

Joint Venture Evolution: Extending the Real Options Approach

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Real options theory has emerged as a promising avenue to study joint venture (JV) evolution as a strategic response to managing uncertainty. We extend the real options approach by integrating it with game theory. Such a combined method enriches the valuation functions of each partnering firm and helps to identify the optimal decisions for exercising options in a JV. In our model, each firm's synergy from the joint operation and its knowledge acquisition capability (KAC) can significantly influence the competitive dynamics between partners, potentially affecting how each firm decides to acquire, divest, or dissolve. We employ a new solution technique in real options theory to capture the stochastic process of three factors, and use computer simulation to test the model under varying conditions. The results are stated in five testable propositions, providing a better understanding of the dynamics of a JV. We find that symmetries between partners in synergy or KAC contribute to stability or dissolution of the JV, whereas asymmetries in synergy or KAC make acquisition of the JV assets by one partner desirable. Copyright © 2008 John Wiley & Sons, Ltd.

INTRODUCTION

Joint ventures (JVs) are increasingly presented in strategy literature as real options for managing and exploiting uncertainty (Kogut, 1991; Bowman and Hurry, 1993; Chi, 2000; Reuer and Leiblein, 2000). The availability of incremental information over time and the ability to make choices for investments/divestments are central to such theorizing. A JV provides a partnering firm with the ability to exploit the upside potential by acquiring the other partner's equity, if uncertainty resolves favorably, or to avoid downside losses by divesting its equity or dissolving the JV, when uncertainty resolves unfavorably (Chi, 2000). Increasingly, the

literature has shown that the competitive dynamics between option holders (JV partners) cannot be omitted from the analysis because such dynamics can play a significant role in option exercise decisions (Grenadier, 2002). While much has been theorized on the value of the real options open to JV partners (Chi and McGuire, 1996; Chi, 2000), the literature is not clear about the conditions under which partners exercise their options to acquire, divest, or dissolve, especially in the context of competitive dynamics. We note that partners' synergy from joint operation of the JV and their knowledge acquisition in the JV can evolve asymmetrically, and we specifically address the question: How do synergy from the joint operation and knowledge acquisition capability (KAC) of partners in a JV influence their decisions to exercise their options? We present a creative integration of real options analysis and game

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