The Internet as a Complementary Resource for SMEs: The Interaction Effect of Strategic Assets and the Internet

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ABSTRACT
It has been suggested that the Internet can be used to leverage a firm’s strategic assets. However, empirical research on complementarity is still rare and frequently inconclusive, especially in the context of small and medium-sized enterprises. We propose a theoretical framework with the independent variables business resources, dynamic capabilities and IT assets. Survey data of 146 small firms suggest that the Internet is complementary with business resources and dynamic capabilities but not with IT assets. Therefore, the framework may enable small firm managers to create competitive advantage by identifying strategic assets that are complementary with the Internet. Furthermore, our research highlights the threat of an over-investment in IT assets.

Keywords: Competitive Advantage; Complementarity; Internet; Performance; Resource-based View; SMEs; Technology

INTRODUCTION
The resource-based view of the firm (RBV) has become the dominant framework in strategic management research. Its basic assumption is that firms can exploit strategic assets in order to create competitive advantage and thus above average performance. Another core assumption of the RBV is that strategic assets can be complementary. This means their value increases when they are combined. “Complementarity represents an enhancement of resource value, and arises when a resource produces greater returns in the presence of another resource than it does alone” (Powell and Dent-Micallef 1997, p.379). Teece (1986, p.301) suggests that complementary assets are especially important for small companies because, in contrast to their
larger competitors, they “are less likely to have the relevant specialized and cospecialized assets within their boundaries and so will either have to incur the expense of trying to build them, or of trying to develop coalitions with competitors/owners of the specialized assets”. However, the complementarity of strategic assets is typically taken for granted but has hardly been empirically scrutinised, and non-anecdotal studies analyzing the interaction effects of strategic assets within a firm are frequently inconclusive (Powell and Dent-Micallef 1997; Song, Droge, Hanvanich and Calantone 2005; Zhu and Kraemer 2002). Therefore, Song et al. (p.271) conclude “clearly, resource combinations do not always lead to synergistic performance impact.”

This paper seeks to analyze whether strategic assets are complementary with the Internet. It contributes to the still underdeveloped research on complementarity by introducing the Internet as a complementary resource. We believe that the Internet can be extremely important for SMEs, and that it can be used to “level the playing field” with larger competitors. With this research we want to give managers of SMEs some information about which strategic assets can be leveraged by the Internet. Based on the literature review and survey data we suggest that researchers should examine complementarity at research settings in which a clear distinction of strategic assets is possible. The remainder of the paper is organized as follows. In the next section the literature on the resource-based view and complementarity is briefly reviewed and the hypotheses are presented. After that, the research methodology is described; followed by the results. And then the discussion, the conclusions, the limitations, and some suggestions for future research are offered.

**Complementarity in Resource-Based Research**

According to the resource-based view of the firm (RBV), firms perform differently because they differ in terms of the strategic assets they control (Barney 1991; Penrose 1959; Wernerfelt 1984). The founding idea of viewing a firm as a bundle of strategic assets was pioneered in 1959 by Penrose in her theory of the growth of the firm. This paper focuses especially on the complementarity of strategic assets. Under the resource-based view, a complementary interaction typically enhances the value for both (or all) strategic assets, although the causality may be ambiguous (Barney, 1991). Yet, researchers have only started to analyze complementarity of strategic assets. Empirical work in that area can be divided in the following two research streams.

One stream of research focuses on complementarity at strategic alliances or at mergers and acquisitions. For example, Rothaermel (2001) found that firms focusing on complementarity outperform those firms that limit their focus on the exploration of new technologies. Stuart (2000) suggested that the reputation of a larger firm is a complementary resource for a smaller firm. In particular, an alliance with a larger firm can help a smaller firm build confidence and attract customers, which then drives financial performance for both partners. Chung, Singh, and Lee (2000) found out that banks tend to ally with other banks that can complement their weaknesses. Krishnan, Miller, and Judge (1997) suggest that complementary top management teams (defined as differences in functional backgrounds between acquiring and acquired firm managers) drive post-acquisition firm performance. Similarly, Capron and Pistre (2002) suggested that acquirers only earn abnormal returns when their strategic assets are complementary with the target and not if they only receive strategic assets from the target.

The second research stream focuses on complementarity within a company. Powell and Dent-Micallef (1997) examined complementarity of IT assets with business resources and human resources and came to inconclusive results. Similarly, Song et al. (2005) found complementarity between marketing-related capabilities and technology-related capabilities only in high, but not in low technology turbulent environments. Zhu and Kraemer (2002) examined the relationship of dynamic capabilities and firm performance and came to inconsistent results.
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