2012

Global Production Networks, Relational Proximity, and the Sociospatial Dynamics of Market Internationalization in Bolivia's Wood Products Sector

James T. Murphy
Clark University

Global production networks, relational proximity, and the sociospatial dynamics of market internationalization in Bolivia's wood products sector

In press for 2011 publication in *Annals of the Association of American Geographers*

April 23, 2010

James T. Murphy (corresponding author)
Graduate School of Geography
Clark University
950 Main Street
Worcester, MA 01610
USA

+1 508-793-7687 (phone)
+1 508-793-8881 (fax)
jammurphy@clarku.edu

Please cite this article as follows:

Murphy, J.T. (in press) Global production networks, relational proximity, and the sociospatial dynamics of market internationalization in Bolivia's wood products sector, *Annals of the Association of American Geographers*.

Global Production Networks, Relational Proximity, and the Sociospatial Dynamics of Market Internationalization in Bolivia's Wood Products Sector

James T. Murphy

Clark University Graduate School of Geography

This article advances conceptualizations of global production networks (GPN) through an analysis of the relational processes that firms in Bolivia's growing wood products industry use to build ties to international markets. Both large and small-scale manufacturers are increasingly internationalizing their operations in response to the global demand for tropical hardwoods and decentralization of control over the country's forest resources. These firms use four different types of production networks and networking practices to develop international market ties. Each of these networks is distinguishable by its entry barriers, value-creation possibilities, upgrading strategies, and by the cognitive, social, and cultural factors that influence who participates in them. There are important differences in the strategies used, and challenges faced by Bolivian suppliers striving to develop relational proximity (i.e., a mutual alignment of interests) to international buyers or clients. These differences—in the role of power, positionality, social interactions, and local factors—create important discontinuities between the production networks that require distinct policy interventions. Beyond their policy implications, the findings contribute to theories on the role and dynamics of agency, power, and embeddedness in GPN and raise important epistemological questions for economic geographers.

Key Words: global production networks, relational proximity, sociospatial practice, wood products, Bolivia

Since the 1990s, studies of economic globalization have focused a great deal of attention on the role of commodity chains, value chains, and production networks in structuring the relationships between Northern consumers and Southern producers (e.g., Gereffi 1994; Gereffi, Humphrey, and Sturgeon 2005; Gibbon and Ponte 2005). This research has contributed significantly to our understanding of how trade relationships and the production systems of transnational corporations (TNC) are organized and reorganized in response to innovations in logistics, telecommunications, and the institutions governing the world economy. In economic geography, these ideas have been advanced most significantly through research on global production networks or GPN (Henderson et al. 2002; Coe et al. 2004; Coe, Dicken, and Hess 2008). GPN researchers analyze the horizontal and vertical networks that interconnect producing firms and non-firm actors (e.g., consumers, labor, civil society, and the state) and assess how these relationships shape the organization of industries, the global distribution of value-added activities, and regional development processes.

Although the GPN approach has made important contributions to our understanding of how inter-firm and inter-regional relationships are being restructured through fragmented global production systems, limitations remain. GPN studies are particularly limited by their lack of an effective conceptualization of agency and their emphasis on the role of leading TNC in organizing GPN. Needed is a more grounded and richer model of agency through which we can better understand the dynamics of network development processes, particularly those driven by

agents (e.g., businesspeople, entrepreneurs) managing smaller-scale enterprises based in developing economies. Such a conceptual shift will facilitate improvements in our understandings of how GPN relationships emerge and how developing regions might develop more profitable and progressive relationships to international markets.

This article confronts these concerns through an analysis of the networks linking Bolivian wood product manufacturers to international buyers of timber, decking, furniture, and flooring. Emphasis is on understanding how Bolivian suppliers of wood products develop relational proximity to domestic and international buyers, a process conceptualized as an alignment of the interests between two parties achieved through particular combinations of power relations, social performances, trust, and the effective management of local (Bolivian) factors. Through an analysis of these relational practices, the article identifies four discontinuous kinds of networks in Bolivia's wood sector, each distinguishable from the others by material factors such as capital and technological requirements, local factors such as access to resources, industrial policies, and forest management regulations, and relational factors such as cultural identities, social performance strategies, and power asymmetries. By identifying and detailing these discontinuities, the article shows how multiple production networks can coexist within the same industry and country, each sustained by distinct combinations of material, cognitive, and socio-cultural factors.

The findings are significant theoretically, epistemologically, and in terms of their policy implications. Although material factors (e.g., entry barriers, technologies, finance) may be commonly understood and addressed in the extant literatures on upgrading and production-network integration, it is also critical to have a detailed understanding of the relational factors that influence who gains access to a GPN and how they participate in it. The study also demonstrates how power, in both its socially dynamic and structural forms, can be better accounted for and it raises questions about how embeddedness is conceptualized in the GPN literature. Epistemologically, the article calls for more research on GPN that begins with firms in developing regions and that may, or may not, end with leading TNC and mass consumers based in core economies. With respect to policy, industrial development initiatives in Bolivia and beyond can be improved if policymakers recognize that there are multiple trajectories for market internationalization.

The remainder of the article is organized as follows. There is first a brief review and constructive critique of the GPN literature followed by a description of the study's conceptual framework. Bolivia's political economy and wood products sector are then described followed by a summary of the methodology. The empirical findings are then presented, as a detailed discussion of each type of network and relational proximity development strategy. A results section follows wherein the network discontinuities are summarized and the theoretical significance is detailed. The article closes with a brief discussion of policy and epistemological implications.

Global Production Networks

The GPN approach is a "broad relational framework" for understanding contemporary forms of industrial organization and their relationship to local or regional development processes (Coe, Dicken, and Hess 2008, 272). Relationality is manifest in the interdependencies and structural power differences between different points or actors in a GPN. Such relationships determine how much value is created, enhanced, and captured at each node (i.e., a firm, place, or

region) (Coe et al. 2004). Viewed in this manner, regional development becomes a globalized relational process dependent upon the ability of local actors (i.e., firms, the state, labor, consumers, and civil society) to enhance the value of ties to international markets. In contrast to global value chain (GVC) research, GPN analysis extends beyond the topology of the value chain in order to understand the topographical implications for regions or localities where TNCs "touch-down" with production sites, foreign direct investment (FDI), or distribution centers.[1]

The GPN concept has three principal elements: value, power, and embeddedness (Henderson et al. 2002; Coe et al. 2004; Johns 2006). Value is created by firms and non-firm actors (e.g., labor movements, civil society) in the network and supplying regions strive to enhance and capture more value through upgrading and the right institutional conditions. Lead or focal firms too strive to increase their value-added through retail strategies, technological innovations, and supply-chain management techniques that reduce the costs of sourcing inputs or end products in the GPN. Power is thus multi-scalar in flow, derived from local and non-local structural conditions (i.e., markets, political institutions) and mobilized by the firms and non-firm actors who participate in a GPN. These power relations play a key role in the creation of the "relational geometries" that constitute GPN (Yeung 2005). Per Hess (2004), embeddedness is viewed from three perspectives or scales—the local or territorial, the network or translocal, and the societal—and researchers strive to understand how an actor's embeddedness in local, translocal, or societal institutions qualitatively affects its ability to build and benefit from ties to a GPN (e.g., Coe et al. 2004; Hess and Coe 2006; Bridge 2008; Hughes, Wrigley, and Buttle 2008).

GPN approaches make important contributions to our understandings of new forms of supply-chain governance, spatially fragmented production systems, and the relationships between globalization and regional development. Limitations remain, however, two of which are significant here. First, although the GPN framework confronts critiques that claim network studies underestimate or inadequately address the role of structural power (e.g., Sheppard 2002; Peck 2005; Hadjimichalis and Hudson 2006), conceptualizations of power in GPN research insufficiently address the complex and contingent socioeconomic processes at work in creating network structures. Instead, power's role is distilled into a game of "rule-taking" whereby local firms are allowed to participate in a global network only if they conform to the demands of leading TNC or, as in the case of China, if a powerful state "obliges" investing TNC to source from local firms (e.g., see Liu and Dicken 2006). Such conceptualizations, while reasonable for understanding some GPN (e.g., those organized by leading retail TNC such as Walmart), tell us relatively little about the *processes* through which ties between firms and regions are created, reproduced, destroyed, and/or modified over time and space. This is significant because the global economy is becoming increasingly variegated through new kinds of interregional relationships (e.g., China's relationship to African economies) and by value chains where large firms do not necessarily dominate or control their smaller-scale suppliers (Coe, Dicken, and Hess 2008). In this context, transnational forms of entrepreneurship are becoming better able to exploit transnational differences in new and novel ways.

> Transnationalizing entrepreneurial networks increasingly 'cut through' national and regional boundaries in highly differentiated ways, influenced in part by different national business systems and local sociocultural conditions, to create network structures that are discontinuously territorial. (Yeung 2009, 225)

The second concern is an empirical one and relates to the fact that, in application, GPN research remains somewhat abstract and only partially linked to the real-world circumstances faced by actors in production networks. Missing is a clearer, empirically informed, exposition of how different production network configurations develop through the actions of agents such as entrepreneurs, labor movements, state agencies, and civil society organizations (e.g., non-governmental organizations) whose roles may be hidden by research that focuses on the global scale and/or the activities of leading TNC. As Coe, Dicken, and Hess (2008, 290) note:

> it is in the empirical sphere that most needs to be done if the concept is to be more than an interesting abstraction. We need carefully designed and constructed but essentially grounded research into the entire structure of GPN.

If GPN frameworks are to capture globalization's complex dynamics more effectively, they need to do more than explain the actions and agencies of large-order firms and non-firm actors (e.g., national governments).[2] The framework developed and applied here heeds these concerns by advancing a more agency-, power-, and process-sensitive approach to studies of how firms based in developing countries gain access to, and derive benefits from, alternative (i.e., non-TNC driven) kinds of GPN. In a broader sense, and following Murphy (2008) and Pollard et al.'s (2009) recent interventions, the article seeks to demonstrate how a re-oriented view of the world economy, one centered on the knowledges, networks, and practices of people and firms disconnected from highly visible and powerful GPN, can yield important insights regarding contemporary economic globalization while elucidating the complex and dynamic industrial worlds constructed and inhabited by (post-colonial) subjects who are often poorly accounted for in mainstream economic-geographical research.

Networking Practices: A Dynamic-Relational View on GPN Integration

The conceptual framework developed here draws inspiration from studies of the relational or sociospatial processes through which production networks and other forms of transnational economic coordination evolve (Amin 2002; Bathelt and Glückler 2003; Glückler 2005; Yeung 2005; Bathelt 2006; Grabher 2006; Jones 2008; Yeung 2009). In these works, relationality is a process through which network linkages are established, sustained, and reorganized over time and space by the power struggles between, and the social networking strategies of, businesspeople located in a diversity of places or regions. These strategies are viewed here as network development practices – the everyday social interactions and spatial relations that constitute economic action within and between places. It is through mutually coherent, recognizable, and legitimated practices that businesspeople develop relational proximity with each other.

Relational proximity is "the degree to which individuals, firms, and communities are 'bound by relations of common interest, purpose, or passion, and held together by routines and varying degrees of mutuality'" (Amin and Cohendet 2004, 74; Murphy 2006, 430). Relational proximity should not be conflated with deep trust or horizontality but is instead based on common interests, familiar practices and routines, shared identities, and mutual recognition of each other's positionality in a relationship. Four factors play a key role in determining whether interacting agents can become relationally proximate: perceptions of legitimacy or trustworthiness, the quality of social performances, adherence to mutually recognizable and appropriate behavior patterns, and the outcomes of shared experiences. The factors are not

mutually exclusive and each reflects a different aspect or dimension of the relationship building process. Moreover, these perceptions, interactions, and experiences occur in particular kinds of social spaces (e.g., trade fairs, sales presentations, phone conversations, and/or causal encounters) and are influenced by factors/forces situated at different geographical scales (e.g., regulatory institutions, business conventions, and/or sources of knowledge). By conceptualizing relational proximity in this manner, it is possible to situate local, national, or global factors within the context of a translocal or transnational relationship.

At their core, network development practices are power struggles over the terms and conditions of a relationship. Power emerges or is mobilized as businesspeople strive to align their interests in order to achieve their respective goals or objectives (Latour 1986; Emirbayer 1997; Murdoch 2006). The source of this power can be found at two scales. At the micro or cognitive scale, an individual's sense of empowerment and control over her/his business dealings can play an important role in the alignment process (Murphy 2006). This power comes with one's confidence in her/his identity and ability to overcome material and structural obstacles (e.g., based on class or gender) in order to take risks in business or to trust an outsider. Structurally, power is derived from an individual or firm's positionality in relevant social and economic systems, especially the markets and institutions that regulate or govern an industry. An actor's positionality stems from her/his identities, experiences, and perspectives and it emerges relationally through social interactions and in response to structural conditions that create power asymmetries between different groups of people (Sheppard 2002; Leitner, Sheppard, and Sziarto 2008).

Figure 1 summarizes the conceptual framework as it relates to buyer-supplier relationships in a GPN. At the center is the network linkage that connects two firms situated in different regions. This relationship, if successful, is established and sustained by interactions, negotiations, and power struggles through which individuals and firms develop relational proximity. Local factors on the supply and demand-side are drawn on in the relationship development process and the characteristics of these depend on the GPN in question. For example, some firms in GPN benefit from localization economies or close ties to state actors in supplying regions (e.g., Coe et al. 2004; Bridge 2008), while others are shaped primarily by consumer or demand-side factors such as quality standards, trade regulations, and/or pricing expectations (e.g., Klooster 2006; Hughes, Wrigley, and Buttle 2008). In the discussion that follows, this conceptualization is applied to an analysis of the different kinds of networks linking Bolivia's wood products industry to international markets. The findings show how discontinuities between production networks and relational practices shape industrial development processes in Bolivia and beyond.

<INSERT FIGURE 1 HERE>

Bolivia's Political Economy and Wood Products Industry

Although Bolivia is one of South America's poorest countries, its economy has internationalized significantly in recent years primarily through outward trade and inward FDI in the minerals and agro-industrial sectors. Beginning in the 1980s, the country implemented a series of (neoliberal) economic reforms aimed at liberalizing trade, controlling inflation, decentralizing fiscal management, and privatizing state-owned enterprises (Sachs 1987; Kohl 2002; 2006). Although the reforms promoted growth in some industrial sectors, namely

agricultural and petroleum resources, they marginalized others (e.g., mining), exacerbated long-standing inequalities between indigenous peoples and mixed race or *mestizo* elites, and caused significant social unrest, environmental degradation, and political turmoil (Thiele 1995; Laurie and Marvin 1999; Gill 2000; Hindery 2004; Schroeder 2007). Bolivia's now famous social movements, organized around labor, ethnicity, and access to basic services (e.g., water), effectively challenged neoliberal reforms (see Assies 2003; Kohl 2006; Perreault 2006; Eaton 2007) and in late 2005 a new government was elected, led by Evo Morales and the MAS (*movimiento al socialismo*) party.

Morales and the MAS have sought to restructure Bolivia's political economy into a "pluri-nationalistic" society where indigenous groups are formally recognized and given greater political power. While much attention has been paid to their social and political dimensions (e.g., Schroeder 2007; Larson et al. 2008), far less has been given to questions about the economic viability of the MAS government's policies. This is important because the government is emphasizing the potential for small enterprises and cooperatives to develop into successful pro-poor industries.

> The State will protect and promote national production, in particular from cooperatives, associations and communities of producers that have poorly developed production systems. … The state will privilege and harness the potential of small producers, will encourage associative activities and will generate qualitative changes in social and economic development. (Government of Bolivia 2006a, 146-147)

Although the Bolivian government and the donor community have provided rhetorical and material support for small enterprises in the past (e.g., Danish International Development Agency n.d.; Inter-American Development Bank 2002; Swiss Agency for Development and Cooperation 2004), the MAS government is ideologically more committed to industrial development policies that emphasize the role of associations and cooperatives of small enterprises, particularly those operated by indigenous peoples from the *altiplano* and highland regions. Moreover, Morales, with support from Cuba and Venezuela, has promoted the People's Trade Agreement which seeks to restructure international trade relationships in a manner that supports indigenous peoples, values communitarian ideals, and recognizes the legacy of colonialism and imperialism (Alliance for Responsible Trade 2009). Given these priorities, and the country's material challenges, a key question is whether these ideals can be translated into industrial development that creates value for domestic and international markets while helping to reduce poverty and inequality in Bolivia.

Bolivia's wood products sector provides an excellent context for studying the dynamics of this political-economic strategy. The sector has grown significantly in the past decade and although it is still small by global standards, it directly and indirectly employs 250,000 people, ranks third in trade performance for Bolivia, and generated nearly $100 million in exports in 2006 (Price and Pinell 2007; International Trade Centre 2009). Between 1996 and 2005 alone, the number of firms registered with the Forest Superintendent's office increased over ten-fold, the number of exported species doubled, and the number of hectares of forest under formal management increased from 6 million to 9 million (Cámara Forestal de Bolivia 2007). Of the approximately 1,300 wood extracting or processing firms currently registered with the state, 73 percent are thought to be small enterprises (International Tropical Timber Organization 2009). Beyond dencentralizing with respect to industrial organization, the wood products sector has also diversified away from its traditional focus on mahogany exports (locally known as *mara*;

scientific name *Swietenia macrophylla*) and is now known for its high-quality Spanish cedar (*cedro; Cedrela odorata L.*), Spanish oak (*roble; Amburana cearensis*), ironwood *(tajibo; Tabebuia serratifolia or Tabebuia impetiginosa)* and balsam wood *(quina quina; Myroxylon balsamium)* (Barany, Hammett, and Araman 2003; Gutierrez Rojas and Sandoval n.d.). While many believe that these changes, when coupled with improvements in the laws and policies governing forests, are positive, illegal deforestation and corruption continue to plague the wood products industry. Estimates are that illegally logged and transported timber is 2-8 times greater than that which is legally harvested (Contreras-Hermosilla and Vargas Rios 2002; Pacheco 2006; Sheikh 2007; Gutierrez-Velez and MacDicken 2008).[3]

Figure 2 details how forest access rights (*derechos forestales*) and concessions are distributed both geographically and with respect to type of owner. Most of the lands available for commercial forest production (*Tierras de Producción Forestal Permanente*) have yet to be formally allocated by the state and, of those forest areas under permanent production, approximately 74 percent are controlled by private concessionaires (*Concesión Forestal a Empresa*) while 24 percent are managed by place-based community groups (*Agurpaciones Sociales del Lugar or ASL)* or indigenous communities (*Tierras Comunitarias de Origen or TCO*) (Taylor 2006). Importantly, the proportion of lands controlled by communities has increased significantly in recent years while the number of private concessions has remained flat (Price and Pinell 2007).

Changes in forest access were first made possible by the 1996 Agrarian Reform (*Ley 1715*) and Forestry (*Ley 1700*) Laws which created the National Land Reform Institute (*Instituto Nacional de Reforma Agraria* [INRA]) and decentralized control over forest lands and resources. Particularly significant was the stipulation in *Ley 1715* that landholdings that do not serve a (broadly defined) socioeconomic function (e.g., production, employment, subsistence) can be expropriated by the state with some compensation given to landholders through a public tender process (Government of Bolivia 1996; Pacheco 2006; Eaton 2007). In 2006, *Ley 1715* was amended significantly by *Ley 3545* which provides far greater detail about what constitutes a socio-economic function, requires bi-annual inspections of all lands to assess their function, and mandates that expropriated lands be given to indigenous and rural communities lacking land with some, INRA determined, compensation given to landowners (Government of Bolivia 2006b; Instituto Nacional de Reforma Agraria 2008; Köppen 2008). Landowners' fears that expropriation might be immanent, coupled with increased global demand for tropical hardwoods, have driven dramatic growth rates in the industry and encouraged a large-number of rural people and smaller-scale enterprises to get involved in the wood products trade. In sum, Bolivia's shifting political priorities, coupled with dramatic growth in and decentralization of a potentially high-value industry, make it an excellent context for studying the dynamics of GPN integration.

<INSERT FIGURE 2 HERE>

Methodology

The analysis presented here is derived from in-depth interviews that were conducted in 2007 and 2008 with over sixty business owners and managers in Bolivia's wood products sector. Sampled firms were divided between two centers for wood processing activities in Bolivia: the Santa Cruz region in the country's eastern lowlands, and the cities of El Alto/La Paz in the northwestern Andean region (see Figure 2). The firms cover a wide range of products, business

sizes, and management styles ranging from large-scale manufacturers of plywood, outdoor furniture, and decking, to family-owned microenterprises that manufacture furniture for the domestic marketplace. Although the sample is quite diverse, all of the participants share an active interest in establishing or sustaining international market ties.

Table 1 breaks down the sample by region, subsector, size, and the gender of the owner or manager interviewed. Interview questions focused on the general production and marketing activities of firms with an emphasis on the strategies used to access new markets. Respondents were also asked to discuss some of the challenges they face, and opportunities they envisage for future business development. Importantly, interviews were conducted during a "boom" period in the wood sector and thus the data reflect, in general, an economically optimistic time when ties to outside markets were relatively strong.

<INSERT TABLE 1 HERE>

Interview data were compiled and organized with the aid of a qualitative data analysis program (QSR NVIVO 8.0) and then coded for the following themes: network entry barriers, value creation possibilities, upgrading strategies, network development practices, spatial characteristics, and power relations. From these themes, specific codes were created, patterns were identified, and a typology of production networks was developed, each having distinct entry barriers, value creation possibilities, upgrading strategies, and network development practices. Four kinds of discontinuous networks were identified, each representing a unique organizational form and strategy for engagement with domestic and international markets.[4] An in-depth analysis of the network development practices associated with of each type of firm/network revealed important differences in relational proximity requirements, power relations, social spaces, and with respect to the role of local factors such as resources, class positionality, and institutions.

Table 2 summarizes the four networks with respect to their entry barriers, value creation possibilities and (unique) upgrading strategies. *Conventional GPN* are used by larger-scale Bolivian firms that have ties with, or are striving to develop ties to, large-volume international buyers of timber and wood products such as flooring, decking, or outdoor furniture. *Brokerage networks* are available to numerous smaller-scale wood suppliers who act as intermediaries between international buyers and forest communities and concessionaires. *Diasporic networks* enable firms to develop higher-value ties to international markets, particularly through the manufacture of custom wood doors and furniture. *Associative networks*, the least internationalized, are constituted by associations or cooperatives of small-scale carpenters and furniture makers striving to extend their market reach through technological and financial support from donors, non-governmental organizations (NGO), and, ideally, the Bolivian state. In the discussion that follows, the relational characteristics of each production network are detailed with the goal of demonstrating how material, cognitive, and socio-cultural factors create discontinuities between them.

<INSERT TABLE 2 HERE>

Networking Practices in Bolivia's Wood Products Sector

The network development practices of each production network are detailed below with respect to: 1) how relational proximity is achieved; 2) how power relations shape relational

strategies; and 3) how particular social spaces and local (i.e., Bolivian) factors influence relationships. The different relational strategies reveal important insights into the challenges faced by Bolivian wood product firms and show how and why network discontinuities are created through social, cultural, and institutional factors that may be poorly accounted for in the extant literature. Table 3 summarizes the relational characteristics of each network.

Conventional GPN

Nine firms fall into this category where capital-intensive, high-volume production of low- to medium-cost wood products is the norm. Most of these firms have control over, or ready access to, large forest concessions and the capital (e.g., trucks, skidders, road building equipment, and milling operations) required to extract and process high volumes of wood. As Table 2 indicates, their value creation possibilities range from rough sawn lumber (e.g., S2S, S4S) to higher-value products such as outdoor furniture.[5] For Bolivian firms striving to gain access to conventional GPN, the goal is to gain legitimacy among a small population of leading retailers (e.g., B&Q, Home Depot) or wholesalers able to sustain a high-volume demand.

Relational proximity between conventional-GPN suppliers and international buyers emerges when Bolivian businesspeople demonstrate their ability to adhere to international performance standards, meet desired volumes of production, and tightly control their supply chains (Murphy and Schindler forthcoming). In doing so, businesspeople must demonstrate their firms' embeddedness in TNC-driven conventions of production and supply-chain management. In this context, local (i.e., Bolivian) conditions and factors become less significant, except as they relate to the quality of the supplying firm's forest resources, the sustainability of its forest management operations, and/or the quality and affordability of its workers.[6] The social spaces for these demonstrations are initially in Bolivia when prospective buyers visit a supplier's manufacturing facilities. If these visits are successful, regular negotiations typically occur in the offices of TNC and wholesalers based primarily in North America and Europe. Through power point presentations, glossy catalogs and websites, English-language capabilities, appearances at international trade shows (e.g., in High Point, NC), and modern office spaces, conventional-GPN suppliers help create social interactions that are similar to those commonly experienced in large European and North American firms.[7]

Acquiring the financing and developing the social and technological capabilities needed to perform effectively for buyers from large wholesalers and TNC is not easy, and most representatives for or owners of conventional-GPN firms are able to do so in part because of their relatively privileged backgrounds. Specifically, many of these individuals come from wealthy backgrounds or Bolivia's traditional elite families, have university-level or graduate educations (often obtained internationally), are of mixed race (*mestizo*) or European descent (e.g., German, Croatian, Italian, Spanish), and have learned about international business norms and conventions through experiences working in family-owned firms. Such circumstances help these businesspeople overcome some of the sociocultural and financial barriers to conventional GPN integration by positioning them as part of what Sklair (2001) and Dicken (2003) term the *transnational capitalist class*, elites who are globally oriented, have a common understanding of TNC business practices, and consume similar kinds of (globalized) luxury goods and services.

Beyond the power that comes with this structural positionality, conventional-GPN relationships are characterized by two kinds of struggle—one international, the other local—that shape Bolivian firms' abilities to successfully build relational proximity to buyers. The first

relates to the power that buyers wield in shaping exchange relationships. This power has been well documented in the literature and the conventional GPN encountered here fit what Gereffi, Humphrey, and Sturgeon (2005) call "market" or "modular" forms of governance. Specifically, suppliers of wood products such as S2S and S4S lumber are governed through "market" relationships where products are standardized and informational complexity is low, thus making it relatively easy to switch suppliers. At the higher end of the spectrum, as in the case of firms who supply outdoor furniture to retailers such as Home Depot, governance appears to switch to a "modular" form where the Bolivian firm acts as a turn-key supplier of more specialized products. In this case, design and logistical capabilities play a more significant role, as noted by a representative for a major supplier of outdoor furniture.

> [Our] designers are given basic requirements that our clients tell us to conform to. For example, in Europe they very much like linear styles, they don't want curves. From this [our] designers use their own ideas about furniture that they get from visiting stores, taking photos, and seeing the design trends. With these elements they develop new alternatives and then propose these to our clients. We then tweak and refine the design until the customer is entirely satisfied and then we produce a sample. We then send the sample via DHL and the customer tests the product with respect to its weight, height, packaging, etc. Once the product is approved completely, we can get the production order. [CONVGPN1][8]

The other power dynamic at work in conventional GPN has to do with the need for suppliers to sustain tight control over extraction and production activities within Bolivia in order to meet the demands of international markets. In the current political climate, however, many large-scale business owners are concerned about whether they can maintain such control. As was noted earlier, changes in the Agrarian Reform Law (*Ley 3545*) have increased the likelihood that lands failing to meet the socioeconomic function will be expropriated and handed over to indigenous communities, landless peasants, or new migrants to rural regions. Moreover, privately-held forest concessions are at present almost impossible to obtain and organizations such as the U.S. Chamber of Commerce have warned potential investors of the risks associated with Morales' threats to nationalize all natural resources (Crenwelge 2006). As a manager for a conventional-GPN firm observed:

> We're worrying about what's going to happen in the next few months….this government with the new constitution, they say they're going to change the concession model. They say they're going to give all the forests to the communities so that they manage it. [CONVGPN2]

These circumstances are having a significant impact on the supply-chain management strategies of large firms and some are hoping to improve their positionality vis-à-vis the state by developing business relationships with forest communities (i.e., ASL and TCO).[9]

> We hear a lot of things that they're going to give your concession back to the state and you're not going to have more land to work, so I started doing business with [TCO]. [CONVGPN3]

These changes raise significant questions about whether conventional-GPN firms can effectively restructure their relationships with local wood suppliers and sustain the *status quo* with respect to international buyers. Such concerns are also important from a regional and industrial development perspective given that the few firms that are able to meet the demands of

conventional GPN employ large numbers of workers and have achieved significant levels of technological upgrading.

Brokerage networks

Brokerage networks are the most common strategy for market internationalization due in large part to their relatively low entry barriers. Seventeen firms fall into this category and they typically supply smaller-volume buyers based in North America, Europe, and increasingly Asia (especially China). In some cases, as is true for trade with China, Bolivian brokers work through locally based intermediaries, often Brazilians, who have longer-standing relationships with particular markets (Murphy and Schindler forthcoming). In terms of value creation, brokers export rough sawn timber (e.g., S2S, S4S), specialty woods (e.g., balsam wood or *quina quina*), and/or they add value by converting rough wood into basic decking and flooring products, often through the use of subcontractors.

Relational proximity between brokers and international buyers occurs when brokers successfully demonstrate their reliability with respect to product quality and the timeliness of shipments. This process is complicated by the fact that orders for hardwoods and hardwood products are often made months before the wood is extracted. This creates uncertainty with respect to such factors as weather (i.e., when the rainy season starts) and price (i.e., due to demand and supply fluctuations), and means that formal contracts often have little value, particularly towards the end of the harvesting season when there is, in effect, a scramble to get wood from the forests. Further complicating the prospects for buyer-broker relationships is the fact that dramatic growth in brokerage activities has made it harder for international buyers to find experienced, responsible, and reliable suppliers. As one broker noted:

> What I have found is that the buyers are willing to test with the first order and see how it turns out because there have been many, I wouldn't say companies, but rather efforts from people who were not in the wood business. When the wood business started picking up they started trading with wood because they thought it was pretty easy. They then found that it was more difficult than they thought and let many, many…customers down because they didn't fulfill contracts. [BROKER1]

This lack of trust and reliability is not inevitable but the complications mean that achieving relational proximity can be a risky and time-consuming process.

Unlike actors in conventional GPN, brokers represent a wider range of economic and socio-cultural backgrounds. In Santa Cruz, brokers have similar cultural identities as the *mestizo* elites who are common to conventional GPN, albeit often coming from less prominent or wealthy families. In El Alto/La Paz, the situation is more diverse as these networks are participated in by both traditional elites and a newly emerging class of Aymara businesspeople who, as Eaton (2007) observes, are playing an increasingly significant role in organizing commercial activities. All told, brokerage networks are the most diverse socio-culturally and with respect to the age and size of firms; diversity that has been enabled in part through Bolivia's forest decentralization policies.

> Before, the business was run by big companies. Now the business has developed more legs … [its] deconcentrated in the sense that there are small players which are the people that commercialize. [BROKER2]

A further contrast to conventional GPN comes with the relationship development strategies of brokers. Rather than relying on formal presentations and international travel, brokers strive to earn the trust of buyers through repeated (successful) transactions and generally develop transnational ties without leaving the country. International buyers travel to Bolivia to meet brokers personally and to assess the quality of their operations. These quality assessments draw on the tacit or experiential knowledge that buyers develop over time and which enables them to evaluate prospective suppliers in situations where there is often a high-degree of informality. Face-to-face meetings are crucial and are commonly performed in social spaces such as cafes, sawmills, forest concessions, and/or timber warehouses. Despite their informality, brokerage relationships can involve large sums of money that are rarely secured through formalized contracts.[10]

> They come here and I pick them up from the airport. We talk about the details, price, when, where, how. Then we go and see the production, which is very far away. It takes time. [BROKER3]

> At the beginning of the year this lady tells me she needs $50,000.. I say, I don't have that much with me. … [she says] Then give me 20. [then] we get together in a coffee shop like this. I don't have a receipt, I don't have anything. [I say] give me a piece of paper. Receipt for $20,000.00. When my lawyer saw those receipts, he wants to kick my ***. [BROKER4]

In recent years, brokerage relationships have been aided by The Chamber of Forestry's annual *Rueda de Negocios* (business negotiation rounds) event which brings international buyers and Bolivian brokers together for two days in Santa Cruz. As Figure 3 demonstrates, this event provides an opportunity for face-to-face meetings through a controlled format of timed encounters. During these twenty-to-thirty minute meetings, brokers present evidence of their production capabilities, negotiate prices and delivery terms, and, in some cases, make deals right on the spot.

<INSERT FIGURE 3 HERE>

With respect to power relations within these networks, brokers are problematically positioned between local suppliers of raw materials and buyers in the international marketplace. Particularly challenging are the logistics associated with getting the wood from the forest to the port in a timely fashion. Securing particular quantities and species of wood from rural communities, indigenous territories, or forest landholders is no easy task and brokers must spend extensive amounts of time in forest areas making deals with third-party extractors. This is not to say that brokers are powerless in relation to rural suppliers since they can, in fact, wield quite a bit of economic and social power. However, the informality of the brokerage business means that the promises made by suppliers about quality and delivery are extremely difficult to enforce effectively. As such, relationships with rural suppliers are often viewed with skepticism.

> You want to do business here? The first thing is you have to risk is money. It's not only the person. You have to go see if they're telling the truth. I just had two of my personnel walk three days in the mud because somebody said they had a lot of trees of a certain species. Three days walking, they found three trees. That's a large sacrifice. All the time. Lots of bulls***. Lots of lying, deception. People will tell you they have trees so that you can make them a road. But they don't have the trees. [BROKER5]

> It is really very difficult because the [suppliers] out there…are very tricky. For example, we can leave an advance and then another [broker/buyer] comes and offers a penny more, they'll sell it to them. When you return for your wood they tell you that they have not done it yet or if not this then they will tell you they will return the money … but in reality they don't return it. [BROKER6]

Adding to these complications are the logistical and political challenges of getting sawn timber from forests to urban areas or wood processing centers. The logging season or *safra* is short—typically lasting from May until November when the rainy season begins, forest roads are generally in poor condition, and it is common to have roads blockaded by social movements and communities protesting against government policies or the actions of private sector actors. Such obstacles are further exacerbated by the illegal logging and corruption commonly associated with the industry. Particularly problematic is the fact that *certificados forestales* (C-FOR), documents attesting to the legality of a wood source and shipment, are often illegally purchased or used to verify the "legality" wood supplies or shipments other than those for which they were initially created.

> You have to be careful. Let's say you go out and somebody shows you wood. You get to see the wood. They show you the C-FOR. Either it's fake, it's forged or somebody changed the species. So you're going to arrive in La Paz with your truckload of some valuable wood but the C-FOR in reality belongs to some land that didn't have that species. You will lose the wood. [BROKER5]

Brokerage firms must either embrace, as some do, illegal logging and wood transfer practices or have the skills necessary to manage the risks and uncertainties if they are to sustain ties to international buyers. Developing such skills requires brokers to establish and maintain strong local networks that include wood suppliers in forest areas, other brokers who can keep them updated on trends in the industry, and logistics or transportation specialists able to get timber from the forest to the processor or port. When international buyers visit or try to make deals, this localized expertise needs to be clearly and explicitly demonstrated through visits to wood extraction sites, processing locations, and warehousing facilities. All told, brokers remain in a unique and generally unenviable situation – they need to control relationships with local suppliers and international buyers without having the power of conventional GPN firms with respect to land ownership, machinery, and financial capital.

Diasporic networks

Diasporic networks are used by firms who have developed ties to buyers of custom doors and hardwood furniture through relationships initiated and strengthened by commonalities in language, religion, place of origin, and/or family background. Eighteen firms were classified in this group; four producing custom doors for U.S. markets, fourteen selling or striving to sell custom furniture to buyers in Europe and the United States. Figure 4 shows examples of the work of diasporic firms and the quality products demanded through these networks offer significant advantages over conventional export routes given the price premiums they garner.

> If I'm going to sign a contract with the Chinese, I'm going to have to sell my chairs for $19 each. Today I am selling chairs at $800, $900, $1000 to $1500 and my client is selling those chairs for $4800 to $5000. They are earning much in the USA but I am also earning a lot. [DIASPORIC1]

<INSERT FIGURE 4 HERE>

Diasporic networks generally develop through the "weak ties" that Granovetter (1973) observed to be so important for economic networks. Diasporic commonalities provide entry ways for new business relationships when individuals establish connections in part as a result of a common ethnicity, language, family ties, mutual acquaintances, nationality, regional identity, social class, and/or religion.[11]

> A lady in West Palm Beach had two girls that were from Bolivia in her house twenty years ago and one of those girls married my cousin. When she visited Bolivia, she was interested in looking at furniture here, so that is how that relationship started. … The [client] from New York is married to a family relationship that I have with an architect here for whom we made [furniture] in the past. [DIASPORIC2]

> My first client was a *Cochabambino* with an American nationality….he knew people who had had business relations with him and one of those is my [current] client. [DIASPORIC3]

Once the initial connection is made, relational proximity increases if diasporic businesspeople demonstrate that they have extensive (non-diasporic) knowledge of industry-specific conventions and trends and thus have the professional capabilities needed to meet the demands of clientele expecting high-quality service and production. Moreover, diasporic businesspeople benefit from, particularly in the furniture industry, an air of cosmopolitaness and/or sophistication that comes with an ability to speak foreign languages, from personal experiences living or travelling abroad, and/or the ability to express one's (extensive) knowledge of international market and design trends.

> My daughter has studied interior design [in] Fort Lauderdale … and she is going to spend a year in Milan studying [furniture] finishing techniques. [DIASPORIC1]

> I travel to Spain and to fairs like the *Casa Cor* fair in Sao Paulo since the Brazilian market is generally important for design inspiration. [DIASPORIC4]

The social interactions that establish and sustain these relationships commonly occur in spaces such as trade fair display areas, product showrooms (for furniture makers), and/or in manufacturing workshops (more common for door makers). Prospective international clients visit these spaces to negotiate design and contract terms and it is also common for some diasporic businesspeople to travel internationally to meet with clients such as housing developers, interior designers, or architects.

In terms of power, diasporic networks provide an interesting contrast to the relations observed in brokerage networks and conventional GPN. Although international buyers are clearly key actors, the power inequalities between buyer and supplier are significantly less as international clients are willing to pay higher prices (but with high profit margins) to gain access to the creativity and production capabilities of diasporic firms. Perhaps most interestingly, formal contracts may be disruptive to the trust-building process or disliked in that they depersonalize the relationship.

> If I sign a contract [saying that] he's going to pay me $20,000.00 for this furniture, its all in the contract….I am very comfortable with the contract and what happens if he doesn't pay me? Am I going to sue him? How much is it going to cost me to sue him? More

> than the $20,000 and maybe the contract will make me deaf or blind to other details of his personality. [DIASPORIC2]
>
> And …
>
> [A large furniture wholesaler] once sent us this [design specification]. … It cost me $60.00 to print the book but we sent a quotation anyway. They wanted to pay $75 for a table that they sell for $600.00. … The wood cost more than $75.00! The packing cost $50.00! … They now do business with somebody in Asia but we cannot do that. So we have to find the clients that work the way we work. [DIASPORIC2]

Two local factors are most significant in helping diasporic firms successfully build ties to international markets. First, finding and retaining skilled labor, particularly with respect to finishing and wood carving, is essential for success. This can be a struggle, however, since skilled Bolivian workers often migrate to Europe or North America and/or are able to start their own independent businesses.[12] Because of this, diasporic businesspeople are sensitive to the need to value and empower workers through improved wages, a more collaborative work environment, and/or by using subcontracting arrangements with highly skilled carpenters.

> In the past the workers came to us but now things are difficult. When we have a good carpenter we must hold onto him tightly. [DIASPORIC5]
>
> You have to play smart now and you have to empower people … and subcontracting empowers my labor force because they are owners of their own business.[DIASPORIC6]

The second local factor stems from the quality of the firm's domestic clients, particularly in the case of furniture manufacturing. The primary markets for many diasporic firms are domestic and these firms rely on wealthy Bolivians and expatriates who travel abroad regularly, own multiple homes, and/or who may frequently redesign their household interiors.

> People, here especially in Santa Cruz, are very fashion[able] and furniture is now a fashion statement. … They change the furniture even on a yearly basis. … I'd estimate that it's 10 percent of a whole population in Santa Cruz that buys this kind of furniture. [DIASPORIC6]

Coming from a similar sociocultural and/or economic background as these elites can play an important role in helping diasporic firms gain access to lucrative local markets.[13] Considered in a more global sense, this class positionality is important because it helps diasporic businesspeople gain valuable experience meeting the demands of design and quality-sensitive consumers and enables them to keep up with international trends in interior design and architecture. Although it is unrealistic to think that the majority of Bolivian firms can aspire to these kinds of high-value markets, diasporic firms are drawing positive international attention to Bolivia's wood products industry.[14]

Associative networks

The fourth kind of network, constituted by carpenters and furniture makers who organize in cooperatives and associations, is not yet internationalized but is important to understand given the Bolivian government's emphasis on industrial development through small-scale enterprises. Nine firms were identified as following this strategy, seven based in El Alto and two in Santa Cruz. It is through associations that members are able to pool resources, share information, acquire technology or machinery, rent higher-quality space in markets, and/or attract the

attention of foreign donors, NGO, or state-sponsored programs for industrial development. Although competition between businesspeople is fierce in most associations, the collective benefits outweigh the individual costs of sharing resources with competitors.[15]

With respect to marketing, associative strategies are somewhat similar to those used by diasporic firms but there are important discontinuities between the networks. Most significantly, associative businesspeople do not have the (upper)-class identities, cultural connections, cosmpolitaness, or high-quality local clients critical for relational proximity in diasporic networks. Because of this, associative firms are primarily relegated to local markets wherein they have regular clients, but not the kind of buyers they would encounter in international markets.

Social interactions between association members and their clients typically occur in the market spaces that the association has rented. In most markets where furniture products are sold it is common to find several different associations in operation, each controlling a particular area. Relational proximity to clients develops in these spaces through face-to-face interactions where negotiations over price, style, and/or delivery are made and where manufacturers can display their finest works. Shared experiences with clients are particularly important in that success enables associative businesspeople to build reputations and develop a steady market. All told, the network development practices of associative firms require spatial proximity and remain distinctly local in their operation. This circumstance is especially important when one considers how such firms might reach out to international markets.

In terms of power, the positionality of associational firms in Bolivia's economy and society puts them in a difficult situation. Three local factors stand out as being particularly problematic: access to finance, access to higher-quality wood supplies, and access to clientele able to demand and pay for greater quality. With respect to finance, interest rates and banking norms in Bolivia make it extremely difficult for associations to obtain the kind of credit needed to make significant investments in machinery, workshops, and furniture showrooms.

> If we could get investment loans from second-tier banks [wholesale banks] with an interest rate of 3% it would be possible for us to export. But not with an interest rate of 18%, which is more or less the normal rate. [ASSOC2]

Although micro-credit is commonly available in Bolivia, none of the associative businesspeople sampled here mentioned it as a potential or significant source of the capital needed to upgrade their businesses. This is not surprising given that such financing mechanisms are used primarily for lower-value commercial activities, not higher-value added or high-return manufacturing or trade enterprises (Schreiner and Woller 2003; Gibb 2008). Moreover, micro-finance institutions (MFI) often require short repayment cycles that may be unrealistic for larger investments in fixed capital (e.g., machinery, workplaces) that will bring, at best, gradual returns over the course of months and years, not weeks. The gulf between MFI and large commercial banks, the ones that cater to conventional GPN, demonstrates that Bolivia lacks a financial middle ground that might better serve the needs of associative firms in the wood products industry.

A second local factor is the quality of the wood that is accessible to associational firms. Most associational enterprises purchase their wood from local warehouses (*barracas*) and this wood is often of less desirable varieties and is prone to cracking and warping. Despite dramatic increases in wood extraction since 2000, domestic supplies of hardwoods have gotten tighter and associational businesspeople are unable to get higher quality wood for furniture production.

> Here there is no top-quality wood. For exporting we need the best quality wood….but the best wood is selected and sold for exportation. [ASSOC3]
>
> The problem is that the majority of the good wood is taken away for exportation. It goes to the big businesses or is exported directly. Little of it makes it [to El Alto]. And what does make it here is not good wood. [ASSOC4]

Unless greater volumes of higher quality wood can be made available to mass markets in Bolivian cities, it will be very difficult for associative firms to manufacture higher quality products.[16]

The third local factor that limits associational firms is the quality demanded by their regular, lower income clientele. Price based competition dominates in these markets and because there are so many carpenters and furniture makers, the quality of manufacturing is often sacrificed in to order to obtain sales. For some, a medium-term strategy is to have a showroom in higher-end markets within La Paz and Santa Cruz while others have begun to expand their domestic market reach through participation in regional trade fairs.

> The people of El Alto are not looking for high quality and its better to have a lower price. … People in the city center are looking for a bit more quality and we want to start a shop in the *Calle Murillo* [a high-end shopping area in central La Paz]. [ASSOC5]

The challenge of improving the quality of clientele available to associative firms is particularly problematic in the Bolivian context given the significance of racial, ethnic, and class-based structures and institutions. The legacy of structural racism is well documented (e.g., see Jones 1997; Schroeder 2007) and even with the election of an indigenous person to the presidency, tensions between people of *mestizo* and European heritage, and Andean (Aymara and Quechua) peoples, remain significant. Considered here, the lower class positionality of associative businesspeople limits the kinds of weak ties available to them, connections that play a key role in enabling diasporic businesspeople to build connections to international markets.

Overcoming these material, institutional, and socio-cultural challenges is critical if associations are to develop relational proximity to high-value buyers in international markets. To do so, associations will more than likely require significant and sustained financial and technological support from the state, donors, and/or NGO. Surprisingly, the MAS government has offered little more than rhetorical support despite its desire to promote cooperative industries and small-scale enterprises. With respect to donors and NGO, some associations have been helped and one particularly successful group—*La Asociación de Carpinteros Microempresarios de El Alto* (ACMEA)—benefited from United States Agency for International Development (USAID) sponsored training. The association was even featured in a leading newspaper (see Figure 5) where one of its leaders was quoted as follows:

> We were selling a chair for 20–30 bolivianos [$3 to $4.50]. Today, with the training we have received, we have a higher quality of finishing and the same chair is sells for around 200-300 bolivianos [$30 to $45]. … Thanks to the support [from USAID] we have become familiar with the techniques needed to have better finishing and to export. [*La Razon* 2008]

Relationships such as these have limitations, however, since NGO, government agencies, or donors are not buyers themselves and thus may not be knowledgeable about international markets. In sum, while associative networks have the potential to serve international markets, the

firms in them can best do so through significant improvements to their technological capabilities and market access opportunities.

<INSERT FIGURE 5 HERE>

Network Discontinuities and GPN Theories

The empirics presented here reveal four distinct relational strategies used by firms in Bolivia's wood products sector as they strive to expand their markets and increase the value-added of their manufacturing activities. Distinctions between them stem from differences in market entry barriers, value creation possibilities, and upgrading strategies, and from the social and spatial characteristics of their network development practices. The relational characteristics and network development practices of these networks were detailed and unpacked with respect to how relational proximity emerges, how power asymmetries shape the dynamics and quality of buyer-supplier ties, and how local (i.e., Bolivia-specific) factors enable (or disable) firms to meet international market expectations.

Table 4 summarizes the material, cognitive, and sociocultural factors that create discontinuities between each relational strategy. Conventional GPN are discontinuous due to their logistical and technological capabilities, their capital intensity and scale, the formality of business negotiations, the elite status of their participants, and the management experience needed to meet the expectations of large international buyers. Brokerage networks are distinguishable by their focus on small volume trade, the informality of business interactions, the high-risk environments brokers operate in, and the emphasis on tacit or experiential knowledge. Diasporic firms cater to niche, high-value markets and need sophisticated technical capabilities, a cosmopolitan understanding of design trends, highly skilled workers, and the ability to meet the customer service and quality needs of demanding clients. Finally, there are associative networks whose material limitations (i.e., their access to finance, wood supplies, and better workspaces) and class/cultural positionality make them discontinuous with diasporic networks despite similarities in the products manufactured.

<INSERT TABLE 4 HERE>

GPN discontinuities or divisions have been identified before (e.g., see Bridge 2008) but this article has demonstrated that they can be associated with independent value chains, not simply by firms having different capabilities or holding different positions in a common network. Capabilities and positionalities matter, of course, but this article has also shown how network discontinuities are constituted by stabilized relational or network-development practices. For some, perhaps, the common (commodity) connection to hardwoods and Bolivia's forest regions may problematize these findings. When examined more carefully, however, the relationships between different networks and the hardwoods sourced from forest areas are constituted in significantly distinct ways. For example, conventional-GPN firms have tight control of forest concessions and the capital needed to extract timber themselves. Brokers, in turn, lack such resources and sustain less-direct ties to the forests as they depend on others (e.g., subcontractors, independent loggers, and rural people) to manage extraction. Importantly, these value chains rarely overlap given differences in volume requirements, the formality of business deals, and the types of forest concessions and concessionaires accessible to each type of firm. When considered in relation to diasporic and associative firms, such differences are even more apparent given that

these enterprises are based in urban areas and rarely, if ever, source directly from extractors or forest owners. Instead, their supply-chain needs are met primarily through local wood suppliers lacking the interest or ability to engage in international trade.

Although network discontinuities present a formidable challenge to businesspeople hoping to transform their activities to serve more profitable and sustainable markets, they should not be viewed as permanent or as inevitably closing off the possibility for their integration or for individual firms to shift between network categories. Such shifts or integrations are possible but unlikely to occur without targeted interventions able to help firms in one network access the resources and develop the cognitive, relational, and technological capabilities relevant to another network. Even with such support, however, structural factors may prevent shifts into networks where one's background, race/ethnicity, and/or class positionality play an important role. For example, associative manufacturers often receive basic carpentry training through employment in conventional-GPN or diasporic firms. Although this training helps these manufacturers improve their production techniques, associative enterprises remain unable to access higher-value international markets due in part to their socio-cultural positionality.

Beyond highlighting the importance of discontinuities, the findings contribute to conceptualizations of GPN in three ways. First, they demonstrate that production network integration requires more than simply an adherence to the governance structures imposed by foreign firms. Its outcome and potential is determined by a contingent, contested, and often complex set of social and spatial factors that constitute particular types of value networks linking suppliers to buyers. By focusing on these socio-spatial processes, rather than the conventions or structures imposed by leading TNC, the diverse agencies of, and networking strategies used by suppliers become visible. This is important not only because it demonstrates that there are multiple and discontinuous networks constituting industries like the wood products sector, but because it shows how research that starts with smaller firms in Southern economies can help to dispel (monolithic) myths about contemporary globalization's one-size-fits-all "flattening" or hegemonic tendencies.

A second contribution relates to the manner in which power and the positionality of firms are dealt with here. Power plays a key role in the development of relational proximity as buyers and suppliers negotiate contract terms, control quality and the timeliness of deliveries, and manage the risks associated with transnational business. Socially, power is mobilized or enacted through interactions and performances where a supplier's legitimacy, seriousness, and/or capabilities are demonstrated to prospective buyers. Structurally, relational proximity is possible only for firms and businesspeople that are adequately positioned with respect to the norms, cultures, conventions, hierarchies, and rules of a particular network. These may be formally defined—as in contract terms, volume expectations, and/or technological capabilities—or they may be more informally determined on the basis of one's social class, ethnicity, and/or reputation. Either way, these structural factors serve a key role in enabling or constraining value-creation possibilities and make it difficult for firms to shift between networks.

A third contribution relates to the question of whether it is possible or useful to distinguish between different kinds of embeddedness (i.e., network, territorial, or societal) in GPN research (e.g., see Hess 2004). In the case of Bolivian manufacturers, the ability to develop relational proximity to international buyers (i.e., to become embedded in a GPN) is influenced by a combination of local, societal, and network-specific factors. For example, diasporic firms develop relational proximity to international buyers both through their socio-cultural

positionality and by demonstrating their knowledge of building codes or design trends in foreign markets.[17] These territorial (i.e., local) and societal factors come together in the context of the network embedding process and, as such, cannot be separated from it. Rather than trying to make such distinctions, this article argues that the relational proximity concept offers a more effective approach to understanding how localized factors and institutions, as well as non-local ones, shape the prospects for production network integration and "globalized" regional development.

Conclusion

Beyond its theoretical significance, this analysis has important implications for policy makers and with respect to epistemological issues in economic geography. In terms of policy, the multiple and discontinuous networks that constitute Bolivia's wood products industry raise significant questions about how to target industrial development programs. Although they are loosely bound together by virtue of their connection to forests and wood products, each type of network relies on a particular set of institutional, cultural, and material resources for success and sustainability. This diversity of needs and challenges is important in that industrial development policies that target one kind of network may do little to help, or may even harm, firms in another kind of network. This is not to say that industrial policies are a zero-sum game but that policymakers need to have a detailed understanding of the different kinds of production networks in an industry before policies are developed and targeted.

Considered in relation to the Bolivian context, the findings demonstrate the challenges facing the MAS government as it strives to undo twenty years of neoliberal policies and restructure industries in line with post-colonial and socialist ideals. In essence, neoliberal reforms promoted conventional GPN-like firms while the Morales' government is emphasizing associative networks as the most effective means for pro-poor industrial development. In between both extremes lay brokerage and diasporic firms who have received little direct attention or support from either ideological camp. This is ironic given that these kinds of firms constitute both the bulk of Bolivia's export-ready wood industry and, in the case of diasporic firms, the highest-value added ties that Bolivian wood manufacturers sustain to international markets. The central point is this: regardless of its ideological imperatives, i.e., neoliberal or socialist, the Bolivian state has failed to develop a more comprehensive, inclusive, and integrated industrial development policy for the wood products sector. This failure is particularly troubling given the fragility and value of the country's forests, and the fact that minimally processed hardwoods constitute much of Bolivia's wood exports.

Lastly, with respect to epistemology this study raises important questions about how economic geographers analyze and interpret the socio-spatial dynamics of the global economy. In contrast to the majority of research, where leading TNC, advanced industrial or emerging economies, and high-technology or high-value service industries are central to analyses, this study emphasized small and medium-scale firms, lower-tier suppliers, a low-income country, and a basic manufacturing sector. The results demonstrate that economic-geographical research that focuses on such contexts can yield important theoretical insights regarding globalization and the industrial development challenges facing, and possibilities for, countries in the Global South. Moreover, by emphasizing the views and realities of smaller-scale Southern enterprises, over those of lead firms or Northern TNC, research such as this can reveal business strategies that may be invisible to studies where the best, biggest, or highest-value markets, networks, and firms

are emphasized. Doing so not only takes heed to recent calls for greater geographical and epistemological diversity in economic geography (e.g., Pollard et al. 2009), but it increases our understanding of, and sensitivity toward, the pressing economic, political, and social issues facing communities in the Global South.

Acknowledgements

This research was supported by U.S. National Science Foundation Grant BCS-0616030. I sincerely thank all of the study's participants and special gratitude goes to my research assistants Aaron Rozenman and Celina Grisi who provided superb support in the field and beyond. Thanks also to Audrey Kobayashi and the three anonymous reviewers for their constructive and highly useful comments on prior versions of the manuscript.

Notes

[1] The GPN approach in economic geography, while related to work on intra-firm production networks in management studies (e.g., Ernst and Guerrieri, 1998; Ernst and Kim, 2002), differs significantly because of its emphasis on the regional development implications of GPN integration. The GPN concept is also meant, in part, to counter to the global value chain (GVC) framework (e.g., see Gereffi, 1999; Humphrey and Schmitz, 2002; Gereffi, Humphrey, and Sturgeon 2005). As Coe, Dicken, and Hess (2008, 276) note:

> [the GVC] typology reifies and essentializes the market and the hierarchy as distinct, non-networked forms of governance where the distribution of power seems to be clear. However, the specific configurations and asymmetries of power within GPN are infinitely more complex, contingent and variable over time.

[2] This concern is not lost on GPN theorists, as Coe, Dicken, and Hess (2008: 290-291) note:

> Do we inevitably focus on a 'lead' firm or should we be taking a polycentric approach? Our view is that the entry point does not matter, and where the boundaries are of a GPN is a moot point. In concentrated industries, where power is wielded by a small number of firms, it may make sense to work outwards from those focal firms. In other instances, it may be equally, if not more, valid to start with a focus on small suppliers, or workers, or consumers, or government agencies and so on. This will depend on the specific focus of the research and the precise research questions that are being tackled.

[3] Although the economic, social, and environmental consequences of illegal logging and wood smuggling are very significant in Bolivia the issue is not examined in detail here since few businesspeople would discuss such practices except to say that corruption is commonplace.

[4] Although most firms could be associated with a particular network, eight defied characterization as a result of serving unique markets (e.g., non-timber forest products, fibreboard) or because the data were insufficient to categorize them.

[5] S2S lumber is surfaced only the top and bottom while S4S lumber is surfaced on top and bottom but with both edges cut and planed to a specific size.

[6] For firms that can afford it, the desire to decontextualize their operations from Bolivia drives them to set up North American or European offices, hire foreign market representatives, and/or obtain a US phone number that connects automatically to their Bolivian office. A good example of how Bolivia is essentialized by these firms can be found at http://www.forestworld.com/, the webpage for a large supplier of tropical hardwood products to US markets. This firm boasts an office in North Carolina and uses a sophisticated marketing technique that emphasizes the beauty of Bolivia's forests, the sustainability of their extraction operations, and the favorable impacts the firm has on labor and communities.

[7] For example, when a representative for a conventional GPN firm was interviewed she insisted on starting with a power-point presentation about the company, one that emphasized its technological capabilities, its supply-chain organization, and its commitment to environmentally and socially responsible forms forest management.

[8] Interview quotes are attributed to respondents in a generic fashion in order to protect the identity of the respondents (e.g., CONVGPN = conventional GPN, BROKER = brokerage network).

[9] In one case, a large flooring exporter paid for the Forest Stewardship Council (FSC) certification of a TCO in the Santa Cruz department. The success of this venture is uncertain, however, given the complexities and costs associated with FSC management and the intra-community conflicts that have arisen since the venture began.

[10] Letters of credit are commonplace, however, and the electronic bank transfers they ensure are critical for business deals to go forward.

[11] While most of these connections are Latin-Latin connections, two of the firms had unique diasporic ties; an American who had extensive relationships to the US market and an Israeli with ties to the Jewish diaspora, particularly in New York City and Israel.

[12] As one reviewer noted, migration of Bolivians to Europe was accelerated during the study period due to impending changes in the visa requirements for Bolivians travelling to the European Union.

[13] Importantly, given the rise of a new commercial elite made up of Aymaran and other indigenous peoples, this socio-cultural boundary may be beginning to erode.

[14] A good example of this positive attention was an article in the "House and Home" section of *The New York Times* that mentions the home's architect and the Bolivian firm that manufactured the wood products used in the interior (Bernstein 2007).

[15] Associations can be well organized and governed by a constitution that details the group's goals, the rights afforded to and obligations of members, how dues, rents, and electricity bills are paid, and the means through which decisions are made and internal conflicts resolved. Constitutions may also contain clauses that require members "to respect each others' exclusive furniture models." (Miami Shopping Center Association, n.d.). As one associative businessperson noted:

> Each member must have his/her specialty, special models [designs], and his/her own creations. You do not copy other people's models. [ASSOC1]

[16] The challenge of obtaining sufficient quantities and qualities of wood is driving many associational businesspeople to use *tableros agglomerados* or MDF (medium-density fibreboard)

and products derived from melamine (e.g., Formica) as substitutes for hardwoods. Although these substitutes are more readily available, more consistent in quality, and, in some cases, allow for the application of novel types of finishing, the skills and tools needed to work effectively with them are not the same as those required for hardwoods. This raises further questions about the kinds of international markets that might be accessible to associative firms in the future.

[17] Building codes are particularly important for door manufacturers who must meet requirements for hurricane and tornado protection when doors are shipped to the Midwest and Florida.

References

Alliance for Responsible Trade. 2009. A People's Trade Agreement. http://www.art-us.org/PTA_html (last accessed 16 July 2009).

Amin, A. 2002. Spatialities of globalisation. *Environment and Planning A* 34(3):385-399.

Amin, A. and P. Cohendet. 2004. *Architectures of Knowledge: Firms, Capabilities, and Communities*. Oxford: Oxford University Press.

Assies, W. 2003. David versus Goliath in Cochabamba: Water rights, neoliberalism, and the revival of social protest in Bolivia. *Latin American Perspectives* 30 (3): 14-36.

Barany, M., A. L. Hammett, P. Araman. 2003. Lesser used species of Bolivia and their relevance to sustainable forest management. *Forest Products Journal* 53(7-8):1-6.

Bathelt, H. 2006. Geographies of production: growth regimes in spatial perspective 3—toward a relational view of economic action and policy. *Progress in Human Geography* 30(2):223–236.

Bathelt, H. and J. Glückler. 2003. Toward a relational economic geography. *Journal of Economic Geography* 3(2):117-144.

Bernstein, F. A. 2007. A Retreat in Ulster County, Shipped Partly From Bolivia. *The New York Times* 14 June 2007 http://www.nytimes.com/2007/06/14/garden/14boli.html (last accessed 17 July 2009).

Bridge, G. 2008. Global production networks and the extractive sector: Governing resource–based development. *Journal of Economic Geography* 8 (3): 389-419.

Cámara Forestal de Bolivia. 2007. Propuesta de la Cámara Forestal de Bolivia: Sostenibilidad Ambiental, Gestión Social Responsable, y Rentabilidad Sustentable. [Presentation by the Chamber of Forests of Bolivia: Environmental Sustainability, Socially Responsible Planning, and Sustainable Profitability]. Constitutional Assembly of Bolivia, 7 March 2007, Sucre, Bolivia. http://constituyentesoberana.org/3/propuestas/otrasprop/propuesta-camara-forestal.pdf (last accessed 12 June 2009).

Coe, N. M., M. Hess, H. W. Yeung, P. Dicken, and J. Henderson. 2004. 'Globalizing' regional development: a global production networks perspective. *Transactions of the Institute of British Geographers* 29 (4): 468–484.

Coe, N.M., P. Dicken, and M. Hess. 2008. Global production networks: Realizing the potential. *Journal of Economic Geography* 8 (3): 271-295.

Contreras-Hermosilla, A. and M. T. Vargas Rios 2002. *Social, Environmental and Economic Dimensions of Forest Policy Reforms in Bolivia.* Washington: Forest Trends.

Crenwelge, C. 2006. Bolivia: Wood Industry. Washington: United States Department of Commerce. http://bolivia.usembassy.gov/uploads/images/CkyM2t4CKJH7aeI6vGn_MQ/MRWood2006.pdf (last accessed 15 June 2009).

Danish International Development Agency. not dated. Informe de Evaluación Program de Cooperación Dano-Boliviano 1997–2001 [Evaluation of the Program of Cooperation Between Denmark and Bolivia 1997–2001]. http://www.um.dk/Publikationer/Danida/Espanol/EvaluacionDano-Boliviano1997-2001/index (last accessed 2 December 2009).

Dicken, P. 2003. *Global Shift: reshaping the Global Economic Map in the 21st Century.* 4th Edition. New York: The Guilford Press.

Eaton, K. 2007. Backlash in Bolivia: Regional Autonomy as a Reaction against Indigenous Mobilization. *Politics & Society* 35 (1): 71–102.

Emirbayer, M. 1997. Manifesto for a Relational Sociology. *American Journal of Sociology* 103 (2): 281–317.

Ernst, D. and L. Kim. 2002. Global production networks, knowledge diffusion, and local capability formation. *Research Policy* 31(8–9):1417–1429.

Ernst, D. and P. Guerrieri. 1998. International production networks and changing trade patterns in east Asia: the case of the electronics industry. *Oxford Development Studies* 26 (2): 191–212.

Gereffi, G. 1994. The organization of buyer-driven global commodity chains: How U.S. retailers shape overseas production networks. In *Commodity Chains and Global Capitalism,* eds. G.Gereffi and Koreniewicz M. 95–122. Westport, CT: Praeger.

——— 1999. International trade and industrial upgrading in the apparel commodity chain. *Journal of International Economics* 48 (1): 37–70.

Gereffi, G., J. Humphrey, and T. Sturgeon. 2005. The governance of global value chains. *Review of International Political Economy* 12 (1): 78–104.

Gibb, S. 2008. Microfinance's impact on education, poverty, and empowerment: A case study from the Bolivian Altiplano. Development Research Working Paper Series No. 04/2008, La Paz, Bolivia: Institute for Advanced Development Studies. http://www.inesad.edu.bo/pdf/wp04_2008.pdf (last accessed 7 December 2009).

Gibbon, P. and S. Ponte. 2005. *Trading Down: Africa, Value Chains, and the Global Economy*. Philadelphia: Temple University Press.

Gill, L. 2000. *Teetering on the Rim: Global Restructuring, Daily Life, and the Armed Retreat of the Bolivian State*. New York: Columbia University Press.

Glückler, J. 2005. Making embeddedness work: social practice institutions in foreign consulting markets. *Environment and Planning A* 37 (10): 1727–1750.

Government of Bolivia 2006a. *Plan Nacional de Desarraollo*. [National Plan for Development] http://www.ine.gov.bo/pdf/PND/00.pdf (last accessed 11 May 2009).

———. 2006b. Ley 3545: Modificación De La Ley Nº 1715 Reconducción De La Reforma Agraria [Law 3545: Modification of Law 1715: Redirection of the Agrarian Reform] http://www.inra.gob.bo/ (last accessed 1 December 2009).

Grabher, G. 2006. Trading routes, bypasses, and risky intersections: mapping the travels of 'networks' between economic sociology and economic geography. *Progress in Human Geography* 30 (2): 163–189.

Granovetter, M. S. 1973. The strength of weak ties. *American Journal of Sociology* 78: 1360–1380.

Gutierrez Rojas, V. H. and J.S. Sandoval. n.d. Informacion Technica para el Procesamiento Industrial de 134 Especies Maderables de Bolivia. Serie Tecnica XII. Ministerio de Desarrollo Sostenible y Planificacion. Santa Cruz, Bolivia [Technical Information for the Industrial Processing of 134 Timber Species from Bolivia, Technical Series XII, Minitry of Sustainable Development and Planning].

Gutierrez-Velez, V. H. and K. MacDicken 2008. Quantifying the direct social and governmental costs of illegal logging in the Bolivian, Brazilian, and Peruvian Amazon. *Forest Policy and Economics* 10:248–256.

Hadjimichalis, C. and R. Hudson. 2006. Networks, regional development and democratic control. *International Journal of Urban and Regional Research* 30 (4): 858–872.

Henderson, J., P. Dicken, M. Hess, N. Coe, and H. W-C. Yeung. 2002. Global production networks and the analysis of economic development. *Review of International Political Economy* 9 (3): 436–464.

Hess, M. 2004. "Spatial" relationships? Towards a reconceptualization of embeddedness. *Progress in Human Geography* 28(2):165–186.

Hess, M. and N. M. Coe. 2006. Making connections: Global production networks, standards, and embeddedness in the mobile-telecommunications industry. *Environment and Planning A* 38(7):1205–1227.

Hindery, D. 2004. Social and environmental impacts of World Bank/IMF-funded economic restructuring in Bolivia: An analysis of Enron and Shell's hydrocarbons projects. *Singapore Journal of Tropical Geography* 25(3):281–303.

Hughes, A., N. Wrigley, and M. Buttle. 2008. Global production networks, ethical campaigning, and the embeddedness of responsible governance. *Journal of Economic Geography* 8(3):345–367.

Humphrey, J. and H. Schmitz. Developing Country Firms in the World Economy: Governance and Upgrading in Global Value Chains. Heft 61 / 2002. 2002. Institut für Entwicklung und Frieden der Gerhard-Mercator-Universität Duisburg (INEF). INEF Report.

Instituto Nacional de Reforma Agraria. 2008. *Breve Historia del Reparto de Tierras en Bolivia* [A Brief History of the Disribution of Lands in Bolivia] http://www.inra.gob.bo/ (last accessed 10 December 2009).

Inter-American Development Bank. 2002. Politicas de Apoyo a la Pequeña Empresa en 13 Paises de America Latina, Informe de trabajo, Diciembre 2002 [Policies Supporting Small Enterprise in 13 Countries of Latin America, Working paper, December 2002]. http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1441696 (last accessed 2 December 2009).

International Tropical Timber Organization 2009. *Tropical Timber Market Report.* 14(22): 16–30 November 2009.

International Trade Centre. 2009. Trade statistics for Bolivia. http://www.intracen.org/menus/countries.htm. (last accessed 15 June 2009).

Johns, J. 2006. Video games production networks: Value capture, power relations and embeddedness. *Journal of Economic Geography* 6(2):151–180.

Jones, A. 2008. Beyond embeddedness: economic practices and the invisible dimensions of transnational business activity. *Progress in Human Geography* 32(1):71–88.

Klooster, D. 2006. Environmental certification of forests in Mexico: The political ecology of a nongovernmental market intervention. *Annals of the Association of American Geographers* 96 (3): 541–565.

Kohl, B. 2002. Stabilizing Neoliberalism in Bolivia: Popular Participation and Privatization. *Political Geography* 21449–472.

———. 2006. Challenges to Neoliberal Hegemony in Bolivia. *Antipode* 38 (2): 304–326.

Köppen, V. 2008. Land regularization, land titling and cadastre in rural Bolivia with special regard to communal and indigenous lands. Eschborn, Germany: Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) [German Technical Cooperation].

La Razon. 2008. Carpinteros de El Alto fabrican muebles más finos y ganan más. *La Razon* 1 June 2008, B2.

Larson, B., R. Madrid, R. A. Mayorga, and J. Varat. 2008. Bolivia: Social movements, populism, and democracy. *Woodrow Wilson Center Update on the Americas,* No. 2, August.

Latour, B. 1986. The powers of association. In *Power, Action, and Belief: A New Sociology of Knowledge?,* ed. J.Law. 264–80. London: Routledge & Kegan Paul.

Laurie, N. and S. Marvin. 1999. Globalisation, neoliberalism, and negotiated development in the Andes: water projects and regional identity in Cochabamba, Bolivia. *Environment and Planning A* 31(8):1401–1415.

Leitner, H., E. Sheppard, and K. M. Sziarto. 2008. The spatialities of contentious politics. *Transactions of the Institute of British Geographers* 33 (2): 157–172.

Liu, W. and P. Dicken. 2006. Transnational corporations and 'obligated embeddedness': Foreign direct investment in China's automobile industry. *Environment and Planning A* 38 (7): 1229–1247.

Miami Shopping Center Association. not dated. Reglamento Interno: Comercial Shopping Miami Center Planta Baja II: Sector Muebles [Internal Regulations: Miami Shopping Center Ground Floor II: Furniture Sector].

Murdoch, J. 2006. *Post-structuralist geography: A guide to relational space*. Sage: London.

Murphy, J.T. 2006. Building trust in economic space. *Progress in Human Geography* 30(4):427–450.

———. 2008. Economic geographies of the Global South: Missed opportunities and promising intersections with development studies. *Geography Compass* 2 (3): 851–873.

Murphy, J.T. and S. Schindler. forthcoming. Globalizing development in Bolivia? Alternative networks and value-capture challenges in the wood products industry. *Journal of Economic Geography*.

Pacheco, P. 2006. *Descentralizacion Forestal en Bolivia: Implicaciones en el Gobierno de los Recursos Forestales y el Bienestar de los Grupos Marginados*. [Decentralization of Forests in Bolivia: Implications for the governance of forest resources and the well-being of marginal groups] La Paz: Center for International Forestry Research/International Development Research Centre.

Peck, J. 2005. Economic sociologies in space. *Economic Geography* 81 (2): 129–175.

Perreault, T. 2006. From the *Guerra Del Agua* to the *Guerra Del Gas*: Resource Governance, Neoliberalism and Popular Protest in Bolivia. *Antipode* 38 (1): 150–172.

Pollard, J., C. McEwan, N. Laurie, and A. Stenning. 2009. Economic geography under postcolonial scrutiny. *Transactions of the Institute of British Geographers* 34:137–142.

Price, S. and P. Pinell. 2007. Setting the Bolivian context. *The Forests Dialogue on Pro-Poor Commercial Forestry in Bolivia*. New Haven, CT: The Forests Dialgoue.

Sachs, J. 1987. The Bolvian Hyperinflation and Stabilization. *The American Economic Review* 77 (2): 279–283.

Schreiner, M. and G. Woller. 2003. Microenterprise development programs in the United States and in the developing world. *World Development* 31 (9): 1567–1580.

Schroeder, K. 2007. Economic globalization and Bolivia's regional divide. *Journal of Latin American Geography* 6 (2): 99–120.

Sheikh, P. 2007. Illegal Logging: Background and Issues. Congressional Research Service Report for Congress, 19 March 2007.

Sheppard, E. 2002. The spaces and times of globalization: Place, scale, networks, and positionality. *Economic Geography* 78 (3): 307–330.

Sklair, L. 2001. *The Transnational capitalist class.* Oxford: Blackwell.

Swiss Agency for Development and Cooperation 2004. Bolivia 2004–2008: Programa Por País De La Cooperación Suiza Para El Desarrollo [Bolivia 2004–2008: Swiss Country Program for Development]. http://www.cooperacion-suiza.admin.ch/bolivia/es/Pagina_principal/Orientacion_estrategica_2004_2008 (last accessed 2 December 2009).

Taylor, P. L. 2006. *Country case study: Forest tenure and poverty in Bolivia*. Bogor, Indonesia: Center for International Forestry Research.

Thiele, G. 1995. The displacement of peasant settlers in the Amazon: The case of Santa Cruz, Bolivia. *Human Organization* 54 (3): 273–282.

Yeung, H.W. 2005. Rethinking relational economic geography. *Transactions of the Institute of British Geographers* 30 (1): 37–51.

———. 2009. Transnationalizing entrepreneurship: a critical agenda for economic geography. *Progress in Human Geography* 33 (2):210–235.

Correspondence: Graduate School of Geography, Clark University, 950 Main Street, Worcester, MA 01610, e-mail: jammurphy@clarku.edu.

Table 1. Background information on the fifty-three (53) firms analyzed

Characteristic	Distribution for each characteristic (number of firms)
Location	• El Alto- La Paz (29) • Santa Cruz (24)
Primary export or manufactured product	• Rough sawn or planed timber - e.g., S2S, S4S (15) • Wood flooring or decking (8) • Home, office, or outdoor furniture (24) • Custom doors (4) • Other – toy making, plywood manufacturing (2)
Size of firm by number of employees	• Small or micro-scale – less than 20 employees (28) • Medium – 20 to 50 employees (16) • Large – more than 50 employees (9)
Gender of manager or owner interviewed	• Women (9) – 1 from a conventional-GPN firm (outdoor furniture; La Paz); 3 from brokerage firms (sawn timber; El Alto/La Paz); 3 from diasporic firms (furniture; Santa Cruz); 2 from associative firms (furniture; El Alto) • Men (44)

Table 2. The entry barriers, value creation possibilities, and upgrading strategies in Bolivia's wood product networks

Network Type	Num. of firms	Key Entry Barriers	Value creation possibilities	Unique upgrading strategies[1]
Conventional GPN	**9**	Extensive amounts of investment capital (esp. for a factory, wood extraction equipment, and/or office space); Large-firm management experience; Access to large forest concessions	• Low end – Rough sawn lumber - S2S, S4S (without Forest Stewardship Council [FSC] certification) • High end - Garden, household, and/or office furniture (with FSC certification)	FSC certification; Improvements in inventory, logistics, and supply-chain management
Brokerage	**17**	Access to international buyers, wood suppliers, and wood extractors or shipping companies	• Low end – Rough sawn lumber - S2S, S4S • High end - Specialty woods; decking; flooring	Subcontracting of value-added production activities (e.g., flooring and decking production); Supply-chain disintermediation (i.e., more direct sales to final markets)
Diasporic	**18**	Some investment capital (esp. for a workshop and/or product showroom); Design and creative capabilities; Access to skilled labor	• Low end – Custom furniture or doors for domestic market • High end - Custom furniture or doors for high-value international clients such as architects and interior designers	Developing formal product design skills; Improving the quality of skilled labor
Associative	**9**	Basic carpentry skills; Access to retail space	• Low end – Carpentry work and furniture for mass, lower-value, local markets • High end – Furniture or craft goods production for higher-end clients, government facilities, and/or non-local markets.	The use of hardwood substitutes in production (e.g., multi-density fibreboard, melamine); Relocation of factory or retail site

1. Common upgrading strategies used by the firms include: learning-by-doing; identifying market distinctions; internet-enabled information access and marketing; technology acquisitions; client-driven changes; accessing finance; developing product niches; novel marketing techniques (e.g., trade fair attendance, product catalogs); improvements in the quality of finishing work; and formal technical training.

Table 3. Network development practices in Bolivia's wood products sector

Network type	Key determinants of relational proximity to buyers or clients	Social spaces and modes of social interaction	Power relations shaping buyer-supplier ties	Local factors shaping international ties
Conventional GPN	• Adherence to TNC-driven performance standards and business conventions • Successful demonstrations of production and supply-chain management capabilities (price, quality) • Ability to downplay local challenges	• Manufacturing or warehousing facilities • Offices of international buyers • International trade fairs • Formal presentations • Formal contracts	• Transnational capitalist class positionality; Bolivian elite status • Market or modular forms of value-chain governance (per Gereffi et al. 2005) • Need for tight control over domestic supply chains • State threatening these firms	• Wood extraction costs • Ability to industrially control wood supply chain effectively • Political and social stability
Brokerage	• Reliability with respect to quality and timeliness of deliveries • Shared experiences and demonstrations of tacit knowledge of the hardwoods industry • Good reputation among wood buying community	• Forest areas, sawmills, wood processing and warehousing facilities; Cafes and restaurants • *Rueda de Negocios* event in Santa Cruz • Informal negotiations and use of letters of credit	• Brokers are positioned between domestic wood suppliers and international buyers – often have little power over either but more power over wood suppliers	• Quality of broker's ties to wood suppliers, other brokers, and wood extractors and transportation specialists
Diasporic	• Weak-ties and commonalities in national identity, language, culture, family, social class, etc. • Cosmopolitaness, knowledge of contemporary design trends • Formal design capabilities • Meeting detail, design, and quality needs of higher-end clients	• Product showrooms, trade fairs, and workshops • Offices of international clients • Informal negotiations, wariness regarding formal contracts	• Relatively horizontal and personal relationships • Class and cultural positionality important (high class counts) • Need to empower skilled labor	• Quality and availability of skilled labor • Quality of local clients
Associative	• Shared experiences and reputation • Price competitiveness • Spatial proximity	• Retail spaces in markets • Informal negotiations	• Associative firms poorly positioned vis-à-vis financial institutions, wood suppliers, and racial and class-based structures • Recent political changes offer hope for greater empowerment	• Ability to access finance and quality wood supplies • Quality of clients • Technical and financial support from NGO, donors, and the state needed to help improve capabilities and the quality of products

Table 4. Sources of discontinuity between production networks in Bolivia's wood industry

Network type	Material discontinuities	Cognitive discontinuities	Socio-cultural discontinuities
Conventional GPN	• High capital requirements • High volume production	• "Westernized" businessperson identities • Knowledge of how leading TNC organize supply chains and negotiate contracts	• Ability to conduct business negotiations that conform with the norms, conventions, and performances expected in large TNC (esp. from USA and Europe) • "Modern" management culture and intra-firm division of labor (e.g., sales and accounting depts..) • Positionality among Bolivia's traditional elite and the transnational capitalist class • Current government is viewed as a threat to survival
Brokerage	• Low capital requirements • Low volume requirements	• Tacit or experiential knowledge is critical, particular with respect to one's ability to manage local wood suppliers	• Fewer class or racial obstacles to participation, a more diverse set of actors • Informal relationships where formal contracts mean little. • A high risk and low trust business culture
Diasporic	• Relatively extensive capital investments • Need for high-quality and individualized retail space (especially furniture makers) • High quality products that demand higher prices	• Cosmopolitan, high-class, and culturally sophisticated identities • Formal design capabilities and knowledge of architectural and fashion trends	• Relatively horizontal, trusting, and personal relationships to buyers or clients • Upper-class positionality within Bolivia is important for accessing high-end clients
Associative	• Low capital requirements (production space commonly in one's home) • Shared retail space in public markets • Price competitiveness is critical in primary markets • Resources pooled with competitors	• Association (collective) membership key part of one's identity • Indigenous and working-class identities • Basic carpentry skills and knowledge of local markets	• Bonds to other association members as important as ties to clients • Lower-class and/or indigenous positionality may improve access to some markets (mainly local) while limiting access to others (such as those of diasporic firms) • Current government is seen as a critical source of support

Figure 1. Conceptualizing the socio-spatial dynamics of production network relationships

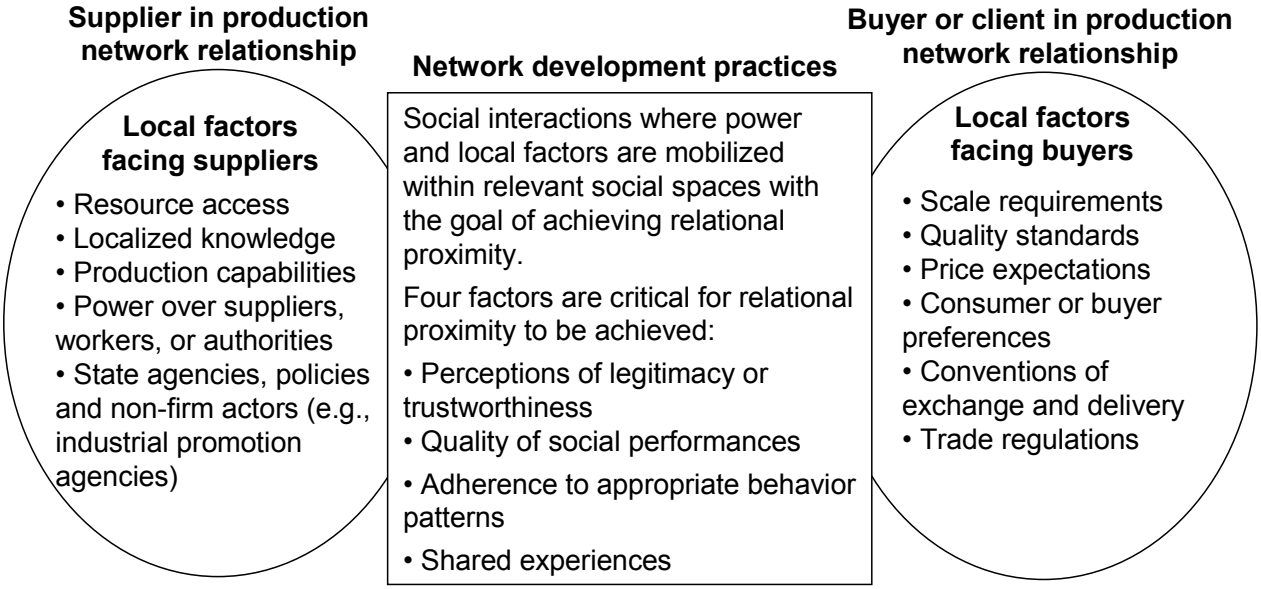

Figure 2. Forest access rights (*derechos forestales*) in Bolivia as of September 2007. *Source:* Map adapted from *Mapa de Derechos Forestales, Areas de Reserva Forestal Municipal y Areas Protegidas en Bolivia*. [Map of Forest Access Rights, Areas of Municipal Forest Reserves, and Protected Areas in Bolivia] Santa Cruz, Bolivia: Proyecto de Manejo Forestal Sostenible, BOLFOR II [Sustainable Forest Management Project, BOLFOR II]. http://www.bolfor.org/documentos/Mapa%20de%20Derechos%20Forestales.jpg (last accessed 15 December 2009).

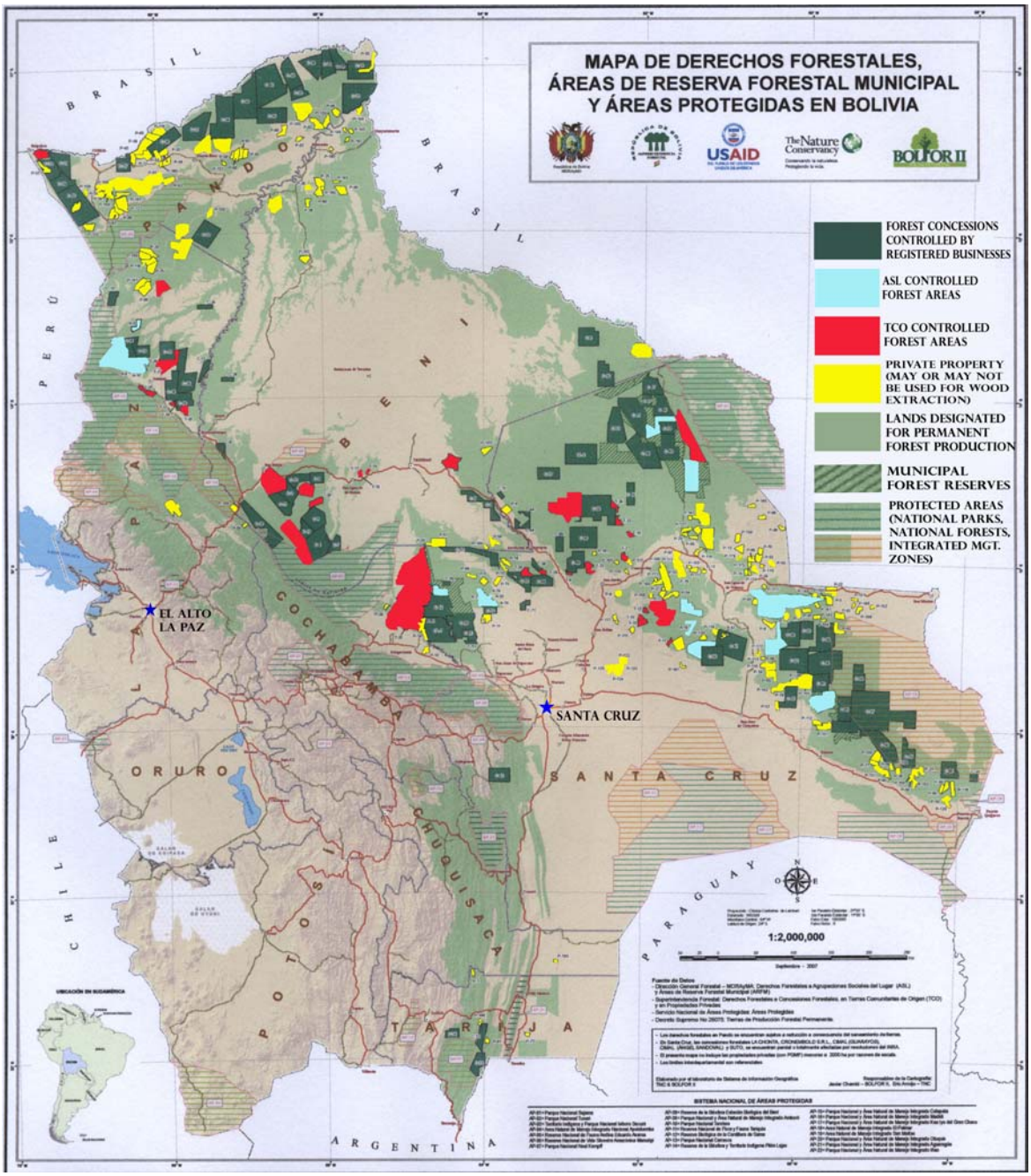

Figure 3. Buyers and wood brokers meeting at the 2007 *Rueda de Negocios* event in Santa Cruz (photos by author)

Figure 4. Examples of the work of diasporic firms that manufacture custom doors and furniture (images scanned from product catalogs of two sampled firms)

Figure 5. Newspaper article highlighting the talents of a furniture-making association in El Alto (La Razon 2008).

B2 EJECUTIVOS DOMINGO 1 DE JUNIO DE 2008 www.la-razon.com

ECONOMÍA

La falta de materia prima de primera calidad es un problema para el sector. No obstante, los emprendedores vieron que, con capacitación, pueden mejorar sus productos y lograr mejores precios. La sede de gobierno tendrá una feria este mes.

Carpinteros de El Alto fabrican muebles más finos y ganan más

EMPRENDEDORES

"Nosotros vendíamos una silla a 20 ó 30 bolivianos. Hoy, con la capacitación, hacemos un acabado de más calidad y esa silla está costando alrededor de 200 ó 300 bolivianos", señala Diego Mamani, presidente de la Asociación de Carpinteros Microempresarios de El Alto (ACMEA).

Si bien el sector productor de muebles tiene dificultades para adquirir madera de primera calidad, los microempresarios han comprendido que, al mejorar el acabado de sus productos, podrán obtener más ingresos. Y esto sólo se logra con capacitación.

En Bolivia existen 12.000 unidades productivas transformadoras de la madera, de las cuales, el 85% son micro y pequeñas empresas (mypes), precisa Waldo Ballivián, director del Instituto del Mueble Boliviano (IMB).

Ballivián indica que, si bien el sector forestal tiene éxito al vender la materia prima, los productores de muebles no están en

FOTO: ANDRÉS ROJAS / LA RAZÓN

UNA UNIDAD PRODUCTIVA ALTEÑA • En la zona Amor de Dios de El Alto, tres carpinteros trabajan en el taller de Mario Alcón Tancara, uno de los socios de la ACMEA que se capacitó.

Otras actividades para productores

- **El Alto** • En septiembre se realizará una feria del mueble en la urbe alteña. El sitio elegido es el Campo Ferial y la fecha aún está por definirse.
- **Cochabamba** • Del 31 de julio al 3 de agosto se efectuará una feria en el Campo Ferial de Alalay. También se desarrollará la 2a convención del sector.
- **Tarija** • Los organizadores de las ferias en La Paz, El Alto y Cochabamba anuncian una iniciativa similar para Tarija. Será posterior a la del Valle.
- **La Paz** • En la Facultad de Ingeniería Industrial de la Universidad Mayor de San Andrés (UMSA) se emprende el curso denominado Ciclo Productivo de Manufactura en Madera.