reduction.

The main factors contributing to cost reduction are:

- a) economies of scale in various basic activities;
 - b) the degree of use of production capacities;
 - c) the degree of integration whose impact on the cost level varies depending on the industry;
 - d) the “experience” and knowledge transfer effects that organization had been able to benefit from in each activity;
 - e) low production costs due to a more stringent control of the resources used in the production processes;
 - f) privileged access to certain resources at very good prices
 - g) relationships with institutional partners (government, trade unions, public power, etc.) that are not accessible to all other competitors. Privileged contacts with certain institutions could enable important savings: financial exemptions, the absence of social conflicts, good prices, etc.
- B. differentiation generates an above the average rentability of competitors if it enables the company to achieve a bonus in relation to the market price. The organization aiming at differentiating should have to carefully select the product attributes they wish to upgrade in order to pass the “originality test”. Additional profit will only be obtained if differentiation does not involve an increase of the manufacturing costs that exceeds the potential price increase.

Nowadays, the reviews on the competitive advantage are less dogmatic, as the idea that this results from a multitude of factors (without emphasizing the special importance of one or another) is accepted. M. Porter³ has suggested the “value chain” model that has already been adopted by many specialists, despite a few disadvantages it shows.

The value chain consists of breaking the activity of the companies into strategically relevant activities for the purpose of understanding the behavior of costs and of identifying the potential differentiation sources. It consists of two categories of activities:

- primary activities, i.e. the ones directly related to the manufacture of the product / service and its selling, including the post-sale services;
- support activities that ensure material, technological, and work force entries necessary to perform primary activities.

The two major opportunities to win the competitive battle are: cost strategies and differentiation strategies. Technical progress and, in particular, technology have a determining role in developing and implementing both types of strategy.

Technical progress and cost-based advantage

As already known, obtaining a cost advantage involves obtaining products at a lower cost than competition, which either allows for price reductions or increases the profit margin.

The influence of technical progress is seen as a bidirectional influence:

1. **The positive influence in terms of cost reduction** - manifests itself through the effect of experience, which is based on several factors that can be grouped into 3 categories:

- factors of the learning effect;
- factors of the scale effect and tracking;
- innovative factors.

2. **Negative influence in the sense of diminishing the experience effect** is found when technical progress involves the assimilation of new products, which in practice involve the restart of the experience effect from a higher level, even a previous level. Also, the assimilation of new technologies also entails an increase in fixed costs and, based on this, an increase in future costs if an increase in production is not achieved under efficiency conditions.

The possibility of increasing competitiveness within a National Medical Institute (INNBNV) whose main activity is specialized healthcare in the field of neurology, neurosurgery and neurovascular emergencies, developed within an integrated program with higher medical education and high-level scientific research, by setting up a department of endovascular interventions, is further analyzed. The goal is to treat, as a matter of urgency, all patients with a pathology whose impact on the population is very high in terms of mortality and morbidity. Studies conducted in European countries that already have neurovascular emergency diagnosis and treatment units show that the economic loss caused by severe debilitation or death resulting from these neurovascular emergency cases not treated in a timely manner amounts to hundreds of thousands euros^{12,13}.

¹²Dan Molyneux AJ, Kerr RS, Yu LM, Clarke M, Sneade M, Yarnold JA, Sandercock P. International Subarachnoid Aneurysm Trial (ISAT) Collaborative Group. International subarachnoid aneurysm trial (ISAT) of neurosurgical clipping versus endovascular coiling in

The social and economic impact of neurological up to the most severe disabilities affecting an active population is very high. The establishment of an emergency service that can also provide quick endovascular treatment in addition to microsurgical treatment aims at significantly reducing major neurological sequelae. In terms of the analysis of the Institute performance indicators, this was carried according to the data provided by the medical statistics service of the institute.

Indicators of human resources management

Table 1 - Indicators of human resources management

Indicators of human resources management	%
The proportion of doctors of the total personnel employed by the hospital	12.21
The proportion of medical personnel of the total personnel employed by the hospital	85.64
The proportion of higher education medical personnel of the total medical personnel	16.16

Economic and financial indicators

Table 2 - Economic and financial indicators

Economic and financial indicators	Value
Budget execution	100.47%
Percent of own income of the total income	92.66%
Percent of personnel-related expenses of the total hospital expenses	39.70%
Percent of medicinal products-related expenses of the total hospital expenses	14.41%
Percent of capital expenses of the total hospital expenses	6.30%

Table 3 - Structure of expenses per type of services

Structure of expenses per type of medical services	%
Ongoing hospitalization services	87.48%
National healthcare programs	0.00%
Applied research	0.00%

Based on the review of the **strengths** (clinical base, well-trained medical personnel, hospital circuit appropriately equipped with information systems, relatively good material endowment, relatively good accommodation conditions) and **weaknesses** (high consumption of resources, relatively high maintenance costs, insufficient and inadequate personnel structure; lack of donations and sponsorships, lack of health and research programs, lack of a radiology interventional department) as well as **opportunities** (the possibility of attracting additional funds through research and national programs, the possibility of concluding contracts with the private healthcare funds; the diversification of the medical services offer the patient would benefit from) and **threats** (legislative amendments that require the restructuring of the departments or the reduction of the number of beds inconsistent with the pathology and the specifics of the activity, the lack of adequate funding from the Health Insurance House; legislative limitation of salary incentives; the reduction of the selection and recruitment base of medical personnel), the critical problems within the institute were identified:

- the lack of healthcare programs and research activity, although research is the priority goal of a national institute;
- inappropriate personnel structure: the shortage of qualified secondary and higher education personnel caused by restrictions of employment and the migration of nurses to the EU countries;

2143 patients with ruptured intracranial aneurysms: a randomized comparison of effects on survival, dependency, seizures, rebleeding, subgroups, and aneurysm occlusion. Lancet, 2005 Sep. 3-9, 366: 809-817aila L, Stefanescu F. Anevrismele cerebrale. Ed. Academiei Romane. Bucuresti, 2007

¹³Wermer MJ, van der Schaaf, Algra R, Rinkel GJ. Risk of rupture of unruptured aneurysms in relation to patient and aneurysm characteristics: an updated meta-analysis. Stroke 2007, apr., 38(4), 1404-1410

- increased financial risk determined by the procedure of concluding contracts by hospitals, based on an estimate of the number of hospitalized cases and of the average rates per case;
- the random increase in the number of patients being discharged without knowing the incremental cost;
- the absence of a Department of endovascular interventions.

As regards the SWOT analysis of the project, the internal environment factors, the external environment factors as well as the threats to the project for the development of an intervention department within the above-mentioned institute have been analyzed.

Overall, the internal environment has more strengths than weaknesses. This is due to the fact that the unit is recognized throughout the country for the outstanding results obtained in the microsurgical treatment of cerebral aneurysms. This provides a very rich and varied case database that can be treated by endovascular treatment with very good results.

The external environment comprises many more variables, both as opportunities and as threats. This causes most threats, and these are more difficult to control and anticipate because they are external. These are usually related to the economic environment, mentalities, and unfortunately, even to the political environment in our country.

The external factors that positively impact the project are:

1. The evolution of the healthcare system in the EU countries, and not only the ones in the developed West European countries, but also the neighboring countries have such emergency units for neurovascular pathology. For example, Hungary has two such units (Budapest and Szeged) with outstanding results.
2. The medical technology permanently and spectacularly progressing. While new developments in microsurgical treatment do not occur so quickly, materials used in endovascular treatment are developing much quicker.
3. The adjustment of services to the population requirements. Patients are increasingly informed, as mass media and the internet are now available to anyone. Everyone wants to benefit from the most modern techniques, within the shortest time, and as minimally invasive as possible.
4. Many Romanian patients with a very good financial status go the other European Union countries for treatment. Some of these patients pay the treatment themselves, others use the forms of the National Health Insurance House that reimburses the cost of the treatment, justifying that the specific therapeutic intervention cannot be performed in our country. It is easy to understand that the NHIH would prefer to reimburse the costs of these medical interventions carried in Romania, where prices are lower and thus, they would be interested in investing in the establishment of these neurovascular emergency care units.
5. Mass media support that usually promote the establishment of units aligned to the European standards and which are expected to provide positive outcome.
6. Access to European funding has become increasingly easy from a technological point of view; a consistent, well-documented, with predictable and well-grounded results would have high chances of receiving financial support from European funds.

However, there are several external factors that negatively impact the project:

1. The lack of financial resources - the main obstacle in starting any healthcare project. 2. The National Health Insurance House does not reimburse endovascular interventional procedures for the treatment of cerebral aneurysms. This hinders the quick implementation of this procedure within the neurovascular emergency unit. The only money provided by the system for this specialty are obtained through a national program run by the Ministry of Health.

3. Reluctance to new things in the current healthcare system. There is an inertia in the implementation and application of new structures, even if they have been existing for a long time within the healthcare system of civilized countries. The implementation of healthcare policies on an long- and medium-term is difficult.

Key factors that could impact project execution

DECISION MAKERS	INTERESTS	IMPACT ON THE PROJECT	POWER (1-5)
1. The Ministry of Public Health	<ul style="list-style-type: none"> ❖ achieving the result ❖ the control of funds and activities ❖ avoiding responsibility in the event of a failure or even negative feedback 	<p style="text-align: center;">+</p> <p style="text-align: center;">-</p> <p style="text-align: center;">-</p> <p style="text-align: center;">+</p>	5

	❖ obtaining political or electoral support		
2. The National Health Insurance House	❖ decreasing the hospitalization time and the related costs ❖ solving cases that would require the same treatment in another country with much higher costs ❖ co-financing the funds paid by the MPH (Ministry of Public Health)	+ + -	4
3. The local authorities (the city hall)	❖ improvement of public image ❖ winning electoral support	+ +	3
4. The hospital	❖ improvement of treatment quality, resulting in a lower mortality and morbidity index ❖ cost reduction ❖ improvement of MCI (mixed complexity index for the treated case) ❖ improving the prestige of the institution by creating a high-performance unit	+ + +	2
5. The Ministry of Labour	❖ decreasing the number of persons with severe disabilities (grade I), thus reducing the costs of their premium ❖ reducing temporary work incapacity	+ +	2
6. Healthcare materials and medicinal products companies	❖ increasing the sales and profit ❖ image leverage	+ +	2
7. The Association of Romanian patients	❖ high-performance treatment, i.e. improvement of the quality of life and the patients satisfaction ❖ saving money necessary for healthcare materials that is now supplied by the MPH	+ +	2
8. Non-governmental organizations	❖ reducing the number of disabled people within the population	+	1

The department to be created has well-established organizational strategies regarding the healthcare services provided and the personnel-related aspects, and these must be entirely complied with.

Organizational and behavioral strategies, skills and competences of employees

1. Innovation - overspecialization and expertise acquired in similar services abroad
2. Quality - ongoing training of medical staff
 - thoroughness and dedication for the work carried
 - teamwork
 - communication skills
3. Decrease of hospitalization time
 - emergency treatment
 - high qualification of the personnel
 - teamwork
4. Cost reduction
 - avoiding wastage
 - multiple qualification
 - strictness and thoroughness
5. Personnel training
 - mastering the use of information technology
 - foreign language proficiency

Stakeholders involved in the operation of this unit have been identified, their interests and power regarding the application of such a project are established in order to draw up a strategy where these factors can be stimulated.

Stakeholders analysis

Internal stakeholders

1. Doctors - high interest, low power
2. Healthcare personnel - decreased interest, decreased power
3. Auxiliary and maintenance personnel - decreased interest, decreased power
4. Hospital managers - increased interest, increased power
5. Heads of departments - increased interest, low power
6. The Ministry of Health

External stakeholders

1. Patients - high interest, decreased power
2. The neurology society – decreased interest, low power
3. Companies supplying medical equipment and healthcare materials - high interest, low power
4. The society of neurosurgery and neuroradiology - high interest, low power
5. Press and mass media - low interest, high power
6. MPH, NHIH, local authorities - low interest, high power

After identifying the stakeholders involved in the project and the potential reluctance reasons of each of them, a settlement plan can be developed for conflicts that can arise due to changes, new situations, fatigue, unpredicted expenses, etc. Stakeholders are, on the one hand, part of the hospital staff and, on the other hand, the governmental institutions managing the activity and that can assign important financing sources.

STAKEHOLDER	REASON OF CHALLENGING	PLAN FOR CONFLICT SETTLEMENT
Doctors	Intrapersonal – high amount of work, stress Interpersonal and intra-group – treatment failure in emergency cases Inter-group – the introduction of a new therapy concept (endovascular embolization) will result in adversity and resilience from neurosurgeons	Accurate scheduling of the monthly working time The establishment of a behavior code within the group and enhancing trust between the members of the group The development of unitary practice protocol, upon the agreement of both groups Attracting the groups in the program extension
Healthcare personnel and auxiliary personnel	Intrapersonal – the increase of the amount of work, high and sustained qualification requirements Interpersonal – controversies related to the manner the tasks are fulfilled Intra-group – disagreements in relation to responsibilities and duties	Obtaining salary bonuses and organizing EMC (ongoing medical education) courses Strict assignment of tasks and work schedules
MPH, NHIH, local authorities	Increased costs Unsatisfactory results create an unfavorable public image The existence of other priorities within the healthcare policy	Explaining the advantages related to the establishment of such a service through the decrease of morbidity and mortality rate that in the end result in cost reduction Promoting the good results obtained and highlighting the support received from local and central authorities Lobby for prioritizing the program

A GANT chart was also created for the specific project

Activities	L 1	L 2	L 3	L 4	L 5	L 6	L 7	L 8	L 9	L 10	L 11	L 12
1. Determining the project team, responsibilities assignment, setting up the existing location	■											
2. Staff recruitment	■	■										
3. Purchasing healthcare materials necessary for interventional procedures	■	■										
4. Training sessions for members of the unit – Romanian expert (18 sessions)	■	■	■									
5. Conducting 2-3 training sessions for members of the unit – foreign expert		■	■	■	■	■	■	■	■	■	■	■
6. Training in similar units within the EU – 10 persons				■	■							
7. Starting permanent emergency care activity				■								
8. Information of ambulance dispatches, SMURD, hospital emergency rooms about the opening of our unit				■								
9. Promotion in mass media, magazines, medical congresses, posters and boards, and press conference				■								
10. Review and assessment						■	■	■	■	■	■	■

The establishment of this department could be financed by:

- The Ministry of Health through the National Program of Cerebrovascular Disease and through programs intended for healthcare emergency units
- The Ministry of Labour and Social Protection through European programs aiming at decreasing the number of people unable to work and who require special social conditions
- European structural funds
- Multinational manufacturers of instruments and equipment used for the diagnosis and treatment of neuro cerebrovascular disease.
- Foundations and non-profit organizations whose activity covers the submitted program.

If such a department would be established, the expected results refer to:

- Improving the performance of the hospital by increasing the efficiency, effectiveness and quality of medical services;
- Wide coverage, as this would be an unique department specialized in the simultaneous surgical and endovascular treatment of cerebrovascular diseases;
- Increase of the institute's own income through payments per service;
- Decreasing the average time of hospitalization, the patients being discharged after a few days;
- Selection and differentiated approach towards neurovascular emergencies that will be quickly admitted, examined and treated;
- Intervention in the acute phase, that is within the first few hours after a stroke, that could save many lives.

Conclusions

The establishment of units for the diagnosis and treatment of neurovascular emergencies is extremely important for our country given that we are discussing a pathology that results in high mortality and morbidity rates, with significant social and financial costs, if not treated in a timely manner. We are among the last countries in the EU not having this type of units within the healthcare system.

It is true that the establishment of such units involves costs, and these could be too high for a system where investment in healthcare is always scarce. But benefits throughout time are extremely important. In addition to being a major cause of mortality, the neurovascular pathology that is not appropriately treated results in the most severe disabilities. And this means a substantial financial burden for the government, considering that it affects a relatively young

population, thus with a high life expectancy. If treated in a timely manner and by experienced doctors, the neurovascular pathology could lead to spectacular results.

Nowadays, a modern diagnostic and treatment unit clearly involves an endovascular embolization service rather than just a micro-neurosurgical service. Ideally, this project should be a pilot for further development of such emergency care units across the country, covering evenly the Romanian territory and meeting 24/7 requirements when it comes to neurovascular pathology. But the project has to adapt to the economic realities, and aims at showing the easiest way in terms of financing, viability and speed to put into practice for a neurosurgical service in Romania.

Considering the specificities of the mentioned institute, the endovascular embolization department complements the treatment of this pathology specifically in cases where neurosurgery cannot offer the best treatment solutions.

The learning curve and the development of authentic specialists are not easy to achieve and they require time, but benefits are outstanding. This trend is irreversible and in the shortest time we will surely become an European state in terms of emergency treatment of neurovascular pathology.

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