



GLOBALIZATION, VALUE NETWORKS, AND NATIONAL MODELS

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Introduction

As we look across the terrain of organizations producing goods and services in advanced countries, we observe enormous shifts over the past decade in the landscape and the actors. The liberalization of trade, finance, and investment across the world has opened vast new territories for the expansion of dynamic enterprises. The rise of incomes in developing countries has created large new consumer markets. Producing across national borders has shifted research, development, and manufacturing activities involving higher and higher degrees of skill and value into other societies. At the same time, economic institutions are also changing. Once vertically-integrated corporations are shrinking their boundaries and functions and focussing on core specializations. Highly qualified suppliers, contractors, and service providers are supplying more complex components, subassemblies, and services. New partnerships, commodity chains, alliances, and mergers are emerging to link producers, suppliers, and customers, both at home and abroad.

How do we understand these complex transformations and the connections among them? How do we understand their potential impact on our societies as opportunities for innovation, value creation, employment, and security are redistributed by new structural arrangements? We start from the hypothesis that two distinct processes of transformation are at work: a process of relocation of economic activities, or globalization, and a process of reorganization that is reshaping productive systems in the most advanced countries.

Overestimating and Underestimating Globalization

In focusing on the possibilities that globalization, on one hand, and technological and organizational innovation, on the other, create for transforming national models of capitalism, we are moving onto a terrain that has been largely discounted in current debates over globalization. Rather, the existence of possibilities for exploiting global resources in the context of distinctive national patterns has been denied, both by those who see globalization as leading to convergence in a “borderless world,” and by those who see globalization as a vastly exaggerated phenomenon. Both for its advocates and for its detractors, globalization commonly refers to tendencies towards the integration across borders of markets for labor, capital, goods and services and the emergence in all of these markets of a common set of economic actors. (Economist, 1992; Economist, 1995; Berger and Dore, 1996; Boyer and Drache, 1996; Castells, 1996)

Scholarly and popular controversies over globalization’s consequences for national autonomy and for societal welfare social have polarized views on the extent and impact of this phenomenon. One group of writers (e.g. Ohmae, 1990; Friedman, 1999), sees globalization as a radically new and irreversible set of changes in the international economy. In this view, new information and transportation technologies have combined with the liberalization of trade and finance and with the emergence of new competitors to

produce rising tides of trade, investment, and production that flood across national boundaries. National governments are losing the capacity to regulate these cross-border flows, and are thereby losing the ability to defend the distinctive preferences of their citizens for particular societal and economic arrangements. The German and Japanese coordinated capitalism models, the Swedish social democratic welfare state, the unique characteristics of East Asian NICs all seem destined to converge towards common market-driven patterns. Globalization in this perspective works through markets, competition, and technological diffusion to create new economic actors and linkages which undermine both the power of national states and the distinctive social and economic patterns which public power once supported. In this view the withering away of the state then becomes a self-reinforcing dynamic. As the state's legitimacy fades with its diminished ability to shape social and economic relationships at home, so too does its capacity to buffer its constituency from the gales that blow in the global economy.

These views and the conclusions that follow from them have come under heavy attack. The critics start by pointing to strong continuities of contemporary globalization with previous periods of internationalization, especially before World War One (Zevin, 1992; Strikwerda, 1993; Wade, 1996), and they deny that the national state is facing a wholly new or irresistible challenge to its authority (Hirst and Thompson, 1996; Garrett 1998a, 1998b). However compelling the theories about how increased capital mobility creates pressure to lower corporate taxes to retain and attract footloose investment—resulting in reduced public services and a shift of the tax burden to labor—the skeptical analysts have found little evidence in fact of such tax shifts or of a decline in the share of GDP that goes to public expenditure (Swank, 1998). Perhaps the strongest card in the hand of the critics is the demonstration of how nationally-centered the principal activities of even the largest multinational corporations remain, as Hirst and Thompson (1996, pp. 80-96) have illustrated in a striking set of graphs which show the heavy concentration of customers, production, research and development, in the MNC's "home society." From this perspective, economic activity remains firmly rooted in the distinctive and shaping environments of different national systems. While the interactions among national systems have become far more dense and important, the basic building blocks of each system remains the same, as does the locus of regulation in the national state. In this view, control over the pace and characteristics of increasing internationalization remains in the hands of national governments.

Beyond the constraints that globalization may exercise in macroeconomic policymaking remains the question of its impact on the institutional constellation of different national systems. At the beginning of the nineties Michel Albert's Capitalism vs. Capitalism (1991) launched a debate over the societal foundations of economic performance. Albert's book, which drew broad-brushed sketches of "Anglo-American" and "Nippo-Rhenish" models, was followed by a wave of research on the specificities of

German, Japanese, Italian, French, and other “models.”¹ (Albert, 1993; Soskice, 1991, 1999; Streeck, 1992, 1997; Hall, 1997). The common intuition underlying all of these contributions is that firms—and therefore economic performance—should be understood not as autonomous actors but as social creations, highly dependent on societal resources which they do not themselves create. As Streeck lays it out (1997, p.37), firms are “social institutions, not just networks of private contracts or the property of their shareholders. Their internal order is a matter of public interest and is subject to extensive social regulation, by law and industrial agreement.” He describes the similarly social and organized character of capital and capital markets. Even firms in the same sector, using the same technologies and making similar products, will differ systematically across societies according to the kinds of resources and frameworks those societies provide.

Is each country its own national capitalism? No, while there is diversity and pluralism of social types, this diversity is limited. The basic unit of analysis is institutional configuration—or production regime (Soskice, 1999, p. 19)—defined by the sets of rules and institutions regulating the industrial relations system, the educational and training system, the relations between companies, and the system of corporate governance and finance. Those four patterns together form a production regime, and the production regimes of the advanced industrial countries fall into limited number of types. In Soskice’s categories, there are two broad types: business-coordinated market economies (e.g., Germany, Sweden, Japan, Korea) and liberal market coordinated economies (e.g., US and Britain). The varieties of capitalism literature see more than one kind of industrial society and argues that different institutional configurations, or production regimes, generate systematically different micro-behaviors. From these institutional configurations and differences in micro-behaviors these scholars deduce a theory of comparative institutional advantage (Hall, 1997). In this perspective, different production regimes, or different capitalisms should be good at solving different kinds of coordination and production problems and hence over time should come to specialize in and excel in those activities.

The question from this perspective is whether these varieties of capitalism, each with its distinctive strengths and weaknesses, are equally well suited to performing well in an open international economy. Thus these controversial positions over globalization have far-reaching implications for further industrial development in advanced societies. A ‘borderless world’ implies that options for industrial organization (such as lean production or fragmented value chains that separate design from manufacturing) can be freely adopted by firms in any location. At the very least, the globalist view contends that the context in which firms are embedded limits the range of options they are able to

¹ In earlier contributions that provided an empirical foundation for this debate about various national capitalisms, (Dore, 1973 #234),(Maurice, 1986 #235) demonstrated that firms operating in the same industries in different societies had very different organizations that were more or less equally efficient and productive over time. They showed that organizational differences reflected broad societal characteristics.

adopt far less than in the past.

New Options for Reorganizing Production

These debates over globalization have, we believe, obscured some of the most important emergent patterns of change. Our view seeks to carve out a different analytic space. In contrast to those who claim continuity, we see new processes at work whose impact on the future remains uncertain. Over the past two decades, new trade rules, economic liberalization, the collapse of the Soviet bloc, and falling costs of transportation and communication have greatly altered the conditions of entry to foreign societies. The enlargement of market boundaries—with the creation of regional entities like the European Union, NAFTA, and MERCOSUR—have transformed terms of access. New market and investment spaces have been opened in societies once protected by “iron curtains.”

Over the same period, firms have acquired new capabilities for reorganizing their home activities *and* for moving production out of their home societies. These capabilities are both technological and organizational. Technological advances like computer simulation and digital codification of design specifications make it feasible for companies to outsource increasingly complex functions they once had to perform in-house. New economic actors—the global suppliers—have gained the capability to perform a wide range of functions for a number of customers at high levels of quality and efficiency, creating external economies of scale that span the globe. A firm that decides to produce outside its own country need no longer rely solely on its own internal capabilities, nor on the existing productive resources of the society into which it moves. Rather it can count on using global suppliers with a set of more or less ready-made (or “turn-key”) solutions, available anywhere in the world (Sturgeon, 1997). The result is a dual fragmentation of production, with companies breaking up their R&D, production, and marketing systems and moving the component parts into new locations; and companies breaking off functions once carried out within vertically-integrated organizations and acquiring these goods and services from networks of increasingly capable outside suppliers and service providers.

Indeed, it could well be that it is the very characteristics of the newly-available network options that make them more transferable across national contexts than was true of Fordist mass production. The latter was mainly based on organizational capacities and practices inside firms. Therefore the “modern corporation”—as defined by Chandler (1977)—served as the key institutional framework to realize economies of scale and of scope. With respect to value chains, the objective was to control them by integrating suppliers vertically into the large multidivisional enterprise (Coase, 1937; Williamson, 1975, 1981, 1985). But the viability of the giant corporation depended on preconditions, such as market size, which were not present everywhere.

In contrast, the more recent organizational answers to new conditions—such as market volatility, shortened product life cycles, and increased costs of innovations—are

based on different institutional preconditions. The new preoccupation of industrial organization has shifted away from the logic and ramifications of the *internal structures* of the modern corporation to the *external economies* created by the interactions among firms (Richardson, 1972; Thorelli, 1986; Johanson and Matson, 1987; Powell, 1987, 1990; Jarillo, 1988; Bradach and Eccles, 1989; Lorenz, 1992; Cooke and Morgan, 1993). We call this new focus the *value network paradigm*. The common feature of value networks is to realize external economies of scale and of scope by relying on fragmented rather than on vertically integrated forms of industry organization.

The focus on value networks provides a unique window into the transformation of both industrial and developing societies. In our view, the new options for reorganizing and relocating economic activity that value networks present provide a key analytic bridge between economic and institutional elements that operate at various scales, from industrial districts and national economies, to trade blocs and the global economy. When viewed through the lens of the value network, it becomes clear that relocation and reorganization are not discrete strategic choices. Since some value networks extend across national borders, and others have been made newly available through the shifting terms of market access, firms from outside existing networks have new opportunities to tap network capabilities without the need for home-grown organizational innovation and network building. Thus, relocation and reorganization in an increasing number of instances can be seen as complimentary forms of industrial transformation.

Of course, not all value networks operate in the same way or occupy the same economic, geographic, or social terrain. We see three types of value networks that play important roles in the world economy today: the *captive* value network, the *relational* value network, and the *turn-key* value network. Each network type has a different set of actors, has its origins in a different national context, and provides participating firms with a different set of advantages and limitations. We provide a brief sketch of each network type in the following sub-sections.

Captive Value Networks

Captive value networks rely on dominant lead firms to coordinate tiers of largely captive suppliers (Schonberger, 1982; Dore, 1986; Sayer, 1986; Aoki, 1987; Sako, 1989; Womack et. al., 1990, Gilson and Roe, 1993). For example, value networks led by Japanese firms include suppliers that are likely to be highly dependent on one or a small number of key customer firms. Buyer-supplier relationships are often formed between affiliates of the same industrial group. Lead firms may make equity investments in their suppliers and over time come to dominate them financially. Lead firms often urge affiliated suppliers to adopt specific production technologies and quality control systems and provide the required technical assistance and financial support.

The advantages of such close buyer-supplier linkages are high efficiency, stimulated by technological upgrading in the supply base, close coordination of “just-in-

time” deliveries, and flexibility in the face of market volatility, as workers and suppliers are redeployed on short notice. In the context of market volatility, strong lead firms can oblige their suppliers to cut costs and output in bad times or invest in new customer-specific production capacity in good times. Lead firms support loyal suppliers through hard times and with new business in good times. Captive value networks are a key element of the “lean production system” (Womack et. al. 1990).

The interdependence of captive value networks also has disadvantages, for mutual dependence makes it more difficult and costly to begin and end supplier relationships. While this feature limits opportunism, it also make the overall system less adaptable since the ability to make and break network relationships is constrained. The “porosity” (i.e. ease and speed of information and materials flow) within the confines of the captive network may be high, but the outer perimeter of the network is resistant to linkages with economic actors outside the network, a major weakness in the context of globalization. The negative outcomes associated with captive value networks are mounting structural rigidities in the system, technological "cul-de-sacs," geographic inertia, the development of redundant offshore production systems, excessive accumulations of debt to keep the system running during extended economic downturns, and limitations in the scale and scope of external economies.

Relational Value Networks

Relational value networks are built through social and spatial proximity and especially through long term contracting relationships between firms. Embedding economic relations in social relationships can create authority relationships and behavioral norms of behavior (e.g. trust, reciprocity, reputation, peer pressure) that reduce the threat of opportunism and provide an alternative governance mechanism to the internal hierarchy of the integrated firm on the one hand and pure market relations on the other (Granovetter, 1985). Geographers (e.g. Scott, 1988; Storper and Walker, 1989) have emphasized that relational value networks tend to operate within the bounds of specific localities. The industrial districts of Italy (Brusco, 1982; Brusco and Sabel, 1983; Piore and Sabel, 1984; Brusco and Righi, 1989), the regional supply networks of Germany (Katzenstein, 1989; Sabel, 1989; Herrigel, 1993), clusters of apparel assembly sub-contractors and home-workers in the greater agglomerations of New York and Los Angeles. (Bonacich 1994; Sassen, 1987, 1988; Gereffi 1994, 1996; Taplin 1994, 1996), the family-based business networks of overseas Chinese in East Asia (East Asia Analytical Unit 1995; Gereffi 1996; Berger 1997), and even Silicon Valley (Saxenian, 1991, 1992, 1994; Luethje, 1997) are examples of places where robust relational value networks operate. Relational value networks tend to be embedded in larger socioeconomic systems, in some cases allowing the temporary redeployment of workers to agriculture or the “informal” sector when the demand requirements of buyers change suddenly.

Relational value networks can adapt to volatile markets quite rapidly. The trust, personal, and familial relationships of the community enable individuals and small firms

to take on new roles as conditions change. The manufacturing base is often fragmented into a myriad of small contractors and subcontractors specialized not only on a single stage of the manufacturing process, but often on a particular sub-process of one stage. Flexibility stems from the local concentration of extremely specialized small firms that can be recombined into multiple configurations according to changing market demand and to the requirements of the lead firms in the network. The highly fragmented organizational structure allows flexibility to meet the requirements of small batch runs, short lead times, fast delivery, and quick market entry and exit.

The drawbacks of relational value networks are high barriers to entry and geographic boundedness. As in the captive network, relational network linkages take a long time to build up, since trust, reciprocity, and shared identities can take generations to solidify. If firms remain small and the industrial structure fragmented, scale economies can fail to develop and coordination costs can be high, especially when buyers are from outside the network. The social embeddedness of the network, while providing flexibility and adaptability, limits the porosity of the network's outer perimeter and binds it to specific locations. For outside buyers to gain access to relational network's capabilities, intermediary individuals, firms, or institutions must be used. If such intermediaries are not present, relational networks can remain isolated from buyers, financing, and input sources from the outside.

Turn-key Value Networks

Many American companies have responded to the pressures of international competition by developing their own distinctive model of networked production. We call it the *turn-key value network*, because it is based on highly qualified suppliers with the capability to provide customers with end-to-end solutions (Sturgeon, 1997). Turn-key suppliers provide a wide range of production-related services, including logistics, process engineering, component purchasing, manufacturing, assembly, packaging, distribution, and even after-sales service. In some industries, such as motor vehicles, suppliers perform module and component design tasks as well (Sturgeon and Florida, 1999). The principal difference between American-centered turn-key value networks and Japanese-centered captive value networks is the *merchant* character of turn-key suppliers, which is achieved through the development of a large and diverse pool of customers. To facilitate this, turn-key suppliers often specialize in a cross-cutting *base process*, one which is used to manufacture products sold in a wide range of end-markets (e.g. pharmaceutical manufacture, semiconductor wafer fabrication, plastic injection molding, electronics assembly, apparel assembly, brewing, telecommunications backbone switching); *base component*, one which can be used in a wide variety of end-products (e.g. semiconductor memory, automotive braking systems, engine controls); or *base service*, one which is needed by a wide variety of end-users (e.g. accounting, data processing, logistics). The key point is that long term contracting relationships—although they do exist—are not required. Thus, it appears that lead firms in American-centered value networks have increased their reliance on external suppliers while retaining their traditional focus on cost

cutting, price-based supplier relationships, and competitive switching.

Value networks that rely on merchant suppliers are very permeable, allowing buyers easily to connect to and disconnect from suppliers with a wide variety of technical and geographically-specific attributes. The result is a highly flexible system characterized by fluid relationships (low barriers to entry and exit), geographic flexibility, low costs, rapid technological diffusion, and powerful external economies of scale and scope. Because the actors in turn-key value networks strive to limit interdependence, the ability to switch partners is retained. Thus barriers to entry and exit are lower in the turn-key network than in captive or relational network models, resulting in a greater degree of *organizational flexibility*. Since the merchant manufacturing capacity in the turn-key network can quickly be turned toward those brand-name firms that win in the marketplace and away from those that lose, the result is *more intensive capacity utilization and lower overall costs*. Like the other models, turn-key value networks are embedded in particular locations that support the day-to-day functioning of the network. Low entry and exit barriers, however, enable superior organizational flexibility; and that in turn allows for greater *geographic flexibility and reach*, so geographic clusters of activity can more easily be woven into wider network. As a result, such networks create new possibilities for brand-name firms to implement global-scale production strategies without FDI. In the turn-key network, market-creating innovative capacity is kept in-house by brand-name firms while market-supplying productive capacity moves into commodified external economies that can be shared by the industry as a whole, creating large external economies of scale.

There are potential drawbacks of the turn-key model. As suppliers gain in financial strength, technical and operational competence, and geographic reach—and as brand-name firms become extremely reliant on them—suppliers might take the further step of developing their own end-products in competition with their customers (Fine, 1998). This happened in the 1970s and 1980s, when American consumer electronics firms used Japanese suppliers to manufacture their products. Eventually, American firms lost control of product definition and were reduced to affixing their brand names to Japanese designed and manufactured products. These Japanese firms now dominate most consumer electronics markets, and American consumer electronics firms have all but disappeared. Another concern stems from the merchant character of turn-key networks. If suppliers work for brand-name firms that are in direct competition with one another, the possibility of technological leakage to competitors and loss of intellectual property arises. The experience of outsourcing a product's production only to find a counterfeit version appearing on the market months later is not unknown. Finally, the outsourcing of broad swaths of activities formerly performed in house raises the possibility that brand-name firms will lose process expertise that makes them more astute buyers of external services. Such expertise might turn out to be critical to ongoing success in product development. American automakers have been particularly concerned about retaining their ability to design vehicles even as they outsource huge segments of their business to large suppliers

and spin off their internal parts divisions as stand-alone merchant suppliers.

The pressure on firms to reorganize and use the advantages of these new organizational models is high. We do not argue that there is one best model, but that the three different types of value networks presented here each provide a distinct set of advantages and disadvantages for firms that use them. We also acknowledge that the value network forms presented here are not mutually exclusive; we see ample evidence of interconnection and overlap among various network types. Each network type also captures a major “industrial model” that has been put forward in the literature. Specifically, captive value networks map to “lean production” (Womack et. al. 1991), relational value networks map to “flexible specialization” (Piore and Sabel, 1984), and turn-key value networks map to the “virtual corporation” (Davidow, 1992). The benefit of projecting these industrial models into their associated network forms is draw attention to their dynamic spatial attributes, especially to their performance and impact on host and home economies when they are projected outward or woven together as global-scale economic systems.

Industrial Adaptation as Combination of Changes at Home and Abroad

We know that industrial models cannot be transplanted into new geographic settings without being altered in some way to fit their new institutional contexts. An example is the “Fordist” vertically and horizontally integrated “modern corporation,” which arose as an American organizational innovation. When it was introduced in Japan, it triggered radical organizational transformation in Japan, for the tenets of mass production were adapted to smaller consumer and capital markets (Sayer, 1986). The result was “lean production,” a system so efficient that, in many important manufacturing industries (e.g., steel, autos, electronics), it created a competitive crisis among the leading industrial firms in the United States and Europe (Womack et. al. 1990).

Beyond a process of “retrofitting” needed to adjust foreign institutions and practices to new settings, we see a more fundamental process at work today. Firms are able to reach out and acquire capabilities—organizational, technological, market access—that they cannot develop with their own resources and that are not available in their own society. By combining these new assets and capabilities with their old institutions, they both transform and preserve their old strengths (Hall 1997). Indeed, turn-key value networks some American manufacturing firms have grafted some of the tenets of lean production on to their own production system and deployed the result through their previously established international production architecture, creating a new system that is highly adaptive because it uses global, “turn-key” supply relationships to weave key production clusters into a global-scale value network based on external economies (Sturgeon, 1997).

National differences will still matter, because they shape the distinctive strengths and weaknesses of firms in the society and thus shape the fundamental strategic decisions

on reorganization and relocation of the enterprise. At the same time, firms and industrial systems that have historically been rooted in national economies have become increasingly connected, particularly as cross-border value networks have developed. International competition confronts national industries with the “best practices” of other national systems, and accelerates the rate of organizational change as firms from one nationally-based system adapt to new competitive pressure from another by adopting, however imperfectly, the organizational characteristics that are perceived as providing competitive advantages for their rivals. There is great potential for powerful forces of innovation to be unleashed as attempts at imitation combine with home-grown organizational characteristics to create new approaches to organizing production.

A crucial question arises. Can such adaptation be accomplished without sacrificing the institutions that reflect each country’s historical consensus on how to accommodate market capitalism within society? There are at least two possible outcomes. If adaptation cycles continue to become shorter and more intense over time, the changes we are seeing today may drive production systems everywhere toward convergence around a more common organizational model. Over the long term, national production systems will gradually lose their distinctive historical characteristics as global economic integration thicken cross-border linkages among enterprises. In this scenario, the distinctive features of national production models would fade away as a global pattern takes shape.

Alternatively, the adoption and adaptation of parts of industrial models from other places, such as the three outlined above, may well be possible within the institutional context of different national systems. They could remain distinctive and perhaps even divergent as industrial practices developed in other places are absorbed and transformed on an ongoing basis. The impact of tapping into practices and value networks emanating from outside national systems could reinforce national differences if firms could access organizational resources not available within their own society and thus compensate for traditional weaknesses. The potential for this is especially high when adoption and adaptation spur innovative organizational forms that lead to superior economic performance. The key question is whether elements—or “modules”—of organizational models developed in other places can be incorporated in new settings without the full institutional panoply that supported the functioning of these modules on their home terrain?

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