

Chapter 21

The Destructive Effect of Complex Analytics on Innovativeness

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ABSTRACT

Several studies have raised a common concern in the field of management, the lack of innovation. However, they either attribute this phenomenon to the inefficiency of marketing analytics, or to managerial despair in evaluating innovation projects. In this article, the authors propose and empirically test cognitive effort spent on marketing analytics which can lead to the lack of innovativeness, due to the negative impact of high cognitive effort on the managers' mood. In a longitudinal experiment, where manipulating the complexity of the decision context through marketing analytics, the authors demonstrate that managers employing simple marketing analytics expect their competitors to launch more products, compared to managers using complex marketing analytics. They also demonstrate that firms employing simple marketing analytics behave venturesome by embarking upon innovative activities. At the same time, firms using complex marketing analytics take more deliberative actions by innovating less and amplifying short-term gains with high priced products.

INTRODUCTION

In the last decade there has been a gradual data expansion that drives managers to seek for the development and employment of sophisticated tools that will help them make sense of the large datasets. Even though there have been significant improvements in terms of managerial tools, a lot of them fail to deliver useful information. In a recent interview, many executives stated that they did not trust the quality of the insight coming from many management tools. Particularly, nine out of ten executives admitted that their

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tools usually fail to meet their expectations, and only 23 percent of the executives interviewed stated that their tools were driven by some business strategy (Cruickshank, 2010). Recently, Ahuja and Novelli (2017) stressed out the importance of the behavioral factors that affect the evaluation of entrepreneurial efforts and the persistence of the evaluation methods providing little strategic value.

This paper focuses on the strategic choices of firms that vary with respect to the complexity of management tools, and the perceived risk of competition. In the model proposed, a firm's adoption of a strategy is dependent upon the perceived opportunities and threats in the decision context nesting risk of competition. Although firms acquire same information through market research tools, the complexity of market research tools alters their risk perception and consequently the strategies they pursue as they understand that opportunities and threats that are not identical. Consequently, firms who infer opportunities from market information follow bolder strategies, such as product launch and upgrades, while those who infer threats, pursue safer strategies such as pricing already existing products high and boosting earnings.

We conduct a longitudinal field experiment using StratSim (Deighan, James & Kinnear, 2006), a management simulation game, in which the availability of market research tools was manipulated for observation purposes such as the market information that are disclosed in different levels of complexity, and the degree to which restrictions alter strategic choices concerning innovation and pricing.

This paper is organized as follows. First, we provide a focused literature review and a behavioral theory of tool-aided decision making. Second, we present two studies conducted at individual- and group-level respectively. Finally, we discuss our findings and conclude with final remarks.

LITERATURE OVERVIEW AND THEORY

Many contemporary studies indicate mixed results for the effective applications of management tools and that highlights the ongoing dilemma regarding the usefulness of such tools (Little, 2004; Natter, Mild, Wagner & Taudes, 2008; Schilling & Schulze-Cleven, 2009). Christensen, Kaufman, and Shih (2008) raise an important concern of the last decade referring to the lack of innovativeness. They attribute this problem to management tools like financial metrics and methods employed in evaluating research and development (R&D) projects.

A study on the effect of decision making compares the attitude of two different profiles of people; the first person enrolls in fast and frugal decision making which requires less cognitive effort, whereas the second person conducts rigorous analyses when making a decision which requires more cognitive effort. As argued by Schwartz and colleagues (2002) the first person is found to be more optimistic with higher self-esteem compared to those who conduct rigorous analyses who outstand in depression, perfectionism, regret, and self-blame. These attitudes are attributed to a negative correlation of cognitive effort and mood, stating that the higher the cognitive effort required for a decision the lowest the mood and vice versa. Optimistic individuals show confidence in their self-capabilities and it is their optimistic attitude that encourages them to consistently approach challenges (Scheier, Carver & Bridges, 1994). This indicates that pessimistic managers are more likely to overestimate the risk of failure compared to optimistic managers who foresee more opportunities. In all cases, whether managers behave in an optimistic or a pessimist way, their attitude is what creates a shared understanding of the competitive environment not to mention what shapes their expectancies in terms of behavior.

Moreover, lack of optimism is linked to the tendency to lack entrepreneurial motivation as pessimistic views drive managers to downgrade their self-capabilities (Kruger, 1999) and to overweight risks and the

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