

Competitiveness and strategic flexibility through real options

Titus SUCIU¹, Ana-Maria GERMAN²

Abstract: *The paper analyses the issue of competitiveness in the industry sector, offering an interesting theoretical framework about competitiveness and an application based on real options analysis. It addresses the theme of real options decision-making in multinational industrial companies and models an investment decision. The best strategy leads to investments in a new project even if the business environment is dynamic. The results help managers in the decision-making process, with a view to obtaining performance.*

Key-words: *competitiveness, real options, strategy, industry, innovation*

1. Introduction

The concept of open innovation is based on the idea that companies have to valorise external knowledge that can be bought. In strategic terms, the competitive advantage of a product does not come from the infusion of technical knowledge from multiple technologies, but from the modalities of connecting and coordinating the resources and the partners companies within a project.

Deloitte Research has developed a framework called “strategic flexibility”, which has four steps: anticipate, formulate, accumulate and operate. Strategic flexibility permits a company to confidently with certain international initiatives that will be sustainable under a broad range of future scenarios, including those in which globalization unravels. In the specialised literature there are five basic approaches dealing with uncertainty in strategy selection when a firm faces scenarios with differing strategic implications: bet on the most probable senario, bet on the best scenario means, hedge, preserve flexibility and influence. We give emphasis to the theme of real options decision-making in multinational industrial companies. Our application refers to an investment decision in the industry sector, an application that is focused on the real option analysis.

¹ Transilvania University of Braşov, titus.suciu@unitbv.ro

² Transilvania University of Braşov, german_ana_maria@yahoo.com

2. Economic competitive levels

The specialised literature mentions four levels on which economic competitiveness takes place, each having its own peculiarities:

1. The nanoeconomic level. It is about competitiveness among individuals in economic companies. This nanoeconomic competitiveness is fierce and it unfolds within restrictions imposed by the company organization and by its market position. Nanoeconomic competitiveness is the engine of the entire economic competitiveness (Voiculescu, 2007, pp. 237-238).

2. The microeconomic level. Business operators are small companies with minimum social responsibility. The following question arises: what if a business operator increases labour productivity? It can fall into one of the following cases: it either preserves the same market share as before increasing its productivity, meaning the same production with fewer employees, or it increases its market share to the detriment of its competitors (Voiculescu, 2007, p.239).

3. The minieconomic level. Business operators, competition actors, are big companies with subminimum social responsibility. The typical representative of such a category is the transnational company. It has an economic size comparable to macroeconomic actors (national economies), being in many cases even bigger than them, but just the same as microeconomic actors, it can outsource the negative impact of competition in its own social environment. A transnational company can attract the most effective individuals in a given environment, in order to get the weaker countercompetitors out of the game. The ability to attract performance is given by its size, its effectiveness being rendered through the effect of scale economy, but also by the possibility to operate on multiple markets (Voiculescu, 2007, pp. 240-241).

4. The macroeconomic level. Business operators are big operators having big social responsibility. The typical representative of this category is the national economy of a country. From the vantage point of such a business operator, employees are also citizens, taxpayers, voters; the state is liable, but it also has the political interest to ensure a certain degree of social protection. The macroeconomic operator functions in a regulated environment, but it is less penalised than in the legal system in which the micro- or mini-economic operator functions. In the case of the national economy, there is no ultimate authority imposing the compliance with the rules. The nature of regulations is self-assumed (treaties, conventions) and not imposed as it happens in the case of nano, micro and minieconomic actors. At the same time, macroeconomic actors are free to set a system of regulations ensuring a maximum of competitiveness outside, unlike the minieconomic actor, which is technically free to select this system of regulations out of a given supply. On the one hand, social responsibility is structured on political fields (sovereign states) with an authority setting internal rules. On the other hand, competition is fierce outside, with no authority imposing laws (Voiculescu, 2007, pp. 242-243). Any organisation,

regardless of its dimensions, can adopt the model of open innovation. The advantages of this model are various and in the domain of high technology products, the assimilation of the principles of open innovation represents “a must”. All the parties involved can win by participating in this process, no matter if it is knowledge, technology or financial resources.

3. Industry scenarios and competitive strategy

Many companies falter in translating scenarios into strategy because the bulk of attention is placed on developing scenarios. A strategy built around one scenario is risky, while a strategy designed to ensure success under all scenarios is expensive. Moreover, the strategies implied by the different scenarios are often contradictory. A firm does not know which scenario will occur, so it must choose the best way to cope with uncertainty in selecting its strategy, given the initial position and resources.

There are five basic approaches to dealing with uncertainty in strategy selection when a firm faces possible scenarios with differing strategic implications.

1. Betting on the most probable scenario means that the firm designs its strategy around the scenario that is seen to be most probable, accepting the risk that may not occur.
2. Betting on the best scenario means a firm designs its strategy for the scenario in which the firm can establish the most sustainable long-run competitive advantage given its initial position and resources. The risk is that the best scenario does not occur.
3. Hedging means that a firm chooses a strategy that produces satisfactory results under all scenarios. The idea is similar to the minimax strategy in the game theory, where a player makes the move that minimizes his maximum loss. Usually hedging will yield a strategy that is not optimal for any scenario. The resulting sacrifice in strategic position is traded off in favour of a reduction in risk.
4. Preserving flexibility means that the firm pays a price in point of the strategic position because of the first-mover advantage gained by firms that commit early. Preserving flexibility sacrifices first-mover advantage in exchange for a reduction in risk. If a firm can recognize early which scenario is going to occur, it can minimize the cost of preserving flexibility.
5. Influencing means that a firm attempts to use its resources to bring about a scenario that it considers desirable. Technological changes, channel policies, government regulations can be sometimes influenced (Porter, 1985, pp. 470-475).

4. Open innovations and strategic flexibility

The concept of open innovation is based on the idea that organisations can not conduct all the research and development activities by themselves and that is why they have to valorise external knowledge that can be bought. At the same time, applying the open innovation strategy can be a source of competitive advantage. The organisation that applies open innovation carries on the internal research projects but it also has access to external projects whose findings could prove valuable or beneficial. The organisation also provides, in its turn, the external business environment, composed of other organizations or institutes, with the outcome of the research and development programs.

In strategic terms, the competitive advantage of this product does not come from the infusion of technical knowledge from multiple technologies, but from the modalities of connecting and coordinating the partner companies inside the project. The innovation process is closely connected to the research and development process and, together, they contribute to economic growth. In the same way, the new technologies contribute to overcome some of the social phenomena such as poverty, poor health or damaging the environment (Gassmann, 2006, pp. 223-226). Deloitte Research has developed a framework called “strategic flexibility” to cope with and exploit exactly this type of dilemma. This approach enables a company to compete effectively today, while preparing for an uncertain tomorrow, without either over-committing to one vision of the future or simply hoping for the best. In terms of process, strategic flexibility involves the use of scenarios to anticipate alternative future business environments, defines a strategy that includes actions that will be appropriate regardless of which scenario the future most resembles, but also applies real options concepts to make contingent arrangements for elements of the strategy that may or may not be needed.

Managing strategic risk according to the strategic flexibility approach involves four stages – Anticipate, Formulate, Accumulate and Operate:

Anticipate: Identifying the drivers of change and defining different ways they might evolve and interact over a period of time such as five to ten years. That usually results in four or five scenarios that capture the range of most-plausible futures.

Formulate: Defining an optimum strategy for winning within the specific business environment of each scenario. Then these plans are merged into a single strategy with two components – “core” elements (initiatives that show up on the “to-do lists” for most or all of the scenarios) and “contingent” elements (initiatives that are needed under the circumstances of just one or two scenarios).

Accumulate: Acquiring any assets and capabilities needed to execute the core elements of the strategy. Conventional scenario-based strategy methods often stop with that. The next step is to make limited commitments with regard to those assets and capabilities that will be essential if and only if certain circumstances emerge.

The figure presents the underlying asset lattice evolution with a volatility of 30%. Using the binominal approach following a ten time-steps, the value of the contraction options is calculated. All the calculations and steps are based on the up factor, down factor and risk-neutral probability analysis.

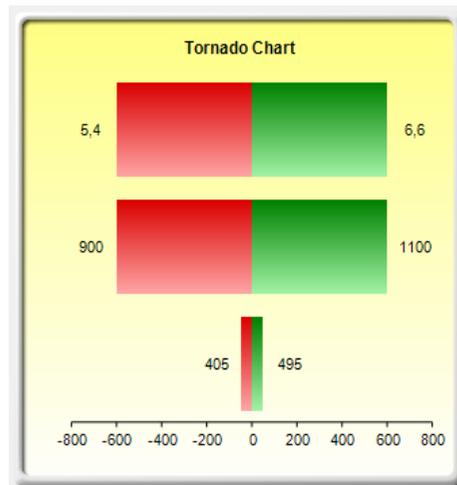


Fig. 2. *Tornado Chart with 30% volatility*

The Tornado Chart illustrates sensitivity. This analysis runs a quick static sensitivity of each input variable of the model at a time and lists the input variables from the highest impact to the lowest. The lattices show a result that proves a good convergence. Figure number two illustrates the Tornado Chart with 30% volatility.

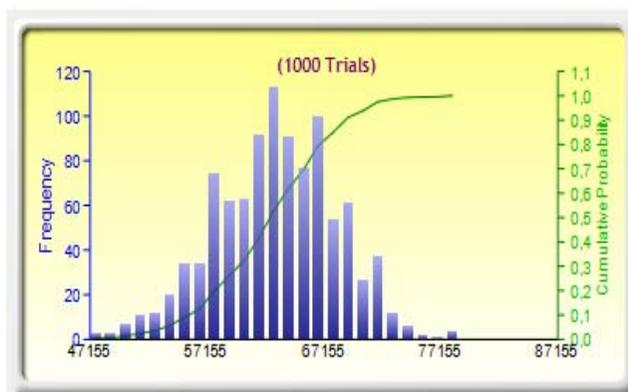


Fig. 3 *Simulation with 30% volatility*

The figure represents the simulation of the option taking into account the present value, the implementation costs and the volatility.

In conclusion, the analysis emphasizes that the manufactory should choose the contraction option for its manufacturing facilities and implement its project.

6. Conclusion

The paper offers an exploration of traditional and modern strategic management perspectives for gaining competitive advantage in a turbulent business environment. The study focuses on economic competitiveness levels, industry scenarios, strategic flexibility and open innovations. Also, the article offers a case study based on the real option analysis that demonstrated that this method could be a very good instrument in the decision-making process. The integration of real options in strategic management contributes to a new synergic framework better adapted to the development of organisation's capacity to adequately respond in high uncertainty environments. In dynamic markets, competitive advantage focuses on the ability to develop capabilities (Danneels, 2002; German and Nechita, 2015).

Further studies will focus on developing a business model using real options that could help managers to use the best strategies in their organisations.

7. References

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