How Do Firms Balance Making and Buying?
The Case of Legal Services Sourcing by Fortune 500 Companies

Comments Welcome
This Draft: December 2013

Mari Sako
Professor of Management Studies
Saïd Business School
University of Oxford
Park End Street
Oxford, OX1 1HP, UK
Tel +44 (0)1865 288925
Email mari.sako@sbs.ox.ac.uk

George Chondrakis
Department of Economics and Business
Universitat Pompeu Fabra
Ciutadella Campus
C. Ramon Trias Fargas 25-27
08005 Barcelona, Spain
Tel +34 93 542 1494
Email george.chondrakis@upf.edu

Paul M. Vaaler
Department of Strategic Management & Entrepreneurship
Carlson School of Management
University of Minnesota
3-424 CarlSMgmt
321 19th Avenue South
Minneapolis, MN 55455, USA
Tel +1(612) 625-4951
Email vaal0001@umn.edu

Acknowledgements: We thank Laurence Capron, Michael Jacobides, Thomas Powell, Phanish Puranam, Deepak Somaya, Richard Susskind, P.K. Toh, and Richard Wang for helpful comments and suggestions. We also thank participants at the 2013 Sumantra Ghoshal conference at London Business School, the 2013 DRUID conference, the 2013 SASE conference, the 2013 Novak Druce Centre for Professional Service Firms conference at the Said Business School, and seminar audiences at the University of Minnesota and the University of Oxford. We gratefully acknowledge financial support for this research from the Novak Druce Center for Professional Service Firms at the University of Oxford.
How Do Firms Make-and-Buy?
The Case of Legal Services Sourcing by Fortune 500 Companies

ABSTRACT

This paper builds on recent research in plural sourcing by identifying two determinants of how firms strike an optimal make-buy balance: resource co-specialization and supplier portfolio selection. We contribute new insights on firm boundaries by fully exploring the implications of a recent move towards synthesizing the capabilities and transaction cost logics for plural sourcing. Analyses of in-house lawyers at, and law firms doing work for, Fortune 500 firms provide evidence that firms tilt the balance in favor of ‘make’ whenever opportunities for resource co-specialization exist, and in favor of ‘buy’ when they can reduce contracting costs by selecting a concentrated portfolio of suppliers with broad capabilities.

Keywords: make-and-buy decisions; plural sourcing; resource co-specialization; supplier portfolio selection; legal services.

INTRODUCTION

How do firms organize economic transactions? Since the seminal work by Coase (1937, 1988), scholars have analyzed firm boundaries by linking transactional or capability characteristics to the choice of a governance mode (i.e. make, buy, or ally) (Argyres, 1996; Jacobides et al., 2005b; Kogut et al., 1992; Poppo et al., 1998; Teece et al., 1994; Walker et al., 1984; Wernerfelt, 1984; Williamson, 1985). More recently, research on the choice of a combination of governance modes, rather than a single optimal mode, has gathered pace.

Specifically, the phenomena of firms making-and-buying the same input simultaneously has attracted attention, labeled variously as concurrent sourcing (Parmigiani, 2007; Parmigiani et al., 2009), tapered integration (Harrigan, 1986; Rothaermel et al., 2006), partial integration (Jacobides et al., 2006), or plural sourcing (Bradach, 1997; Gulati et al., 2006; Heide, 2003; Heide et al., forthcoming; Jacobides et al., 2006). Robust explanations exist on why this occurs. The likelihood of plural sourcing is found to increase with demand uncertainty (Adelman, 1949), technological volatility (Krzeminska et al., forthcoming), performance uncertainty, information asymmetry between buyers and suppliers (Dutta et al., 1995; Heide, 2003), overlap in expertise, and complementarity in knowledge and incentives for the focal firm and supplier (Parmigiani, 2007; Puranam et al., forthcoming).
It is essential to establish the conditions under which plural sourcing is likely to occur. But this research stream has provided limited guidance on a logical follow-on question: how do firms decide what is an optimal mix of internal and external sourcing? There are two dimensions to this decision. The first is the make-buy balance. Why would firms choose an internal capacity to make 80% (and buy 20%) of a product rather than make only 20% (and buy 80%)? Puranam, Gulati and Bhattacharya (forthcoming) offer some robust theoretical propositions regarding the make-and-buy balance, but broad-sample statistical evidence is missing.

The second dimension in optimizing plural sourcing concerns supplier selection. If a firm decides to buy 40% of a product or service, the 40% could be outsourced to a single supplier or multiple suppliers. But the choice over the number of suppliers for the same input affects the overall cost of contracting, as does the capability scope of each supplier. The resulting difference in contracting costs in turn affects the make-buy balance. And yet, the extant literature does not explore the impact of supplier selection on the design of plural sourcing strategies.

Why do firms differ in their plural sourcing strategies, i.e. in their choice of an optimal mix of making and buying? This study makes advances in answering this question both theoretically and empirically. Theoretically, we do so by synthesizing transaction cost and capability approaches to analyze firm boundaries (Argyres et al., 2012c). Specifically, this study draws out the as yet under-elaborated implications of this synthesis for the design of plural sourcing. Empirically, we use dynamic panel regression analysis and find robust evidence for the determinants of plural sourcing design in legal services.

We start by point out the need to agree pragmatically on the unit of analysis. Our arguments are developed from the perspective of a focal firm that is making decisions about how much to buy and how much to make ‘the same input’. Following Kzerminska et al. (forthcoming), we allow for a degree of heterogeneity in the same class of input being made and bought, with a high degree of similarity identified on the basis of the underlying technology, knowledge, or expertise. A corporate business function, such as the IT department (Bidwell), provides a pragmatic way of identifying ‘nearly the same’ input or service. This study therefore highlights the importance of corporate
functions to theories of the firm (Sako, 2013) alongside research on vertical (dis)integration of primary activities of the firm’s value chain (Porter, 1985; Williamson, 1985).

In our model, we elaborate the joint impact of the capabilities and transaction cost logics for the two determinants of the make-buy balance. First, *resource co-specialization*, i.e. unique combinations of resources (Lippman et al., 2003a; Teece, 1986), results in surplus value through on-going interaction within the firm (Argyres et al., 2012b; Dierickx et al., 1989; Kogut et al., 1992; Milgrom et al., 1995). Hierarchy also mitigates transactional hazards that arise from asset co-specialization (Williamson, 1985). Thus, firms rely more on ‘make’ in plural sourcing when greater resource co-specialization opportunities exist. Second, *supplier portfolio selection* -- the decision over how many suppliers and how to distribute work among them -- affects the optimal make-and-buy balance. Here, we depart from the assumption that transactional hazards are exogenously given. If firms choose a concentrated portfolio of suppliers with a broad scope of capabilities, the benefits of relational contracting and client-specific knowledge reduce the costs of contracting (Baker et al., 2002; Dyer, 1997; Moeen et al., 2013). Firms then rely more heavily on ‘buying’. Alternatively, firms could choose many external suppliers with a narrow scope of capabilities. Suppliers are then less willing to invest in relational governance, leading to high mundane transaction cost (Langlois, 2006) with the focal firm relying more heavily on ‘making’.

We develop these theoretical causal links and then empirically evaluate them in the context of corporate legal services, a setting with widespread practice of multi-sourcing (Susskind, 2008). Using a panel data of Fortune 500 companies and the law firms they employ, we demonstrate that the design of plural sourcing strategies tilts in favor of ‘make’ when firms have greater co-specialization opportunities between legal resources and other resources related to firm R&D, advertising and international locations. We also find that firms rely more on outsourcing when they trade with fewer external law firms and with law firms that have a broader scope of capabilities.

Our study advances research on plural sourcing by moving beyond theory and evidence about its emergence to identification of factors shaping the make-buy balance. We argue that this is achieved by recognizing explicitly the dynamic ways in which capabilities and transaction cost determinants of firm boundaries are intertwined (Argyres et al., 2012c). In particular, exploiting
unique resource co-specialization opportunities has implications for transactional hazards and hence firm boundaries. Moreover, transaction costs are endogenous to decisions relating to the design of supplier portfolio. Of course, transaction costs are determined at least partly, or even primarily, by the transaction characteristics of asset specificity, uncertainty, and frequency of trading (Williamson, 1985). Yet, we demonstrate how firms are able to ‘manipulate’ these and adjust their plural sourcing strategies accordingly.

We begin by reviewing the existing literature on plural sourcing, and explain why corporate legal services provide an ideal setting to test our predictions. We then present in sequence our hypotheses, data and methodology, and results. The final part offers a concluding discussion.

MAKE-AND-BUY (PLURAL SOURCING) THEORIES

Substantial prior work in marketing and economics employs different analytical lenses to explain the benefits and rationale for firms making and buying the same product or service. Some of the earliest explanations focused on the role of demand and technological uncertainty. Firms respond to it by maintaining capacity to produce both internally and through external suppliers, even if capacity for either mode is often idle (Adelman, 1949). A more recent rendition of uncertainty leading to plural sourcing derives from technological volatility (Krzeminska et al., forthcoming), with plural sourcing facilitating access to new ideas, learning, and innovation (Jacobides et al., 2006).

Another category of explanations is based on stronger bargaining power arising from better monitoring. Harrigan (1986) argues that internal production capacity decreases the costs of contracting because firms can use the threat of backwards integration with greater credibility. Firms are also better at monitoring external suppliers when they have some internal production capacity, and thus reduce information asymmetry with external suppliers (Dutta et al., 1995; Heide, 2003). Conversely, complementarity in incentives implies that the use of external suppliers also provides a benchmark for the performance of in-house production units (Puranam et al., forthcoming).

More recently, strategy researchers have emphasized complementarity in knowledge between the focal firm and the supplier prompting the emergence of plural sourcing (Parmigiani, 2007; Puranam et al., forthcoming). Firms may make and buy the same product where there is overlapping expertise, collaboration, and mutual learning for internal producers and external suppliers (Bradach,
1997; Cassiman et al., 2006; Parmigiani, 2007). Rothaermel, Hitt and Jobe (2006) also demonstrate how balancing vertical integration with strategic outsourcing increases overall firm performance.

These explanations of why plural sourcing occurs have been criticized in at least two ways. First, the preconditions for plural sourcing do not necessarily explain how to choose an optimal make-buy balance. For instance, if a firm is expected to face a higher degree of demand uncertainty or technological volatility, should the focal firm prepare by making more or buying more in plural sourcing? Similarly, in the face of greater information asymmetry or knowledge overlap, should the firm tip the balance toward more ‘make’ or more ‘buy’ in plural sourcing? These factors in themselves give little guidance.

Puranam et al. (forthcoming) suggest a way forward. They model the magnitude of two preconditions for the emergence of plural sourcing to influence the make-buy balance. Firms resort to plural sourcing in order to exploit complementarities based on incentives (e.g. competition between internal and external suppliers) and knowledge (e.g. collaboration between internal and external suppliers leading to knowledge sharing), and to mitigate constraints resulting from scale diseconomies. Once plural sourcing emerges, the percentage made increases with transactional hazards, as TCE predicts, but declines with complementarities and constraints. Stronger complementarities weaken the impact of transactional hazards on insourcing and lead to a make-and-buy balance with more buying from external suppliers. We build on this model by relaxing the assumption of exogenous transaction costs and introducing the impact of supplier selection.

Second, the meaning of the ‘same product’ that is being simultaneously made and bought has generated much heated debate. Williamson (1985) suggests that plural sourcing is actually an artifact of ill-identified transactional heterogeneity. Consistent with this argument, He and Nickerson (2006) find that, although trucking firms appear to engage in plural sourcing (through the use of both internal and external drivers), closer analysis reveals that outsourced hauling jobs are qualitatively different from hauling work done by company-owned trucks. Similarly, Azoulay (2004) demonstrates that project characteristics often not apparent on initial review ultimately guide pharmaceutical companies when deciding whether projects should be outsourced or assigned to company employees. This line of reasoning occurs because a transaction is the unit of analysis, and when conditions of asset specificity,
uncertainty, and frequency of trading exist, the production of the input in question is brought in-house. Our interest here, however, is to understand how these transaction-by-transaction choices add up to the decision over the firm boundary with a specific focus on the make-buy balance. Even on their own terms, TCE theorists would need to grapple with what a transaction is, whether or not it involves the total volume of ‘exactly the same input’, or each unit (or batch) of that same input.

**Portfolio of transactions as unit of analysis in make-and-buy decisions**

Any theory of plural sourcing needs to identify what it is exactly that firms both make and buy. An attempt at identifying ‘exactly the same input’ is subjected to infinite regress, as we move from a category of inputs (e.g. car engines) to a sub-category (e.g. V6 engines) to a single type of input (e.g. a V6 engine for Toyota Prius), and ultimately to a specific unit of that input type (i.e. installed in a black Toyota Prius with a specific VIN (vehicle identification number)). To avoid this logical absurdity, we follow Krzeminska et al. (forthcoming), who argue in favor of pragmatically identifying ‘nearly the same input’ based on similarity in the underlying technology, knowledge, or expertise when studying plural sourcing. Their approach assures some practical finality in deciding relevant product domains for sourcing analyses while still permitting a degree of transactional heterogeneity (He et al., 2006; Williamson, 1985).

This infinite regress problem in identifying what is exactly the same applies equally to a resource, an asset, or a capability. For example, we may consider a specific class of human resource, such as top management, but the resource has variation in terms of functional specialization. Specific individuals may, in turn, have heterogeneous experience within a functional specialism. Hence, in analyzing plural sourcing, we must make a judgment to choose a vector of resource characteristics, in which no two units of the same resource would have exactly the same vector.

This approach also eases shifting the level of analysis from a transaction to multiple interrelated transactions (Argyres et al., 2012b). This adjustment comports with strategy research interests, and helps account for patterns of interdependence between different transactions and resources, both within the firm and across the firm boundary (Moen et al., 2013). Without this adjustment, it is difficult to observe ‘spillovers’ from different transactions (Mayer, 2006) and the effect of co-specialization between inputs (Parmigiani et al., 2009). Firms regularly employ the same suppliers for
a variety of inputs with varying degrees of similarity (Krzeminska et al., forthcoming). As Jacobides and Billinger (2006) suggest, boundary choices must be viewed in systemic terms, rather than examining one boundary choice at a time, in order to fully understand the static and dynamic benefits of these choices.

**Make-and-buy decisions in legal services**

We study the procurement of corporate legal services in order to further our understanding of make-and-buy decisions. Corporate legal services are provided either by lawyers working in law firms or in corporate legal departments. Whilst they may be heterogeneous to an extent, and put to different ends in different practice areas (litigation, corporate transaction, employment, intellectual property, etc.), legal services per se could be interpreted as ‘nearly the same input’ by virtue of common knowledge and expertise imparted by legal training.

To ascertain the appropriateness of this empirical context, we carried out semi-structured interviews with 52 in-house lawyers at large firms in the United States and Britain.¹ We were particularly interested in understanding how firms use lawyers in their in-house legal department, headed by the firm’s chief lawyer or ‘general counsel’ (GC) (Rosen, 1989; Sako, 2011; Veasey et al., 2012). Our interviews first demonstrated that firms typically ‘make’ (with in-house lawyers) and ‘buy’ (from law firms) very similar legal services. Second, the interviews suggested quite substantial variation in the make-and-buy balance across firms.

We identified a number of preconditions for make-and-buy during the interviews. First, unanticipated large ‘bet-the-house’ litigation cases render demand uncertain, necessitating the use of law firms as capacity buffer. Second, in response to high ‘billable hour’ fees charged by law firms, some in-house legal departments were insourcing, in part to enhance GC bargaining power vis-a-vis law firms during fee negotiations. This second insight comports with plural sourcing motivations based on bargaining and oversight concerns of the focal firm (Dutta et al., 1995; Harrigan, 1986). Third, teamwork resulted from complementarity between the in-house lawyers’ firm-specific and the outside counsel’s practice-specific knowledge and experience (Puranam et al., forthcoming). For

¹ The first author undertook these interviews during May 2010 and December 2010. Interviews covered corporations in a wide range of sectors. Each lasted between 45 minutes and one-and-half hour.
example, in major litigation cases, the in-house counsel takes a lead in understanding what the corporation wants, and the external counsel in interpreting what the court, or a particular judge, might prefer to arrive at an overall strategy and tactic.

Other interviewees revealed considerable overlap in in-house and external law firm expertise. In-house legal departments typically had lawyers in many practice areas (litigation, corporate transactions, intellectual property, real estate, employment, etc.). They also often had law firms with extensive expertise, thus giving rise to multiple make-and-buy scenarios for one in-house lawyer at an investment bank:

*What has to be done in-house? Nothing! ... We can hire another 200 lawyers and bring more of the work in-house, or we can fire all in-house lawyers and you can manage all the outside counsel. Those are the two ends of the spectrum. The question to me is where do you want to be in the middle?*

When asked what proportion of the firm’s annual legal budget was spent on external law firms, the interviewees’ answers varied, ranging from 12% to 93%. Moreover, some in-house legal departments were found to be moving towards greater insourcing over time, while others were found to be moving towards more outsourcing. These findings highlight important variation in make-and-buy choices across firms. Clearly, not all firms favor more in-house lawyer capacity within firms (Schwarcz, 2007), nor greater use of external legal service outsourcing (Regan et al., 2010). We need a more nuanced understanding of the heterogeneity in legal service sourcing strategies.

**HYPOTHESES**

**Resource co-specialization**

Starting from very different assumptions, TCE and RBV have become increasingly symbiotic in explaining how firms set their boundaries. On the one hand, standard approaches within the TCE tradition fail to account for differences in firm capabilities or knowledge and thus benefit from RBV’s emphasis on the evolutionary, path-dependent processes that contribute to firm heterogeneity in production scope or costs (Jacobides et al., 2012). On the other, TCE and related theories complement RBV by highlighting the importance of past governance choices for developing future capabilities and the role of uncertainty and hold-up problems in forcing integration (Argyres et al., 2012a). It is not surprising then that recent effort has been directed at synthesizing the transaction cost and capabilities
logics to account for the co-evolution of capabilities and transaction costs (Argyres et al., 2012b; Jacobides et al., 2005b). Importantly, however, no study has yet to elaborate fully the implications of this synthesis for plural sourcing, leaving it as one of the “interesting empirical puzzles” to be explored (Jacobides et al., 2012:1370).

A central tenet of RBV is that firms create and capture value by deploying unique combinations of resources (Teece et al., 1997). Building on the Penrosian distinction between productive resources and ‘services’ (Penrose, 1959), the service of similar resources differs depending on idiosyncratic deployments. Lippman et al. (2003a) go as far as to state that no resource is firm-specific, and suggest that firms generate surplus value within the legal shell of the firm because the matching of resources is unique. Different terms have been employed to refer to such idiosyncratic deployment, such as interdependencies (Kor et al., 2005), asset or resource complementarity (Adegbesan, 2009; Milgrom et al., 1995), resource configurations (Eisenhardt et al., 2000), and asset co-specialization (Lippman et al., 2003b; Santoro et al., 2005; Teece, 1986, 2007). We adopt the term ‘resource co-specialization’ to emphasize the dynamic nature of the process of generating unique synergy, via ongoing interaction embedded in organizational routines (Kogut et al., 1992; Nelson et al., 1982).

The transaction cost logic cautions that resource co-specialization opportunities in themselves do not imply that all co-specialized resources have to reside inside the firm. To an extent, co-specialization involves ‘lock-in’ and a need for coordination to maintain a tightly integrated system (Teece, 2007:1339). Moreover, markets for co-specializable resources may exist, but a unique difficult-to-imitate bundle of resources creates a hold-up problem, subject to high transaction costs. Common ownership then provides protection against transactional hazards. It is because of opportunism and moral hazard that co-specialization leads to a preference for integration (Argyres et al., 2012b). In their absence, ‘the degree of co-specialization among the various resources would carry no implications for ownership’ (Foss, 1996).²

² However, transactional hazards do not necessarily arise from firm-specific resources per se, but from the fact that the surplus that results from resource co-specialization does not ‘belong’ to either the resource or the firm (Adegbesan 2009; Lippman et al. 2003b).
The above discussion implies that the greater the opportunities for resource co-specialization, the more heavily firms rely on make in plural sourcing. In our empirical context, in-house legal departments can combine legal services with other resources to enhance competitive advantage (Bagley, 2008; Orozco, 2010). Legal resources are intangible assets, the development and deployment of which is recognized as central to sustained enterprise competitiveness (Teece, 2007). But exactly what other resources give rise to co-specialization opportunities?

**Internationalized firms**

Internationalization as a process compounds the complexity of all managerial tasks (Carpenter, 2002; Prahalad, 1990). As multinationals enter foreign markets which are more distant in geographic, cultural, and administrative dimensions (Ghemawat, 2001), they suffer from greater ‘liability of foreignness’ (Zaheer, 1995). In relation to legal tasks, complexity multiplies with the number of jurisdictions in which the company operates, as it has to deal with diverse institutional environments, requiring multi-jurisdictional coordination.

However, international presence also creates opportunities for generating value through regulatory arbitrage, when firms exploit locational differences to reduce or avoid regulatory costs (Fleischer, 2010:227). Examples include transfer pricing and cross-jurisdictional tax planning. A strong legal expertise within the firm is required in order to identify such opportunities and fully capture their benefits (Bagley, 2008). As Marchant and Robinson (1999) explain, legal expertise largely relies on tacit knowledge of the context and past experience with the specifics of the situation. Hence, international firms benefit from frequent interaction between the corporate legal department and, say, the corporate accounting department (for international tax planning) or the strategic planning department (for foreign direct investment or M&A) in order to identify and realize cross-border opportunities. According to one GC interviewed:

> [I]f we’re developing a new market, then we will make it our job to ensure that we understand the legal and regulatory environment in that market and that we train managers how best to exploit opportunities in that market, whilst complying with the company’s policies and processes.

Arguably, locally based external counsel would be more knowledgeable about local regulatory issues. However, in order to identify and exploit opportunities across jurisdictions, managers are
better assisted by an in-house counsel who has an intimate knowledge of the overall business, as another GC noted:

*It hasn’t really altered my fundamental belief that the work should be done internally, and can be done internally more cost effectively and more efficiently by a very commercially attuned and commercially embedded legal function.*

Hence, greater multi-jurisdictional international presence enhances the set of potential opportunities for the co-specialization of legal and other firm resources, favoring the insourcing of legal services. Thus:

*H1: The more internationalized a firm is, the greater its reliance on the internal sourcing of legal services.*

**R&D intensive firms**

Next, we expect R&D intensive firms to rely more on their internal legal departments. Firms investing in new technology use different strategies to appropriate returns from their intellectual property, for example by choosing between secrecy and patenting. Exactly what to patent and how to patent is a know-how that arises from the co-specialization of legal expertise and technical knowledge. According to one interviewee:

*We have a large research center on this site, where we do R&D and test tubes and all that kind of stuff, and we have patent attorneys sit here, supporting them. ... We have a process by which all the guys on the test tubes over in the lab, when they invent something, will write up their lab notebooks. ... We have a patent attorney, an inventor and a business manager all sitting in the same room, because then the strategic relevance of the patent is tested rather than just that it is chemically a great idea.*

Thus, internal patent lawyers with their knowledge of the company’s unique technologies can help to increase the value appropriated from innovation (Somaya et al., 2007). For example, Reitzig and Puranam (2009) found that intermediate levels of cross-functional involvement between the legal and R&D department increase the speed of patent grants. In addition, in-house legal expertise has been found to increase patenting output as firms are able to identify patentable inventions more effectively (Somaya et al., 2007). It is important to note, however, that legal knowledge to decide *what* to patent (also what not to patent) is as important as expertise on *how* to patent.

In case studies of innovating firms there is also increased evidence on the role and importance of internal legal experts in the management of intellectual property, for example through various committee memberships (Fox, 1998; Grindley et al., 1997). Hence, the value of in-house lawyers will
be higher for R&D intensive firms due to the co-specialization of legal and technical resources. We therefore hypothesize that:

\[ H2: \text{The higher the R&D intensity of a firm is, the greater its reliance on the internal sourcing of legal services.} \]

**Advertising intensive firms**

Similarly to R&D intensive firms, firms that rely on advertising to compete will benefit from the co-specialization of legal resources. Advertising relies on the use of intangible assets, such as brand names and trademarks, which require protection from competition. Increased interaction between the legal and marketing departments will therefore help firms devise a trademark strategy that is informed by and exploits the legal opportunities and limitations in the use of trademarks (Cohen, 1986, 1991). This will enable firms to reduce brand dilution and create stronger brand names. Increased communication between lawyers and marketers is important in this process as lawyers can identify threats to the intellectual capital of the firm that are not immediately obvious to marketing staff (Peterson et al., 1999; Taylor et al., 2002). In view of these gains, firms with high advertising intensity will rely more on their internal legal department. Thus:

\[ H3: \text{The higher the advertising intensity of a firm is, the greater its reliance on the internal sourcing of legal services.} \]

**Supplier portfolio selection**

Besides resource co-specialization, we suggest that supplier portfolio selection – how many suppliers, and how to distribute work among them -- affects the make-buy balance in plural sourcing. In this way we depart substantially from TCE that assumes that transactional hazards are exogenously determined by asset specificity, the level of uncertainty, and trading frequency. TCE also assumes that these transactional characteristics are given for a specific buyer-supplier pair. If two suppliers supply the same input to a focal firm, they would have to be treated as completely substitutable as though the two suppliers were one and the same. Thus, by implication, transactional hazards are invariant to the number of suppliers for the same input. In our model of plural sourcing, instead, we assume that transactional hazards are endogenous to firm choice. In particular, the analytical calculus that prompts a firm to choose a specific make-buy balance is assumed to depend in part on the composition of the supplier portfolio.
From the perspective of supplier capabilities, there has been realization that behind the ‘façade of the market’ lies another firm with its own capabilities (Argyres et al., 1999; Jacobides et al., 2005b). By recognizing more explicitly the role of supplier heterogeneity and inter-firm trust relationships in guiding supplier selection (Hoetker, 2005), we model the cost of contracting to be endogenous also to the focal firm’s choice over the scope of supplier capabilities (Argyres et al., 1999; Dyer, 1997; Moeen et al., 2013).

Supplier concentration
When making-and-buying, the number of suppliers a firm chooses to outsource affects the proportion that it buys. This is because unlike in TCE, transactional hazards for the focal firm are assumed to vary negatively with the degree of supplier concentration. For example, increasing the number of suppliers leads to a situation in which no supplier has much incentive to invest in firm-specific platforms (Baldwin et al., 2003; Langlois, 1992, 2006) and relational governance (Macneil, 1985). At any level of asset specificity, increasing the number of suppliers therefore raises the governance cost in the market relative to that in hierarchy. Hence, firms will rely more heavily on ‘make’ in plural sourcing when a more dispersed supplier base results in higher overall costs of contracting.

By contrast, when a focal firm reduces the number of suppliers, it benefits from lower overall transaction costs resulting from suppliers’ willingness to invest in relation-specific assets and relational governance (Dyer, 1997; Moeen et al., 2013). Such investment generates inter-organizational trust and commitment (Baker et al., 2002; Dyer, 1997; Sako et al., 1998). At any level of asset specificity, reducing the number of suppliers therefore results in decreasing the governance cost in the market relative to that in hierarchy. Consequently, a highly concentrated portfolio of suppliers is consistent with increased reliance on ‘buy’ in plural sourcing.

In the case of sourcing legal services, in-house legal departments may choose to procure legal services from a large number of law firms in pursuit of specific expertise (e.g. regulatory compliance in a specific industry or country). This model is closer to arm’s-length market governance, as firms scan the environment for the best possible provider for their specific legal needs. However, this approach incurs costs, as two GCs noted:
On the basis that if you spread your job too thinly, people don’t have much knowledge of your business, and you might save a bob on one deal but I bet you it will come back and haunt you.

You cannot manage 60 law firms in any coherent or effective manner, and persuade them to act better, do things for us, and help us run our business better.

Alternatively, legal departments may outsource to a small number of external law firms linked to the focal firm by relational contracts. This mode involves less flexibility in terms of supplier switching but the firm benefits from reduced costs of buying under such contracts once negotiated and signed. For example, having an on-going and committed relationship with an external law firm facilitates better communication, and ensures that the focal firm can retain preferred external attorneys. Advantages stemming from working closely with a small number of legal service providers governed by relational agreements thus enable firms to rely more heavily on outsourced legal work.

The following quote is illustrative:

*Only three firms were chosen for the panel. I don’t let our panel law firms compete against each other. ... If I have a piece of work, I don’t say to all three of them, “Give me a price.” We tend to spread the work around, and we work with each of them individually. We’ve got good relationships with each of them, and it’s a non-confrontational approach.*

We therefore expect a firm’s willingness to invest in relational contracting with a concentrated portfolio of external law firms to result in more outsourcing and a smaller in-house legal department. By contrast, companies instructing a large number of law firms on a more *ad hoc* basis will increase their reliance on internal legal resources. This might sound counterintuitive but is explained by the endogenous impact of supplier concentration on the costs of contracting. Thus, we suggest the following hypothesis:

*H4: The higher the concentration of external law firms providing legal services to a firm, the lower its reliance on the internal sourcing of legal services.*

**Scope of supplier capabilities**

Of course, suppliers are not identical in their knowledge, resources and capabilities. These differences have important implications for decisions of vertical scope, as firms do not set their boundaries solely on the basis of transaction cost considerations. Importantly, firms compare their productive capabilities with those of suppliers, in effect substituting internal production with market contracting when superior capabilities are available in the marketplace (Jacobides *et al.*, 2005a; Jacobides *et al.*, 2005b).
Moreover, firms choose to outsource to suppliers with different breadth and depth of specialisms (Chatain et al., 2007). Thus, an important decision for the focal firm is choosing between suppliers with varying degrees of horizontal scope: ‘specialist’ suppliers characterized by a narrow scope of capabilities and more ‘generalist’ suppliers that have varied capabilities and offer a broader set of products and services (Chatain et al., 2007). Suppliers with a broad scope of capabilities are normally seen as suffering from management diseconomies due to a lack of focus (Siggelkow, 2003). However, at the same time they take advantage of having a broader set of relationships with clients which leads to more relationship-specific investments and client-specific knowledge (Chatain, 2010; Chatain et al., 2007). This reduces the costs of contracting for client firms as they effectively use suppliers as ‘one-stop shops.’

The choice of suppliers’ capability scope has implications for the make-and-buy strategy of legal services. If firms choose law firms with a broad scope of capabilities, they can outsource more as they benefit from relatively low marginal costs of market contracting. In contrast, a portfolio of suppliers with narrow capability scope provides fewer opportunities for developing client-specific knowledge, thus rendering market contracting less attractive. The benefits from increased interaction with law firms across multiple interfaces are evident in the following quote:

*I’m looking for them to work with us and to be, if you like, an add-on, an adjunct, to the in-house capability. I’m not looking for them to be a “them and us” relationship, and that’s the way it works. So they know our business, they know what we want. And the more we use them, the smoother the relationship and the better the results.*

Consistent with our argument, Chatain (2010) demonstrated that firms are more likely to use law firms they already employ due to their client-specific knowledge. This discussion leads us to our final hypothesis:

*H5: The broader the scope of capabilities of the external law firms employed by a firm, the lower its reliance on the internal sourcing of legal services.*

**EMPIRICAL METHODS**

**Data and sampling**

To evaluate our theoretical framework and test our hypotheses, we first collect information on the size and composition of internal legal departments of large, established firms and their relationships with
external law firms. This information is not publicly available, so we use proprietary survey and secondary data collected by ALM Legal Intelligence (ALM), a research unit within the American Lawyer Media Group. We used ALM’s annual GC survey as well as ALM reports on corporate activity, including litigation, M&A transactions, and corporate bankruptcies. These data are available from 2004 until 2011 for Fortune 500 companies.3

To be included in our sample, we require firms to have ALM annual survey data as well as data on firm operations in Compustat corporate and industry segment files. Our final dataset is an unbalanced panel consisting of 1230 observations from 285 firms (i) observed over up to eight years (t) from 2004-2011. Our reported number of observations drops to 945 though as several statistical analyses require the inclusion of one-year lagged variables.

**Dependent variable**

Consistent with other empirical work on plural sourcing (Parmigiani, 2007; Parmigiani et al., 2009), we seek comparable information on internal and external suppliers of legal services. Ideally we would have data on corporations’ total spending (or total number of hours worked) on specific legal matters, divided into the portion accounted for by in-house lawyers and that accounted for by lawyers at law firms. Such data are not publicly available as lawyers at both types of organizations treat such information as sensitive and confidential.

We do, however, have ALM survey data on the number of in-house lawyers and the number of external law firms (but not the number of external lawyers) providing outside legal work for these firms. Thus, we construct our dependent variable based on the count of in-house lawyers (as reported in the ALM annual survey) and include information on external law firms as right-hand side terms. Our dependent variable, *In-house lawyers*, is the natural log of the annual count of in-house lawyers per $100 billion in firm sales.4 Changes in the dependent variable then reflect changes in the in-house lawyer count attributed to factors unrelated to organic growth.

---

3 For 2004 and 2005 the data are only available for Fortune 250 companies.
4 Sales turnover is the best-suited proxy for firm size, compared to other measures (e.g. assets, number of employees) which are affected by industry characteristics or accounting practices. We also use the count of in-house lawyers as the dependent variable in Poisson models (see the Robustness Check section).
An increase (decrease) in the dependent variable can be attributed to two possibilities: a) increased (decreased) reliance on legal services provided by in-house lawyers rather than by outside law firms; or b) an increase (decrease) in the overall amount of legal work that needs to be undertaken on behalf of the firm. In order to focus on the former, i.e. isolate changes in the make-buy balance whilst controlling for changes in the overall size of the pie, we include controls for the overall amount of legal work in the form of SG&A and large litigation and acquisition cases (see below on Control Variables). We also employ multiple regression analyses that incorporate dynamic processes and account for possible reverse causality.

**Independent variables**

*Internationalization* (H1) is the natural log of the count of countries where each firm operates via a subsidiary in a given year. Data for this were obtained from Standard and Poor’s Capital IQ database, which includes information on corporate divisions, foreign subsidiaries and affiliates. A substantial literature in management and international business notes different measures of firm internationalization (Ramaswamy *et al.*, 1996; Sullivan, 1996). We use the count of countries as it more accurately captures the complexity associated with operating in multiple jurisdictions. Even a small representative office with nominal sales in a country requires basic knowledge of and compliance with the country’s laws and legal processes.

*R&D intensity* (H2) is R&D expenses divided by sales, both reported by Compustat.

*Advertising intensity* (H3) is advertising expenses divided by sales, both reported by Compustat.

*Supplier concentration* (H4) is the natural log of the number of external law firms undertaking legal work for the focal firm in each practice area (e.g. litigation, M&A etc.), averaged across all practice areas. A high value suggests that the focal firm has many suppliers in the same practice area, which is indicative of low external supplier concentration. We therefore take the negative value of this measure for hypothesis testing purposes as increases also represent increases in the level of concentration. Data for this variable were from ALM’s annual survey, which asks GCs to identify law firms undertaking legal work on their behalf and in which practice area.
Scope of supplier capabilities (H5). The scope of law firm capabilities is proxied by the number of practice areas in which a law firm provides services to a corporate client. In ALM’s annual survey on the relationships between Fortune 500 firms and external law firms, law firms report the number of practice areas for each corporate client they serve. First, for each law firm, we calculate the average number of practice areas per client. A small number of practice areas per client is indicative of a narrow capability scope chosen by clients. In contrast, a large number of practice areas per client suggests a broad scope of capabilities, with the law firm providing different services across various practice areas. Next, having calculated this number for each law firm, we averaged the number for all law firms providing services to the focal firm in a given year and take the natural log.

It is important to note that we do not observe the full range of relationships between law firms and their customers as the survey data is directed to Fortune 500 firms. Although this inevitably results in our measure being imperfect, we believe that it still helps us proxy the breadth of law firms’ scope of capabilities chosen by their corporate client. The fact that a top US corporation chooses to work with a law firm is indicative of capability in this area. So, although our data are incomplete, we believe we sufficiently capture the extent of capability scope.

Control variables
The panel structure of our dataset allows us to account for unobserved heterogeneity among firms in our sample. However, this methodology only controls for time-invariant firm-specific factors affecting the legal sourcing decision. We therefore include a number of time-varying firm controls including firm leverage (Debt), calculated as total debt divided by total assets, operating performance (Profitability), calculated as EBITDA divided by sales, and human capital (Employees), the natural log of the count of firm employees. We also control for the effect of Product diversification using the entropy measure (Palepu, 1985), where industry segments are defined by 4-digit SIC codes. This measure captures the effect of scope economies that are present in diversified corporations and are likely to influence the sourcing of corporate functions like legal services (Chandler, 1962; Parmigiani, 2007).

The GC’s participation in the firm’s top management team (GC on TMT) is also controlled for, as this is likely to capture her relative power and influence in the firm. We construct a dummy
variable taking the value of one when the GC has the title ‘Senior Vice President’ or ‘Executive Vice President’ and otherwise taking the value of zero. Data on the GC’s role were obtained from S&P’s Capital IQ database. In addition, we include a count of new Acquisitions started in a given firm as well as a count of new Litigation cases started in a given year where the firm was involved either as defendant or plaintiff. Both acquisitions and lawsuits are important controls as they may prompt a significant increase in the amount of legal work to be done in-house or externally. To account for the possibility that the additional work may come with some delay, we also include one-year lagged values for litigation cases ($Litigation_{t-1}$) and acquisitions ($Acquisitions_{t-1}$).

To better control for the overall amount of legal work undertaken by the firm in each year, we also use annual selling, general and administrative expenses ($SG&A$) as a proxy for legal expenses. This variable is reported by Compustat and includes all commercial expenses of operation not directly related to production, including GC office expenses and legal fees paid to law firms. We are thus able to observe changes in the legal service make-and-buy propensity as opposed to changes in the overall amount of legal work undertaken. Finally, we include a dummy variable that is equal to one when the firm is in bankruptcy proceedings. All variables used in statistical analyses and their descriptions are listed in Table 1.

-Economometric specifications-

Standard fixed- or random-effects specifications allow us to control for unobserved firm characteristics that influence the legal services make-and-buy decision. However, our data have two additional characteristics that need to be accounted for. First, the in-house lawyer count is likely to be influenced by past observations. Including a lagged value of the dependent variable as a regressor allows us to account for autocorrelation but the presence of both a lagged dependent variable and fixed-effects can render estimates inconsistent. For example, it can lead to significant downward bias on the coefficient for the lagged dependent variable (Cameron et al., 2005; Nickell, 1981). Second,

5 ALM only collects data for ‘important’ acquisitions and lawsuits as reported in trade publications. Although this probably results in losing some information, this is unlikely to bias our results as reporting criteria are similar for all firms in our sample. In addition, the biggest acquisitions and lawsuits are likely to have the most important effect on legal service sourcing dynamics.
several of our regressors may be endogenously determined. To address these concerns we employ a dynamic panel data estimator with GMM-type instruments (Arellano et al., 1991). This estimator is ideal for ‘small T, large N’ panels like ours. In addition, GMM estimators are robust to heteroskedasticity in the cross-section and unknown patterns of serial correlation (Arellano, 1987; Vogelsang, 2012).

More specifically, we estimate a statistical model of the form:

\[ l_{it} = \alpha_1 l_{i(t-1)} + \beta_1 \text{Int}' l_{it} + \beta_2 R&D_{it} + \beta_3 \text{Advert}_{it} + \beta_4 \text{Sup.conc}_{it} + \beta_5 \text{Sup.capab}_{it} + y' x_{it} + y_t + \eta_t + \nu_{it} \]

where \( l_{it} \) is the natural log of the count of lawyers divided by sales in firm \( i \) of year \( t \), \( x_{it} \) is a vector of control variables, \( y_t \) is a year effect, \( \eta_t \) is a time-invariant firm-specific effect and \( \nu_{it} \) is the error term.

The GMM estimator originally proposed by Arellano and Bond (1991) uses first differencing to remove unobservable firm-specific effects and then instruments the endogenous variables using lagged levels of the series. However, this approach is problematic in our setting as the first-differenced GMM estimator is found to have large finite sample bias and poor precision when time series are short and persistent (Alonso-Borrego et al., 1999; Blundell et al., 1998). Instead, we employ the system GMM estimator suggested by Arellano and Bover (1995) and Blundell and Bond (1998). This approach uses lagged differences as instruments for equations in levels, in addition to lagged levels as instruments for equations in first differences. The system estimator introduces an additional assumption that changes in instrumenting variables are uncorrelated with the fixed effects. All models were calculated using the ‘xtabond2’ Stata module written by Roodman (2006).

To address concerns about simultaneity bias we treat measures of supplier portfolio as endogenous while the remaining explanatory variables as exogenous. From the control variables, \( SG&A \) and \( GC \) on TMT team are modeled as endogenous. Litigation cases are also treated as endogenous given that larger legal departments may be more likely to take cases to court. The remaining control variables are treated as exogenous. Following standard treatment, we specify lagged differences one for endogenous variables (in orthogonal deviations) for the levels equation.
We use the forward orthogonal deviation transformation instead of first differencing given that our panel is unbalanced. This minimizes data loss while preserving the orthogonality among the errors (Arellano et al., 1995; Roodman, 2006). Finally, we use standard errors that are robust to heteroskedasticity and arbitrary patterns of autocorrelation within firms.

RESULTS

Descriptive statistics

Descriptive statistics and pair-wise correlations are reported in Table 2. The sample mean for *in-house lawyers* is 5.37, suggesting that firms employ on average 2.15 lawyers per US $billion in sales. In the sample, the count of in-house lawyers ranges from fewer than 10 at some firms to more than 1200 in the case of GE. Pair-wise correlations are largely intuitive. Variables corresponding to the five hypotheses for testing all exhibit the predicted sign when correlated with the dependent variable.

- Insert Table 2 about here -

Figure 1 presents the time trend for our dependent variable, *in-house lawyers*, which exhibits little change in mean values from 2004-2011. The lack of any discernible time trend in *in-house lawyers* lends support neither to insourcing (Heineman, 2010; Schwarcz, 2008) nor outsourcing (Regan et al., 2010) sides of the debate about recent trends in legal services sourcing. At best, we note a temporary increase in variance from the sample mean during the recession year of 2008.

- Insert Figure 1 about here -

Figure 2 presents descriptive insights on the role of resource co-specialization and supplier portfolio selection in shifting the make-and-buy balance. In panel (a), firms are grouped according to opportunities for resource co-specialization, as described in Hypotheses 1-3 (*Internationalization, R&D intensity, Advertising intensity*). As expected, those firms with higher scores across all three variables also have higher values of *in-house lawyers*. In panel (b) firms are grouped according to strategies for supplier portfolio selection, as described in Hypotheses 4-5 (*Supplier concentration, Scope of supplier capabilities*). As expected, those firms with scores indicative of higher contracting costs have higher values of *in-house lawyers*. The overall pattern of results in both panels of Figure 2 indicates preliminary support for Hypotheses 1-5.

- Insert Figure 2 about here -
**Regression analysis**

Table 3 presents the results from regression analysis. Columns 1-2 present fixed-effects specifications while Columns 3-5 present results from system GMM estimation. Standard fixed-effects models suggest that the lagged dependent variable, *In-house lawyers*\_^\_t-1, explains roughly 30% of variation in the dependent variable. We noted previously, however, that the lagged dependent variable estimates in fixed-effects regressions are typically biased downwards (Nickell, 1981). When the number of time-periods, \( t \), are few, the downward bias can be substantial as corrected system GMM regression results demonstrate. Coefficients on *In-house lawyers*\(^{t-1}\) jump from 0.310 and 0.305 in columns 1-2 to 0.973, 0.882 and 0.883 in columns 3-5. All lagged dependent variable estimates are significant at the 1% level.

Column 3 reports one-step system GMM results with the lagged dependent variable and controls only. Columns 4-5 are fully-specified and report one- and two-step system GMM results (the two-step estimator is corrected for downward bias in the computed standard errors (Windmeijer, 2005)). Diagnostics at the bottom of each column suggest that key estimation assumptions hold. The Arellano-Bond z test for second- and higher-order auto-correlation is not statistically significant. This is not weakened by the number of instruments as instrument count is lower than the number of cross-sectional units, in our case, firms (Roodman, 2006). Hansen’s *J* test, a robust variant of the Sargan test of overidentifying restrictions, fails to reject the null hypothesis that the instruments generated are exogenous. *P*-values on the Hansen’s *J* test are also well below 1.00, an indication that the instruments are both exogenous as a group as well as relevant to the explanation of *In-house lawyers*.

We look primarily to system GMM results in Columns 4-5 for evidence to evaluate support for our hypotheses. Results support predictions about the importance of resource co-specialization in designing plural sourcing strategies. Consistent with Hypothesis 1, we observe positive coefficients for *Internationalization* significant at the 1% level. Firms operating in more countries also have higher *In-house lawyers* consistent with a make-and-buy balance favoring internalization to take advantage of legal expertise valuable across multiple jurisdictions. Consistent with Hypotheses 2-3, we see positive coefficients of *R&D intensity* significant at the 10% level and positive coefficients of
Advertising intensity significant at the 5% level. Firms more reliant on technology and intangibles such as brands also have higher In-house lawyers consistent with a make-and-buy balance favoring internalization to take advantage of legal expertise co-specialized with other firm resources.

Recall that Hypotheses 4-5 suggest that contracting strategies with external law firms are not independent of the proportion of legal work that is externally supplied. Our analysis confirms the hypothesized negative relation between the concentration of external law firms supplying the focal firm and the propensity to internalize legal work with more in-house legal capacity. Consistent with Hypothesis 4, the coefficient for Supplier concentration is negative and significant at the 5% level. This suggests that the proportion of legal work undertaken within the firm increases with the number of external service providers. Although this result might sound counter-intuitive, it is consistent with a relational contracting logic. Similarly, the coefficient for the Scope of supplier capabilities is negative and significant at the 10% level, as described in Hypothesis 5. Working with suppliers that have a broad scope of capabilities decreases In-house lawyers and favors more external buying.

From the control variables we find that Profitability is negatively correlated with In-house lawyers. Though only a conjecture, this finding may reflect less concern with controlling fees through the threat of internalizing legal services. The coefficient for SG&A, a proxy for the overall amount of legal work undertaken by the firm, is also negative and significant. This might reflect the effect of ‘complementary’ legal resources like paralegals. More overhead resources may increase the productivity of in-house lawyers, thus reducing their numbers after accounting for firm size. Interestingly, Product diversification does not have a significant impact on the make-and-buy balance. Although one could suggest that multi-product firms are motivated to internalize legal work as they can apply their legal resources across a wider portfolio of business lines, we do not find support for this view. On the other hand, empirical measures of product diversification reported in company filings may be poor approximations of actual product markets.

Of all coefficients on various litigation and legal transaction terms, only current-year acquisitions (Acquisitions) enters negatively and at commonly-accepted levels of statistical significance. Given that corporate acquisitions require additional temporary and sometimes-
unexpected increases in specialized legal service, it is reasonable to expect that such transactions will tip the make-and-buy balance towards more external buying.

**Robustness checks**

These results prove robust to several changes in model specification and sampling. For example, we obtain consistent results in column 6 where we exclude firms from our sample that were involved either in antitrust suits or bankruptcy proceedings. We also obtain consistent results in columns 7-8 where we define the dependent variable, *In-house lawyers*, as the annual count of lawyers and re-estimate with fixed effects (in column 7) and random effects (in column 8) panel Poisson estimators. Though not reported here, results remain essentially unchanged when employing different variable definitions, for example, varying *Internationalization* to account for the number of countries with differing (from US) legal systems. They also remain the same when excluding values of the five key independent variables that may be extreme – for example, excluding *R&D intensity* values above 30%. *(Add sentence on robustness check with patent intensity)*

**DISCUSSION AND CONCLUSION**

Recent strategy research has increased our understanding about when plural sourcing may emerge, but that begs the question of where firms will strike the make-and-buy balance once firms resort to this sourcing strategy. Our study begins to answer this question with a theory highlighting two determinants for differing balance points, namely resource co-specialization and supplier portfolio selection. These determinants are underpinned by synthesizing capabilities and transaction cost logics. Broad sample statistical evidence provides robust support to this framework in a context that lends itself well to production of very similar services by both internal and external players in the form of corporate legal services.

Empirical results support the view that, when making and buying legal services, firms with more resource co-specialization opportunities tip the balance in favor of insourcing while firms with supplier portfolio selection strategies reducing the costs of market contracting tip the balance in favor of outsourcing. Dynamic panel regression and related analyses uncovered broad-sample statistical

---

6 These results are available from the authors on request.
support for these basic trends. We noted statistically significant increases in in-house lawyers with increases in the number of countries where the firm operates and with increases in R&D and advertising intensity. We also noted statistically significant decreases in in-house lawyers with increasing concentration and capability scope among external law firms. These results proved robust to reasonable changes in sampling, estimation strategy and variable measurement. Overall, these findings provide broad-based support for our make-and-buy framework explaining where the balance for firms is likely to be struck.

**Implications for organization and strategy research**

Our study has important implications for strategy research. First, we advance plural sourcing research from questions about whether and when it is employed at all to questions regarding the balance of make-and-buy modes and how such modes differ across firms. We develop hypotheses about the design of plural sourcing strategy based on dynamics related to opportunity exploitation and strategic decision-making. We highlight factors denoting geographic, technological and intangible asset heterogeneity among firms. We also highlight factors related to alternative contracting regimes. If strategy is fundamentally concerned with how firms differ on key factors (Nelson, 1991), then our study advances make-and-buy research with a sharp strategy focus.

Second, we highlight the endogeneity of transaction costs to decisions relating to the design of supplier portfolio. Of course, transaction costs are determined at least partly, or even primarily, by transaction characteristics like asset specificity and uncertainty (Williamson, 1985). Yet, we demonstrate here how firms are able to ‘manipulate’ these and adjust their sourcing strategies accordingly. Theories of the firm will benefit by explicitly accounting for this mechanism in their study of firm boundary. More generally, our paper is a good example of combining insights from TCE and RBV in the context of plural sourcing. Our study then contributes to the emerging consensus on the importance of accounting for the simultaneous impact of transaction costs and capabilities to further our understanding of firm boundaries (Argyres et al., 2012a; Argyres et al., 2012b; Jacobides et al., 2012).

Third, these co-specialization opportunities exist for resources lying in different corporate functions. Thus, whilst our empirical context is the legal department as a focal corporate function,
other corporate functions also engage in plural sourcing by balancing internal and external resources within the firm. In particular, in-house accountants work alongside outside accounting and audit firms, in-house engineers with outside engineering consultant firms, in-house marketing departments with marketing and PR agencies, and internal strategic planners with outside consulting firms. In these and other contexts, we think our theoretical framework can provide researchers with relevant guides for making inferences about make-and-buy strategies.

A final implication relates to methods. We suspect that the dearth of research on sourcing decisions in legal services is due to the absence of good data and the difficulty in making causal inference. Despite their still relatively short time-series (i.e. seven years) and limited cross-sectional coverage (i.e. Fortune 500 firms), our panel data provide us with advantages relative to single firm case narratives (e.g. Smith, 2001) or one-time cross-sectional surveys (Schwarcz, 2008). Most importantly, the panel nature of our data permits us to use dynamic panel estimators and address challenges of mutual causation.

**Implications for practice**

The findings of this study draw practitioners’ attention to a few, yet important, aspects of sourcing decisions in legal services. First, in legal circles, the last two decades have seen vigorous debate on the proper size and scope of work for in-house lawyers. One view championed by the US giant General Electric (Heineman, 2010; Smith, 2001), argues for substantially increasing the number of in-house lawyers and giving them primary if not exclusive responsibility for legal transactions and litigation cases. In-house lawyers are expected to increasingly play a dual role of being a lawyer and a business partner (Green, 2012). The chief legal officer (CLO) could become ‘one of the mightiest figures in the C-suite’. The 2002 Sarbanes-Oxley Act, the 2010 Dodd-Frank Act and the 2008 financial crisis have likely heightened the need for compliance and risk management, making companies turn to lawyers to prevent corporate bosses from going to jail and to fend against endless threats of lawsuits. Our study indicates that whilst the power and status of GC may be on the rise, the resulting trend towards insourcing leads to business benefits only if resource co-specialization

benefits are exploited. In other words, our broad sample study demonstrates that insourcing is less desirable when there are no co-specialization opportunities.

Second, make-and-buy strategies are not a transition towards the dominance of one or the other mode. Instead, they are self-reinforcing, sustainable systems of service production and delivery, closely supported by the nature of relational contracts with external suppliers. The plural sourcing of legal services, including the use of law firms and other service providers such as LPO firms, is now well recognized in legal practice and scholarship (Regan et al., 2010; Sako, 2009; Susskind, 2008). But to date, the TCE-focused analyses in legal research (e.g., Regan et al., 2010) have not been able to explain the co-existence of multiple sourcing modes. Our plural sourcing framework provides a clear rationale for multi-sourcing. It also gives a limited, yet significant, range of factors that affect the mix of multiple sourcing modes. In particular, our findings suggest that ‘panel reviews’ leading to the selection of fewer law firms can co-exist with heavy reliance on outsourcing.

**Limitations and further research**

A number of limitations of this study are worth noting. The first limitation in our theoretical framework is self-imposed to simplify the analysis. Plural sourcing of legal services in its full manifestation can mean buying from more than just law firms we observed. Think, for example, of ‘contract’ lawyers, or non-legal professional services firms such as accounting firms and management consultancies with some legal expertise. By limiting our analysis to the co-existence of ‘make’ and ‘buy’ only from law firms, we may not have accounted for the full range of outside sources a focal firm might ‘buy’ to replace or complement internal capabilities. Future research might account for this by noting other professional firms providing significant services to the large established firms we studied.

A second limitation relates to data availability. Our study links the number of in-house lawyers to the number of outside law firms, not the number of external counsel or hours spent by these lawyers. In an ideal world, we would have better data on internal and external legal personnel or hours worked. We deal with this limitation by including a number of control variables and employing a dynamic panel data estimator. Future research may see more information available on the identities of such outside law firms permitting a closer matching of internal and external personnel and hours.
A third limitation relates to sampling and generalizability. We think our theoretical framework and evidence can be generalized to other large, established firms that have the internal resource and structure enabling them to make a genuine choice in the design of plural sourcing. But this leaves other contexts to which we are reluctant to apply our findings without modification. The discount consumer services purchasing giant, Groupon, was founded in 2008, but did not have a full-time in-house counsel until 2011 when it already operated in 48 countries generating $1.6 billion in annual revenue.\textsuperscript{8} Groupon’s history suggests that explanation of plural sourcing strategies for legal services in entrepreneurial firms may require quite different framework assumptions and empirical methods to account for confounding effects related to organizational newness and professionalization.

\textbf{Conclusion}

We began this study by asking why firms differ in the design of their plural sourcing strategies. We end it with a call for strategy researchers to continue developing plural sourcing theoretical frameworks and evidence relevant to different organizational forms and different product- and service-producing activities. We chose legal services and demonstrated how such frameworks and evidence could help us understand the relative size of in-house legal departments, an exercise quite different from what Shakespeare’s character, Dick the Butcher, wishes for lawyers in \textit{Henry VI, Part II, Act IV, Scene 2}.\textsuperscript{9} Even so, we think that the counting exercise would further our understanding of make-and-buy strategies for professionals, including not only lawyers but also accountants, financial analysts, consultants, engineers, and marketing specialists. Moreover, strategy scholars have undervalued the analysis of what Porter (1980) refers to as “support activities” to the firm. Our study suggests that they can be essential to the firm’s strategy for gaining and maintaining competitive advantage. In this context, we should count all the inside and outside professionals as part of the search for an optimal make-and-buy balance in corporate functions. We can enrich research on firm


\textsuperscript{9} Dick suggests to Jack Cade, the leader of a popular revolt against Henry VI in 1450, that “[t]he first thing we do, let’s kill all the lawyers.”
boundaries by placing plural sourcing decisions in corporate functions on a par with vertical (dis)integration decisions for the primary activities of the firm.

REFERENCES


Table 1. Variable names, descriptions, sources and expected impact on in-house lawyer counts, 2004-2011

<table>
<thead>
<tr>
<th>Variable name</th>
<th>Variable description</th>
<th>Source</th>
<th>Expected impact on dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-house lawyers</td>
<td>Natural log of the number of lawyers working in the legal department of firm i in year t divided by sales in US$100 billions.</td>
<td>ALM Legal Intelligence</td>
<td>Dependent variable</td>
</tr>
<tr>
<td>Internationalization</td>
<td>Natural log of the number of countries where firm i has subsidiaries in year t</td>
<td>S&amp;P Capital IQ</td>
<td>Positive (H1)</td>
</tr>
<tr>
<td>R&amp;D intensity</td>
<td>R&amp;D expense divided by sales for firm i in year t</td>
<td>Compustat</td>
<td>Positive (H2)</td>
</tr>
<tr>
<td>Advertising intensity</td>
<td>Advertising expense divided by sales for firm i in year t</td>
<td>Compustat</td>
<td>Positive (H3)</td>
</tr>
<tr>
<td>Supplier concentration</td>
<td>Negative of the natural log of the average number of law firms providing legal services in each different practice area for firm i in year t</td>
<td>ALM Legal Intelligence</td>
<td>Negative (H4)</td>
</tr>
<tr>
<td>Scope of supplier capabilities</td>
<td>We calculate the average number of practice areas per client for each law firm in year t.</td>
<td>ALM Legal Intelligence</td>
<td>Negative (H5)</td>
</tr>
<tr>
<td>GC on TMT</td>
<td>0-1 dummy taking the value of one when the firm i’s general counsel is senior or executive vice president in year t</td>
<td>S&amp;P Capital IQ</td>
<td>Control variable</td>
</tr>
<tr>
<td>Debt</td>
<td>Total debt divided by total assets in US$ millions for firm i in year t</td>
<td>Compustat</td>
<td>Control variable</td>
</tr>
<tr>
<td>Profitability</td>
<td>Operating income (EBITDA) divided by sales in US$ millions for firm i in year t</td>
<td>Compustat</td>
<td>Control variable</td>
</tr>
<tr>
<td>Employees</td>
<td>Natural log of the number of employees in 1,000s for firm i in year t</td>
<td>Compustat</td>
<td>Control variable</td>
</tr>
<tr>
<td>Product diversification</td>
<td>Entropy measure calculated as Div = ( \sum_j [P_j \times \ln(1/P_j)] ) where P_j is the share of sales attributed to industry segment j for firm i in year t.</td>
<td>Compustat</td>
<td>Control variable</td>
</tr>
<tr>
<td>SG&amp;A</td>
<td>Natural log of Selling, General &amp; Administrative Expenses: Indirect commercial expenses of operation incurred in the regular course of business, including legal expenses in US$ millions for firm i in year t.</td>
<td>Compustat</td>
<td>Control variable</td>
</tr>
<tr>
<td>Litigation</td>
<td>Number of significant litigation cases where firm i in year t was either a defendant or plaintiff.</td>
<td>ALM Legal Intelligence</td>
<td>Control variable</td>
</tr>
<tr>
<td>Acquisitions</td>
<td>Number of significant acquisitions undertaken by firm i in year t.</td>
<td>ALM Legal Intelligence</td>
<td>Control variable</td>
</tr>
<tr>
<td>Bankruptcy</td>
<td>0-1 dummy taking the value of one when firm i in year t is in bankruptcy proceedings.</td>
<td>ALM Legal Intelligence</td>
<td>Control variable</td>
</tr>
</tbody>
</table>

Table 2. Descriptive statistics and pairwise correlations for analyses of in-house lawyer counts, 2004-2011

<table>
<thead>
<tr>
<th>Variable</th>
<th>Descriptive statistics</th>
<th>Pair-wise correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>St.D.</td>
</tr>
<tr>
<td>1) In-house lawyers</td>
<td>5.37</td>
<td>1.10</td>
</tr>
<tr>
<td>2) Internationalization</td>
<td>2.24</td>
<td>1.48</td>
</tr>
<tr>
<td>3) R&amp;D intensity</td>
<td>0.02</td>
<td>0.05</td>
</tr>
<tr>
<td>4) Advertising intensity</td>
<td>0.01</td>
<td>0.03</td>
</tr>
<tr>
<td>5) Supplier concentration</td>
<td>-1.21</td>
<td>0.40</td>
</tr>
<tr>
<td>6) Scope of capabilities</td>
<td>0.43</td>
<td>0.14</td>
</tr>
<tr>
<td>7) GC on TMT</td>
<td>0.79</td>
<td>0.41</td>
</tr>
<tr>
<td>8) Debt</td>
<td>0.04</td>
<td>0.07</td>
</tr>
<tr>
<td>9) Profitability</td>
<td>0.16</td>
<td>0.13</td>
</tr>
<tr>
<td>10) Employees</td>
<td>3.67</td>
<td>1.11</td>
</tr>
<tr>
<td>11) Diversification</td>
<td>0.90</td>
<td>0.36</td>
</tr>
<tr>
<td>12) SG&amp;A</td>
<td>6.64</td>
<td>2.93</td>
</tr>
<tr>
<td>13) Litigation</td>
<td>0.13</td>
<td>0.44</td>
</tr>
<tr>
<td>14) Acquisitions</td>
<td>0.09</td>
<td>0.33</td>
</tr>
<tr>
<td>15) Bankruptcy</td>
<td>0.00</td>
<td>0.06</td>
</tr>
</tbody>
</table>

N=945, * statistically significant at the 5% level
<table>
<thead>
<tr>
<th>Dep. Variable</th>
<th>(1) Fixed effects</th>
<th>(2) Fixed effects</th>
<th>(3) System GMM</th>
<th>(4) System GMM</th>
<th>(5) System GMM</th>
<th>(6) System GMM</th>
<th>(7) FE Poisson</th>
<th>(8) RE Poisson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagged dep. variable</td>
<td>0.309** (0.000)</td>
<td>0.300** (0.000)</td>
<td>0.974** (0.000)</td>
<td>0.881** (0.000)</td>
<td>0.881** (0.000)</td>
<td>0.883** (0.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explanatory variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internationalization</td>
<td>0.049</td>
<td>0.038** (0.000)</td>
<td>0.036* (0.013)</td>
<td>0.034* (0.012)</td>
<td>0.093 (0.354)</td>
<td>0.265** (0.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R&amp;D intensity</td>
<td>2.836* (0.027)</td>
<td>0.725† (0.060)</td>
<td>0.728‡ (0.041)</td>
<td>0.863* (0.011)</td>
<td>0.782** (0.354)</td>
<td>2.243** (0.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advertising intensity</td>
<td>0.566</td>
<td>2.250* (0.013)</td>
<td>2.222* (0.061)</td>
<td>2.249* (0.006)</td>
<td>2.137** (0.000)</td>
<td>2.050** (0.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplier concentration</td>
<td>-0.059† (0.065)</td>
<td>-0.116* (0.043)</td>
<td>-0.117* (0.042)</td>
<td>-0.110† (0.074)</td>
<td>-0.094* (0.000)</td>
<td>-0.074** (0.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scope of supplier capabilities</td>
<td>-0.170</td>
<td>-0.321† (0.165)</td>
<td>-0.321† (0.077)</td>
<td>-0.326† (0.074)</td>
<td>-0.178** (0.000)</td>
<td>-0.310** (0.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GC on TMT</td>
<td>0.088* (0.041)</td>
<td>0.078† (0.073)</td>
<td>0.048 (0.671)</td>
<td>0.040 (0.414)</td>
<td>0.040 (0.423)</td>
<td>0.065 (0.174)</td>
<td>0.154** (0.000)</td>
<td>0.139** (0.000)</td>
</tr>
<tr>
<td>Debt</td>
<td>-0.102</td>
<td>-0.190</td>
<td>-0.148</td>
<td>-0.205</td>
<td>-0.199</td>
<td>-0.208</td>
<td>-0.110</td>
<td>-0.204</td>
</tr>
<tr>
<td>Profitability</td>
<td>-1.080** (0.000)</td>
<td>-1.024** (0.000)</td>
<td>-0.482* (0.026)</td>
<td>-0.302* (0.045)</td>
<td>-0.302* (0.045)</td>
<td>-0.261† (0.077)</td>
<td>-0.045</td>
<td>-0.179* (0.030)</td>
</tr>
<tr>
<td>Employees</td>
<td>-0.343** (0.000)</td>
<td>-0.340** (0.000)</td>
<td>-0.016</td>
<td>-0.015</td>
<td>-0.014</td>
<td>-0.021</td>
<td>0.029</td>
<td>0.010</td>
</tr>
<tr>
<td>Product diversification</td>
<td>0.019</td>
<td>0.009</td>
<td>0.289** (0.000)</td>
<td>0.021</td>
<td>0.024</td>
<td>0.012</td>
<td>0.036</td>
<td>0.105** (0.000)</td>
</tr>
<tr>
<td>SG&amp;A</td>
<td>-0.119** (0.005)</td>
<td>-0.120** (0.007)</td>
<td>-0.015</td>
<td>-0.031*</td>
<td>-0.032*</td>
<td>-0.027†</td>
<td>0.085**</td>
<td>-0.050** (0.000)</td>
</tr>
<tr>
<td>Litigation</td>
<td>-0.028† (0.092)</td>
<td>-0.041* (0.012)</td>
<td>0.096† (0.054)</td>
<td>0.043</td>
<td>0.044</td>
<td>0.039</td>
<td>-0.000</td>
<td>-0.009</td>
</tr>
<tr>
<td>Acquisitions</td>
<td>-0.006</td>
<td>-0.018</td>
<td>-0.035</td>
<td>-0.071*</td>
<td>-0.071*</td>
<td>-0.088**</td>
<td>-0.008</td>
<td>-0.040** (0.000)</td>
</tr>
<tr>
<td>Bankruptcy</td>
<td>-0.465* (0.844)</td>
<td>-0.467† (0.598)</td>
<td>-0.499</td>
<td>-0.339</td>
<td>-0.343</td>
<td>0.039</td>
<td>0.004</td>
<td></td>
</tr>
<tr>
<td>Sales</td>
<td>0.110** (0.485)</td>
<td>0.286** (0.057)</td>
<td>0.376</td>
<td>0.422</td>
<td>0.415</td>
<td>0.368</td>
<td>0.936</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>5.867** (0.000)</td>
<td>5.750** (0.000)</td>
<td>0.055</td>
<td>0.748**</td>
<td>0.745**</td>
<td>0.731**</td>
<td>0.637*</td>
<td></td>
</tr>
<tr>
<td>Year dummies</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>N (number of firms)</td>
<td>945(285)</td>
<td>945(285)</td>
<td>945(285)</td>
<td>945(285)</td>
<td>945(285)</td>
<td>945(285)</td>
<td>945(285)</td>
<td>945(285)</td>
</tr>
<tr>
<td>Wald χ² (R²)</td>
<td>(0.34)</td>
<td>(0.36)</td>
<td>2720.7</td>
<td>6334.5</td>
<td>6940.4</td>
<td>6593.1</td>
<td>255.8</td>
<td>404.5</td>
</tr>
<tr>
<td>Arellano-Bond test AR(1)</td>
<td>-3.81** (0.65)</td>
<td>-4.10** (0.65)</td>
<td>-3.89**</td>
<td>-4.20**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arellano-Bond test AR(2)</td>
<td>0.65</td>
<td>-0.01</td>
<td>-0.01</td>
<td>-0.01</td>
<td>-0.01</td>
<td>-0.01</td>
<td>-0.87</td>
<td></td>
</tr>
<tr>
<td>No of instruments</td>
<td>126</td>
<td>269</td>
<td>269</td>
<td>269</td>
<td>269</td>
<td>269</td>
<td>268</td>
<td></td>
</tr>
<tr>
<td>Hansen test</td>
<td>114.9</td>
<td>219.7</td>
<td>219.7</td>
<td>219.7</td>
<td>219.7</td>
<td>219.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hansen test p-value</td>
<td>0.28</td>
<td>0.87</td>
<td>0.87</td>
<td>0.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p-values in parentheses, † p ≤ 10%, * p ≤ 5%, ** p ≤ 1%
Figure 1. In-house lawyers across time
Average values and variation of in-house lawyers across years (in-house lawyers defined as lawyers per sales, see Table 1). The dots represent the mean, the shaded area represents the range of plus/minus one standard deviation and the outer fence represents the range of plus/minus two standard deviations.

Figure 2. In-house lawyers, resource co-specialization and supplier portfolio selection
Average values and variation of in-house lawyers (in-house lawyers defined as lawyers per sales, see Table 1) vis-à-vis opportunities for resource co-specialization, panel (a), and supplier portfolio selection’s impact on the costs of contracting, panel (b). For panel (a), the first group (low) includes firms with scores below the median observation across all independent variables (internationalization, R&D intensity and advertising intensity). The third group includes firms with scores above the median observations across all independent variables while the second group is the remaining firms. For panel (b), the first group (low) includes firms with scores above the median for supplier concentration and scope of supplier capabilities. The third group (high) includes firms with scores below the median for supplier concentration and scope of supplier capabilities while the second group is the remaining firms.