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Lost in Translation or Lost in Your Neighbor's Yard: The Moderating Role of Leverage and Protection Mechanisms for the MNC Subsidiary Technology Sourcing–Performance Relationship

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ABSTRACT

The MNC subsidiary technology development process involves the interplay among three components; sourcing, leverage and protection. Subsidiaries source technology from headquarters, local collaborators and their own R&D activity. Research has focused on the performance impact of sourcing, but has overlooked how leverage and protection mechanisms contribute to the creation and capture of value from sourced technology. Adopting a configuration-based lens grounded in the resource and knowledge-based perspectives, we conceptualize subsidiary sourcing along two dimensions: *organizational boundaries* making technology more or less difficult to protect and *geographical country boundaries* making technology more or less difficult to leverage. When a sourced technology is matched with appropriate leverage or protection mechanisms, subsidiaries are better able to create or capture value. Using a survey panel dataset of 1971 Taiwanese subsidiaries our conjectures were supported. Sourcing from local collaborators which occurs across organizational boundaries was most highly associated with profitability when protection mechanisms were in place, while sourcing from headquarters which occurs across geographical boundaries was most highly associated with profitability when leverage mechanisms were developed. We contribute to the subsidiary technology sourcing and performance management literatures by theorizing how the interplay among components of the technology development process contributes to creating and capturing value.
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1. Introduction

How an MNC subsidiary creates and captures value from technology sourcing is a central concern of international business scholars and practitioners (Murray et al., 2005; Papanastassiou and Pearce, 1997). Subsidiaries source technology from their headquarters (HQ) (including sister subsidiaries), local collaborators, and their own R&D activity with the expectation of positive performance outcomes (Andersson et al., 2002; Cui et al., 2006; Manolopoulos et al., 2009). While prior literature has focused on the performance benefits of technology sourcing, adequate attention has not been paid to the *challenges* of creating and capturing profits once a subsidiary has sourced technology (Kotabe et al., 2007). For instance, technology sourcing from HQ provides access to an MNC's knowledge but there is no guarantee of a profitable outcome if challenges associated with adaptation to local

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markets needs cannot be resolved (Phene and Almeida, 2008) – *value gets lost in translation*. Similarly, although technology sourcing from local collaborators helps develop locally-tailored products there are challenges that the subsidiary must address to reduce the risk of value being appropriated (i.e., captured) by local partners (Colombo et al., 2011) – *value gets lost in your neighbor's yard*. While challenges associated with the creation (leverage) and capture (protection) of sourced technology have been acknowledged in the strategy literature (McEvily et al., 2004) they have generally not been integrated in the subsidiary stream of research (for an exception, see Li and Xie, 2011). As a result our theoretical understanding of how subsidiary managers should address challenges to creating and capturing value from technology sourcing is underdeveloped, and thus resources devoted to subsidiary sourcing are likely underutilized.

In response to this dilemma, we adopt a configuration-based lens grounded in the resource and knowledge-based perspectives to theorize how the impact of technology sourcing on subsidiary profitability is moderated by leverage or protection mechanisms designed to create or capture value. From the perspective of the knowledge-based view (KBV) the purpose of technology leverage mechanisms are to learn how to assimilate and integrate knowledge embedded in a sourced technology into the subsidiary's products (Kogut and Zander, 1993; Zahra and Nielsen, 2002). On the other hand, according to the resource-based view (RBV), technology protection mechanisms are designed to maintain the uniqueness of a firm's technology by limiting leakage and imitation (Armstrong and Shimizu, 2007; Barney, 1991; Peteraf, 1993). Integrating the two perspectives into explanations of the subsidiary sourcing – performance relationship deepens our theoretical understanding of why subsidiaries are able to create and capture value from their technology sourcing.

The crux of our theoretical logic is that the three types of technology sources (HQ, local collaborators, subsidiary's R&D activity) can be conceptualized along two dimensions: *organizational boundaries* making technology more or less difficult to protect and *geographical country boundaries* making technology more or less difficult to leverage (Miller et al., 2007; Phene et al., 2006). When a sourced technology is matched with an appropriate leverage or protection mechanism, subsidiaries are better able to create or capture value (see Fig. 1).

Building on this configuration-based insight, we develop hypotheses identifying how the types of technology sourcing differ in their impact on subsidiary profitability contingent on leverage or protection mechanisms (see Fig. 2). First, we hypothesize that sourcing from local collaborators will have a stronger impact on subsidiary profitability compared to sourcing from HQ and its own R&D when a subsidiary has developed protection mechanisms. While being susceptible to the challenge of leakage, technology sourced with local collaborators has a high potential to be leveraged because it occurs within the subsidiary's geographical boundary. If sourcing from local collaborators is also protected through mechanisms such as ownership structures or awareness of host country market competition, it should have a stronger impact on profitability because these mechanisms address RBV challenges to capturing value. Second, we hypothesize that sourcing from the subsidiary's HQ will have a stronger impact on profitability compared to sourcing from local collaborator and its own R&D when a subsidiary has developed leverage mechanisms. While subsidiary managers face challenges in leveraging technology sourced from HQ, it has a high potential to be protected because it occurs within the subsidiary's organizational boundaries. If sourcing from HQ is leveraged through mechanisms such as operational experience or familiarity with host country business/social customs, it should have a stronger impact on profitability because these mechanisms address KBV challenges to creating value. Understanding how a subsidiary can best create or capture value by configuring protection and leverage mechanisms best suited for each particular type of technology sourcing is central to further clarifying the subsidiary technology sourcing–performance relationship.

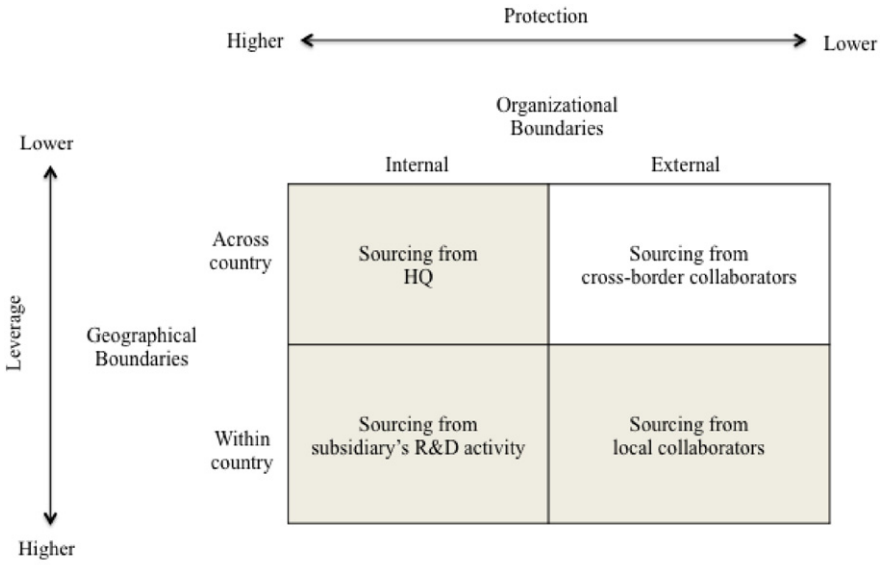

Fig. 1. The potential for protecting and leveraging subsidiary technology sourcing framework.