

# Chapter 1

## An Approximation to Real Options Analysis (ROA) in a Colombian Construction Company: The Case of HL Ingenieros

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### ABSTRACT

*This chapter aims to apply a real options analysis to a Colombian mid-size construction company HL Ingenieros presented as a case study looking to expand the variables considered in business valuations so companies can access new sources of funding, improve their capital structure, and become an investment opportunity for inbound foreign direct investment to the country. Most companies are not able to attract these funds due to (1) lack of development in the Colombian capital markets, (2) the lack of information that makes valuation difficult, and (3) the lack of use of alternative methods of valuation that include available strategic options. Several scholars have discussed the use of real options as an alternative method for business valuation that includes the effect of operational flexibility. This case study explores the potential gains in the use of real options for business valuation in companies from emerging countries planning to internationalize their operations.*

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## **INTRODUCTION**

This chapter describes the case study of the mid-size Colombian company HL Ingenieros applying Real Option Analysis (ROA) to the decisions this company has made since its creation to present time and their current available options towards the near future. A brief background is presented which describes the arguments found in relevant literature regarding the challenges facing Colombian companies with reference to their management and operations. Additionally, a short description of the transition of Colombian companies towards International Financial Reporting Standards (IFRS) compliance and the potential opportunities for Colombian companies to access new sources of investment capital due to the adoption of these Standards is presented.

The use of real options for company valuation has been discussed by notable scholars. For the purpose of this chapter, this approach expands traditional methods of company valuation and takes into account the effects of operational flexibility (Damodaran, 2002; Mascareñas, J., Lamothe, P. López-Lubian, F. & De Luna, W., 2004; Van Putten & MacMillan, 2004; Kodukula & Papudesu, 2006; Mun, 2006).

The chapter includes a brief history of the company selected for the case study, its different stages, corporate and commercial challenges faced along its existence and an analysis of the decisions made to present time. In 2017, HL Ingenieros reached a particular milestone. The leadership of the company decided to file for restructuring under the Colombian Law 1116 of 2006, a decision that opened up a new set of options available to the company which are analyzed ahead. The decisions made by HL Ingenieros were charted in decision trees using the ROV Visual Modeler software.

## **CASE BACKGROUND**

The lack knowledge of financial tools is the common denominator that explains the low productivity of companies in the construction sector in Colombia. Osorio (2006) mentioned that there is no industrialization of the construction process, that construction activity is not independent of the economic cycle, nor have the organizations developed internal capacities that allow better financial management of projects to access diverse funding sources through capital markets.

Entrepreneurs have the perception that the most important problem in Latin America for the development of internal capacities is lack of financing. However, Amaya (2005) points out that the main drawback lies in the lack of development of human resources in financial matters, with staff required merely to optimize cash management. It is true that SMEs in construction suffer from liquidity constraints, which lead them to seek alternative sources of credit. Nonetheless, financial institutions are aware that providing credit to companies whose staff is not trained to manage these funds may result in a counterproductive and risky situation (Rostamkalaei & Freel, 2016).

Additionally, some research has pointed to the relative volatility in SME results compared to larger companies because of the marked differences in cash positions and profits generated from one period to the next, which is explained by their lower liquidity (Moldovan, Vătavu, Albu, Panait & Stanciu-Mandrăleanu, 2016; Forte, Barros & Nakamura, 2013; Filipe, Grammatikos, & Michala, 2016; Azeez, Abubakar & Olamide, 2016). Essential is financial management, especially in the construction sector, as a result of the close relationship between working capital and overtrading, due to the lack of medium- and long-term financing available to firms in the sector and the consequent reliance on short-term financing (McGuinness & Hogan, 2016; Baños, García & Martínez, 2016).

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