

Technology-Based Mergers and Acquisitions

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INTRODUCTION

Rapid technological changes, shortened product life cycle, limited resources, and increasingly intensive competition have forced many companies to source and develop their technology and innovation capability quickly and externally. “Successful organizations are constantly seeking ways to foster innovation and new product or service development” (Kennedy, Payne, & Whitehead, 2002, p.149), especially in technology-intensive industries. Given the high level of uncertainty, time-consuming nature, and inertia of technology exploration/exploitation through internal Research and Development (R&D), the strategic use of mergers and acquisitions (M&A) to obtain new technological knowledge/capabilities has become a common corporate phenomenon.

Therefore, this article reflects on the current state of knowledge concerning the technology-based mergers and acquisitions (TBM&As) with regard to the following issues: (1) How do TBM&As perform? (2) What are the contingency factors and how do they impact TBM&A performance? (3) What kind of analytical approaches and theories are adopted in the research? (4) How can the TBM&A phenomenon be studied in the future in order to further develop knowledge concerning TBM&As? These questions are the focus of this article.

BACKGROUND

A steady increase in corporations utilizing M&As to acquire technological knowledge/capabilities has

been well documented in the literature since the 1990s (Bower, 2001; Grimpe, 2007; Valentini, 2012). However, the high-tech or R&D-intensive sectors, such as information technology, electronics, etc., are characterized by high uncertainties, a need to constantly develop new technology and innovation capabilities, reliance on highly specialized skills and expertise, and inefficient markets for know-how and technology, which distinguish them from other types of industries and thus necessitate that they be studied separately.

M&As can come about as a result of many different motivations (Mukherjee, Halil, & Kent, 2004), including the search for new technological resources. Ranft and Lord (2002) stressed that research on acquisitions should be refined by distinguishing the specific motivations for an acquisition and the type of resources being acquired. However, some research put all types of acquisitions together, even though they represent fundamentally different phenomena that need to be studied separately (Bower, 2001). These research studies tend toward overgeneralization and oversimplification when dealing with M&As (Schweizer, 2005). Therefore, this article specifically focuses on the TBM&As studies.

Generally, researches on TBM&As can be grouped into two streams: the first stream focuses on the drivers or conditions under which M&As are preferred as the external technology sourcing strategy (Desyllas & Hughes, 2008). The second stream highlights M&A impact to the firm performance, the contingent factors, and effective strategies (Desyllas & Hughes, 2010). This article makes contributions to the second stream through a systematic review of articles in top-tier journals from 1990 to 2012, which covered points of view and findings from different TBM&As disciplines.

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A REVIEW OF RESEARCH

Methodology

The review is conducted by using selected elements from the systematic review methodology (Tranfield, Denyer, & Smart, 2003), which consists of three stages: planning the review, conducting a review, and reporting and dissemination.

Planning the Review

After framing the research question and defining the key concepts of TBM&As, we selected sources in which to search for papers. We were looking to obtain comprehensive knowledge which had been tested with academic rigor, and therefore, we used three steps to identify the samples that would be of use to us.

First, we selected the popular referred journals by checking several of the latest papers which conducted literature review in M&A research field (e.g., Meglio, 2009; Valentini & Dawson, 2010; Thanos & Papadakis, 2012). We also referred to the 2012 ranking of journals published by Association of Business Schools, which covers 22 research areas. Based on these and our research interests, we selected 52 journals and one book on M&As, covering the fields of management, innovation and technology, organizational studies, human resources and employment studies, strategy, entrepreneurship and small business management, and finance, in which a large body of M&A research is conducted. Most of the journals were rated 4*, 4 and 3. Some journals ranked as 2 though we did include some of lower ranking because they fit our research interests and were used in some past literature.

Second, we set out the search criteria and the time frame. We used keywords like “technology, innovation, R&D,” as well as “merger and acquisition,” including their plurals, synonyms, and verbal and noun forms, to search the papers in each journal. The keywords had to appear in the title or abstract. The time span of the publications ranged from 1990 to 2012, which was to be expected given that the number of M&As in high-tech industries has grown dramatically since the beginning of the 1990s. The search resulted in 192 articles.

Finally, we examined all the articles, by looking at their abstracts, introductions, and conclusions to decide which articles met our review objectives. The

papers that focused on a broad definition of external technology sourcing strategies were excluded, as were papers which had no M&A performance assessment or did not investigate the impacting factors. In all, 38 articles from 26 journals and one book were accepted for the final review. Six of the selected articles were published between 1990 and 2000, and the remaining 32 were published between 2001 and 2012.

Conducting the Review

All reviewed papers were classified according to elements from each article and were entered into a spreadsheet for easier comparison. The classification elements included the research questions, theoretical perspectives, sample, time span and data collection methods, country/region of research, industry distribution, performance measures, analytical approaches, empirical findings, and our comments on the piece as a whole. The main content of these articles was arranged according to these classifications and in chronological order of publication. This enabled us to get an overview of all the articles and to see the patterns, research evolution, and the differences and gaps among different research studies. We extracted and analyzed the data separately using coding techniques and these findings were then compared and reconciled. Furthermore, we discussed the inconsistencies in those research findings while attempting to arrive at a common understanding.

Findings

Our findings are reported in this section. They include the reviewed articles' research methodology, theoretical perspectives, performance measures, impacting factors, and empirical findings, as well as our discussions and comments.

Research Methodology

Different data collection methods are used in the papers we have reviewed. The existing research heavily relied on secondary data, while several other papers used primary data from survey or interviews, complemented with various archival data sometimes. In 2005, researchers seem to have begun refining their research sample classification and focusing on TBM&As that happened in a specific high-tech industry. A majority of

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