

**TRIBES, INSTITUTIONS, MARKETS, NETWORKS:**

**A Framework About Societal Evolution**

**David Ronfeldt**

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## PREFACE

This paper provides an interim overview of a framework that I have been trying to develop about the evolution of societies. The initial exposition of the framework appeared in a draft: David Ronfeldt, "Institutions, Markets, and Networks: A Framework about the Evolution of Societies" (RAND, DRU-590-FF, December 1993). That draft focused on the three forms of organization noted in its title, and mentioned that the tribal form should be added to the framework. This paper elaborates on all four forms of organization.

The work on this paper was supported by RAND, using its own corporate research funds. The views expressed herein are those of the author, and do not necessarily reflect the opinions or policies of RAND's research sponsors.

This paper will eventually be followed by further reports on the framework, its elements and implications. Meanwhile, comments are invited.

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## TRIBES, INSTITUTIONS, MARKETS, NETWORKS: A FRAMEWORK ABOUT SOCIETAL EVOLUTION

David Ronfeldt\*

A key proposition about the information revolution is that it favors and strengthens “network” forms of organization. This makes sense because the new information and communications technologies—e.g., fax machines, electronic mail (e-mail), and computer conferencing systems—enable dispersed, often small actors to connect, coordinate, and act jointly as never before. The proposition is increasingly validated by the rise of web-like networks among environmental, human-rights, and other activist nongovernmental organizations (NGOs), among businesses that form strategic partnerships, and among interagency groups that operate at many levels of government around the world. In general, nonstate actors are ahead of state actors at using the new network designs.

Power and influence appear to be migrating to actors who are skilled at developing multiorganizational networks, and at operating in environments where networks are an appropriate, spreading form of organization. In many realms of society, they are gaining strength relative to other, especially hierarchical forms. Indeed, another key proposition about the information revolution is that it erodes and makes life difficult for traditional hierarchies.

This trend—the rise of network forms of organization—is still at an early stage, but it is already a very important topic for theoretical research and policy analysis.<sup>1</sup> A lot of interesting work can be done just by focusing on this trend by itself. At the same time, the trend is so strong that, projected into the future, it augurs major transformations in how societies are organized—if not societies as a whole, then at least key parts of their governments, economies, and especially their civil societies.

The trend thus raises questions not only about the importance of the network form by itself, but also relative to other forms of societal organization. The rise of the network form

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<sup>1</sup>These brief introductory remarks skirt the question of just what is a “network.” I will address that in a future paper. Meanwhile, some clarifications appear later in this paper, and in Ronfeldt (1993) and Arquilla & Ronfeldt (1996b forthcoming).

should be analyzed partly in terms of how it is interwoven with, and related to, other basic forms of societal organization. But what are those other forms?

This paper is motivated by wondering how far these observations may be pushed. The result is a nascent theoretical framework for helping understand the long-range evolution of societies. This paper outlines the framework, notes some of its dynamics, and concludes by commenting on some policy implications.

## **FORMS UNDERLYING THE ORGANIZATION OF SOCIETIES**

What forms account for the organization of societies? How have people organized their societies across the ages? The answer may be reduced to four basic forms of organization, as depicted in Figure 1:

- the kinship-based tribe, as denoted by the structure of extended families, clans, and other lineage systems;
- the hierarchical institution, as exemplified by the army, the (Catholic) church, and ultimately the bureaucratic state;
- the competitive-exchange market, as symbolized by merchants and traders responding to forces of supply and demand;
- and the collaborative network, as found today in the web-like ties among some NGOs devoted to social advocacy.

Each form, writ large, ultimately represents a distinctive system of beliefs, structures, and dynamics about how a society should be organized—about who gets to achieve what, why, and how. Each form attracts and engages different types of actors and adherents.

Incipient versions of all four forms were present in ancient times. But as deliberate, formal organizational designs with philosophical portent, each has gained strength at a different rate and matured in a different historical epoch over the past 5000 years. Tribes developed first, hierarchical institutions next, and competitive markets later. Now collaborative networks appear to be on the rise as the next great form of organization to achieve maturity.

The rise of each form is briefly discussed below, as prelude to assembling the four in a framework—currently called the “TIMN framework”—about the long-range evolution of societies. The persistent argument is that these four forms—and evidently only these<sup>2</sup>—underlie the organization of all societies, and that the historical evolution and increasing complexity of societies has been a function of the ability to use and combine these four forms of governance in

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<sup>2</sup>Class, which many social scientists regard as a basic form of organization, is, in this framework, not a basic form, but a result of interactions among and experiences with the four basic forms.

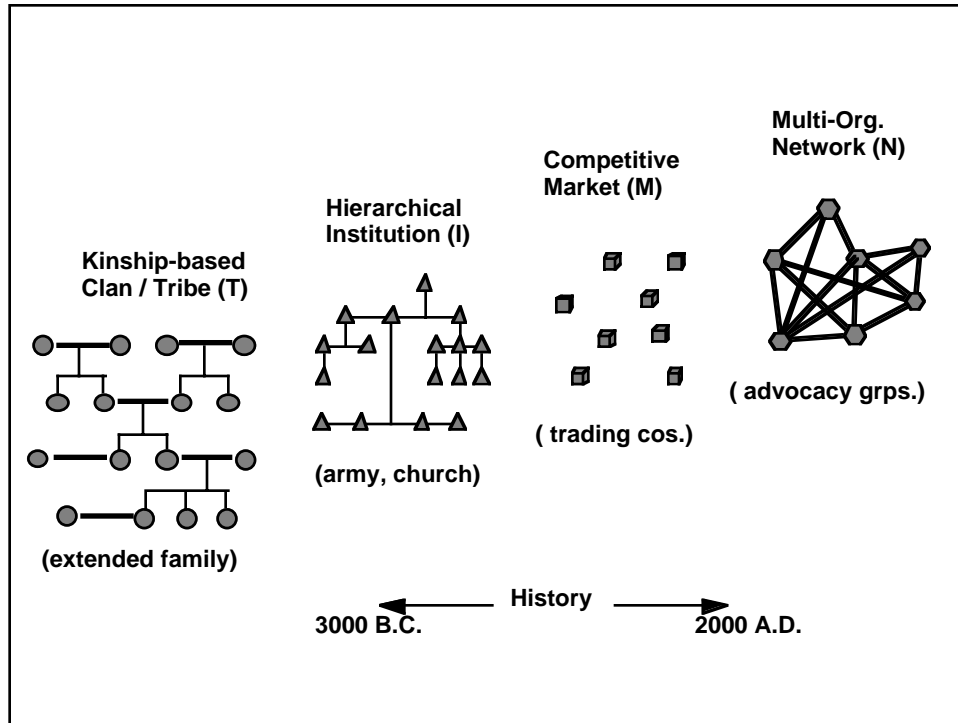


Figure 1—Basic Forms Underlying the Organization of All Societies

what appears to be a natural progression. While the tribal form initially ruled the overall organization of societies, over time it has come to define the cultural realm in particular, while the state has become the key realm of institutionist principles, and the economy of market principles. Civil society appears to be the realm most affected and strengthened by the rise of the network form, auguring a vast rebalancing of relations among state, market, and civil-society actors around the world.

As will be restated later, the ability of a society to combine these forms into a whole system is what proves crucial to its evolution. Over the ages, societies organized in tribal (T) terms lose to societies that also develop institutional (I) systems to become T+I societies, normally with strong states. In turn, these are superseded by societies that allow space to develop the market form (M), and become T+I+M societies. Now, with the network (N) form on the rise, reshaping civil society, we may be entering a new phase of evolution in which T+I+M+N societies will emerge and take the lead. To do well in the twenty-first century, an information-age society must embrace all four forms.

Before elaborating on this, some definitional issues should be noted. The terms—tribes, institutions, markets, networks—beg for clarification, and each could be subjected to long



discussion. The term “tribe” is currently out of favor among some anthropologists (cf. Fried 1967), of whom some might prefer a term like “clan.” But no matter what term is preferred, kinship remains the core, defining dynamic.

The term “institution” as used here (in the tradition of Max Weber) refers to bounded organizations that are based essentially on hierarchy, and have leaders, management structures, and administrative bureaucracies.<sup>3</sup> Since the eventual major manifestation is the “state,” some readers might prefer to substitute that term—but in my view, that could interfere with recognizing the presence of this form in other contexts, notably religious institutions and business corporations. Meanwhile, another tradition of usage (exemplified by Emile Durkheim and Talcott Parsons) treats almost any valued pattern of activity or structure—like the family, the market, voting, democracy, even popular culture—as an institution. This usage does not apply here (although the adjective “institutionalized” is used occasionally with this meaning in mind, as in noting that a market or network form has become institutionalized).

Of the four terms, “market” may be the least controversial and have the fewest alternatives (e.g., “exchange”). Some writers use it almost coterminously with “capitalism,” or do not make much distinction between the two. That is not the case with this study. Here, capitalism is viewed as a particular kind of relationship that market actors develop with state and other actors; capitalism may even work to prevent a full market system from developing.

The “network” term is subject to loose and varied interpretations. Here, it is used to refer to *organizational* networks, mainly the “all-channel” design where all members are connected to and can communicate with each other. Yet, many social scientists use the term to refer mainly to *social* networks, where “chain” and “star” designs may be more common than the all-channel designs. Some theorists also see networks as lying behind all forms of organization, making it virtually the “mother of all forms” (cf. Nohria & Eccles 1992). As used in this essay, however, the term refers to a form of organization that is distinct from a hierarchy or a market, for example (cf. Powell 1990, Powell & Smith-Doerr 1994). Sometimes, I wonder about using a *nouveau* information-age term like “cybernet” to convey my emphasis, but that could obscure the point that organizational networks sometimes played important roles in early periods of history.<sup>4</sup>

In short, I persist for now with the terms used here. But, a good alternative might be: clans, hierarchies, markets, and cybernets.

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<sup>3</sup>There can be non-hierarchical institutions, but they have never risen to the status of a major form of organization for societies.

<sup>4</sup>My focus is on “organizational networks” consisting of a variety of actors who are often dispersed, most of whom may belong to different specific organizations. An organizational network is not the same as a “networked organization,” a term that usually refers to a specific bounded organization (like a corporation) whose internal structure has evolved from a mainly hierarchical to a heavily networked design.

### The Rise of Tribes (and Clans)

The first major form to define the organization of societies is the tribe, which emerged in the Neolithic era some 5000 years ago.<sup>5</sup> Its key organizing principle is kinship—initially of blood, and later also of brotherhood.<sup>6</sup> Its key purpose (or function) is to render a sense of social identity and belonging, thereby strengthening a people's ability to band and survive.

The maturation of this form defines a society's basic culture, including its ethnic, linguistic, and civic traditions. Indeed, what happens at this level of organization has remained a basis of cultural traits well into modern periods; it also lays the basis for nationalism.

In keeping with the primacy of kinship and the codes of conduct that stem from it, the classic tribe is egalitarian—its members share communally. It is segmentary—every part looks like every other part, and there is little or no specialization. And it is “acephalous” or headless—classic tribes do not have strong, central chiefs. (The “chiefdom” is a transitional phase between tribes and early states.)

A society cannot advance far (at least not in developmental terms) with a tribal organization. It is vulnerable to clan feuds and resource scarcities, and tends to alternate between “fusion” (where clans intermarry and absorb outsiders) and “fission” (where a part hives off and goes its own way). The tribal form is particularly limited and inefficient for dealing with problems of rule and administration, as in attempting to run a large agricultural activity or govern a conquered tribe. And that takes us to the next form to evolve: the hierarchical institution.

But as I move to discuss that and later forms, the point should be kept in mind that tribe-like patterns, which once dominated the organization of societies, remain an essential basis of identity and solidarity as societies become more complex and add state, market, and other structures. This is true for societies as diverse as China, where extended family structures constantly affect all manner of political, economic, and other relations, and the United States, where an emphasis on the nuclear family and immigration from all areas of the world has resulted in an unusually loose social fabric, in which societal “kinship” often depends more on a sense of brotherhood than blood, as seen in fraternal associations.

Moreover, the tribal form, even though it eventually loses its grip on the overall governance of a society, persists in affecting the later forms. This shows, for example, in the development of aristocratic lineages and dynasties, “old-boy networks,” and *mafias* that permeate the ruling institutions of some societies at different periods of history. It shows today in how the

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<sup>5</sup>Studies consulted include Evans-Pritchard (1940), Fried (1967), Harris (1977), Johnson & Earle (1987), Sahlins (1968), and Service (1971).

<sup>6</sup>The important point that kinship may be about brotherhood as well as blood is discussed by Service (1975) under the concept of “sodalities,” and by Earle & Johnson (1987) under the concept of “fictive kinship.”

economic liberalization policies of some governments (e.g., Mexico, Syria) are rigged in part to benefit certain political or ethnic clans. The ethnic diasporas known as “global tribes”<sup>7</sup> are another modern manifestation of the persistence of this form.

People in many parts of the world remain—even prefer to remain—at this “stage” of development, and have not effectively adopted the institutional or other forms of organization discussed below. Some of the worst ethnic conflicts today involve peoples who have lost their central institutions and reverted to ferocious neo-tribal behaviors (e.g., in the Balkans), or who fight to retain their traditional clan systems and resist the imposition of outside state and market structures (e.g., in Chechnya, Chiapas, Somalia). Some dictatorships that seem to rest on a strong state are really grounded on a particular predominant clan (e.g., in Iraq). In the United States and elsewhere, urban gangs like the “Bloods” and the “Crips” in the Los Angeles area represent in part a recurrence to clannish, combative brotherhoods by youths who lack strong nuclear family ties and do not see a future for themselves in the state, market, or other structures around them.

Yet, however much a set of people may enjoy the sense of solidarity and community that a tribal life-style can provide, no society or segment of society can make much progress in modern, especially national terms solely on the basis of this form. Among other things, it cannot provide well for physical defense and security or organize people well for major economic and other undertakings.

### **The Rise of Hierarchical Institutions**

The second form to develop is the hierarchical institution.<sup>8</sup> As numerous anthropologists have written, with its rise, hierarchy supplants kinship as an organizing principle. Moreover, in the words of philosopher Jürgen Habermas (1979: 160), “Collective identity was no longer represented in the figure of a common ancestor but in that of a common ruler.”

High points of the form’s rise are the ancient empires—especially the Roman Empire—and later the absolutist states of the sixteenth century, where all of society was supposed to assume its place under a top-down ruling hierarchy. The major result of this form’s development is the state, which overwhelms the tribal design. Philosophers like Thomas Aquinas and Jean Bodin and modern theorists like Max Weber exemplify the concern with institutional order. Today, government and corporate organization charts depict what an institutional system looks like.

As seen in traditional institutions like the army, the monarchy, and the Catholic Church, the essential principle behind this form is hierarchy. It enables a society to address problems of power, authority, and administration, and to advance by having a center for decision, control,

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<sup>7</sup>The term “global tribes” is from Kotkin (1993).

<sup>8</sup>Studies consulted include Claessen & Skalnick (1978), Cohen & Service (1978), Poggi (1978), Service (1975), and Tainter (1988).

and coordination that is absent in the classic tribe. The hierarchical form excels at activities like building armies, defending a nation and expanding its domain, organizing large economic tasks, dispensing titles and privileges, enforcing law and order, ensuring successions, imposing religions, and running imperial enterprises—all activities at which the tribal form was lacking. Rulers begin to claim sovereign, even divine rights to build empires and nation-states.

Hierarchical institutions are typically centralized and built around chains of command; bureaucratization occurs as they become more elaborate and technically oriented. Partly borrowing from the tribal culture, this form thrives on ritual, ceremony, honor, and duty, especially where aristocratic dynasties take hold. Yet, this form involves a new rationality. As Weber (e.g., 1947 [1922]) has spelled out, the development of authoritative institutions to govern a society involves, among other things, administrative specialization and differentiation, professionalization of office cadres, replacement of ascriptive by achievement criteria, and the development of sanctioned instruments of coercion that spell an end to the egalitarianism of the tribal form.

War and religion proved great rationalizers of hierarchy. For example, in Europe, following the collapse of the Roman Empire and the reversion to feudal systems, the Catholic Church became the most powerful hierarchy, while under various monarchies the army (or armies) gradually developed as the key agency of the future nation-state. As the two hierarchies—Church and State—vied to dominate all manner of political, economic, social, and other affairs, they came into conflict. By the seventeenth century, the State pushed the Church aside, and the nation-state became the dominant actor in Europe—a trend that culminated in the Treaty of Westphalia ending the Thirty Years' War.

Eventually, concepts of citizenship and individual rights would emerge to challenge the regimes based on feudalism and absolutism. Additional concepts would also arise about the separation and balancing of powers, federation and confederation, elections, and the rule of law, leading eventually to a loosening of hierarchical designs and the emergence of liberal democratic institutions. Nonetheless, the basic patterns of hierarchy persist into the modern era, whether a society and its ruling institutions come to be called democratic or autocratic, individualist or collectivist, or by other names. (This form also persists in the rise of multi-divisional business corporations.)

Two points bear emphasis to conclude this sketch. First, history speaks to the impossibility for a single hierarchy to rule an increasingly complex society and all its political, economic, and other affairs indefinitely. Nonetheless, rival hierarchies—for example, Church and State—may coexist if they define bounded realms and stay out of each other's terrain.

Second, the hierarchical design proves to have a key limitation: It cannot process complex exchanges and information flows well. This shows up most in the area of economic transactions,

which become too complicated for monarchies and their bureaucracies to control in detail. They have increasing difficulty dictating terms and prices in a productive, acceptable manner. This proves particularly the case with long-distance trade within and beyond a country's borders; as it grows, traders and merchants who had operated at the behest of a state work to break free of autocratic controls and to go independent. Thus, the institutional paradigm of governance begins to fail in the economic realm, and gives way to the rise of the next great form: the market.

### **The Rise of Competitive Markets**

That takes us to the third form to mature: the competitive market.<sup>9</sup> There were marketplaces in ancient times (e.g., the Greek *agora*), but "the market" as a philosophical and organizational concept does not arise until the eighteenth century, on the eve of the industrial revolution, when the writings of Scotland's Adam Smith and the French *Physiocrats* explain that a market economy will function as a self-regulating system if left alone by the state (as well as by big business monopolies). Then we see a transition in Europe from mercantilism, where the state dominates the market, to capitalism, where market actors may try to dominate state actors—and in the process, mercantilism is outperformed. We also see a separation of the state and market realms, and of the public and the private sectors.

Compared to the tribal and institutional designs, the market engages a very different, even contradictory set of principles. Its essential principle is open competition among private interests that are supposed to behave freely and fairly. Its strength is that it enables diverse actors to process diverse exchanges and other complex transactions better than they could in tribal and hierarchical systems. This happens to be appropriate for trade, commerce, and investment; and the result is the market economy. At its best, this form leads to a productive, diversified, innovative economy, overcoming the preferences of the prior forms for collectivism and statism.

Whereas the ideal institutional system was hierarchical, the ideal market system is competitive and quite atomized. The new concept meant that property, products, services, and knowledge could be traded across great distances at terms and prices that reflected local exchange conditions rather than the dictates of rulers. It meant that people were entitled to act in terms of personal interests, profit motives, and individual rights that ran contrary to traditional notions of hierarchy. Thus, the market concept entailed new ideas about how a society should be organized.

Market principles were not meant to replace institutional ones. Indeed, the market system absorbs from the state some institutions that had been engaging in commerce and finance at the state's behest, like banks and trading companies. The market also rests on contractual and other

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<sup>9</sup>Studies consulted include Braudel (1982), Heilbroner (1967, 1993), Hirschman (1972), North (1981), and Polanyi (1944).

laws set by the state. However, the market system involves new principles for relating specific institutions to each other. In a hierarchical system, there should normally be only one of each specific institution—e.g., a society should not have more than one army or finance ministry. But in a market system, multiple competing actors may be the norm—there can be many banks and trading companies.

While the market was not supposed to supplant the institutional system, it does displace it from dominating the economic realm. It limits the institutional system's scope of activity and increasingly confines it to the realm of the state. In the eighteenth- and nineteenth-century nation-states where the market system took control of economic transactions, the institutional system retained its hold on the state, for its functioning depended on hierarchy and still continues to do so.

Thus the point to emphasize is not one of competition and conflict between the two forms of organization, but combination. A society's ability to combine these distinctive forms of governance, many of whose principles contradict each other, renders an evolution to a higher level of complexity. It also expands a society's capabilities; for the growth of the market system strengthens the power of the states that adopt that system (e.g., through increased tax revenues), even as it ensures that the state alone cannot dictate the course of economic development. The state emerges from the combination better able to focus on its core strengths, like providing for national defense, preserving law and order, and assuring that health, education, and welfare requirements are met for strengthening society as a whole—none of which the market system itself can accomplish well.

### **The Challenge of Combining the Institutional and Market Forms**

The early democratic revolutions accompanied and assured the rise of the first T+I+M societies in the eighteenth and nineteenth centuries. In the passage from feudalism to capitalism, and from centralized monarchies to democratic republics, people increasingly owed their livelihoods to the market. Societies reorganized to perform more efficiently and achieve "progress"—another idea that gained currency in this era.

England and the United States became the exemplary T+I+M societies. They apparently had an unusual ability to combine the three principles—to let them coexist and reinforce each other despite the contradictions at the core of the combination. Elsewhere in Europe, T- and I-type traditions were stronger, and collusion between state and market actors persisted through mercantilism. Yet most of these societies eventually shed the *ancien régimes* and headed toward market-oriented regimes.

Nonetheless, old T- and I-type regimes prevailed in much of the rest of the world, and many societies and cultures resisted adopting market forms. The communist revolutions of the

twentieth century, notably in Russia and China (and later Cuba), were supposed to install statist regimes that would supplant the evils of capitalism with the virtues of socialism. And the fascist revolutions in Germany, Italy, and Spain (also Argentina) were intended to protect and develop their national markets through increased state control. But from the perspective of the TIMN framework, these represent reactions to flawed local iterations of capitalist market concepts, and late efforts to re-impose T+I systems.

Many societies of Asia, the Middle East, and Latin America were too patrimonial, hierarchical, and collectivist to accept laissez-faire concepts. Their cultures remained tribal and clannish, despite signs of modernization. Although capitalist practices were introduced and spread in underdeveloped regions like Latin America, they were limited and subjected to institutional controls by the elites and state bureaucracies. Moreover, in many instances, the activities of major foreign enterprises may have done more to reinforce local hierarchical practices than to foster local market systems. In the 1980s, many countries, notably Chile, China, and Mexico, moved away from statism and toward free-market systems. But in much of the world, clannish and institutionist yearnings continued to have deep roots that will not give way to market principles without a struggle.

Since the end of the Cold War, it seems clear that a modern, advanced society needs a special combination of institutional and market systems (not to mention a sound tribal basis for its culture). Recent events represent less the victory of the capitalist market economy over the socialist command economy, than the victory of societies that learned to combine the institutional and market forms over societies that tried to keep everything hierarchical and reject market-oriented ways of doing things.

The advent of the market system, the accompanying redistribution and pluralization of power, and the feedback of market principles into the realm of the state are all important for the development of political democracy, our most valued governance system. Indeed, an ability to achieve the +M combination is essential to liberal democracy. Although some +M societies are not liberal democracies—contemporary China for example—all liberal democracies are +M societies. As Charles Lindblom once wrote:

However poorly the market is harnessed to democratic purposes, only within market-oriented systems does political democracy arise. Not all market-oriented systems are democratic, but every democratic system is also a market-oriented system. Apparently, for reasons not wholly understood, political democracy has been unable to exist except when coupled with the market. An extraordinary proposition, it has so far held without exception. (Lindblom 1977: 116)

The TIMN framework helps explain the presence of market systems in all existing democracies. For democracy to occur, the framework requires not only the addition of the forms but also a feedback of the latest form, in this instance the market, into the realm of the earlier

form, e.g., the state. The democratic revolutions of the eighteenth, nineteenth, and twentieth centuries involved political demands for individual rights, representation, popular assembly, and governmental accountability—ideas that challenged the traditions of top-down hierarchy. Such demands arose in response to autocratic rule, and the ideas behind them are mainstays of political philosophy. But from the viewpoint of the TIMN framework, these ideas took root not only because they appeared in the realm of political institutions, but more because they represent a feedback into that realm of ideas whose vigor depended on the victory of the market system and the increasing power of its actors. It is no wonder that political democracy and free-market economics arose together, or that people speak of legislative and electoral processes as a “political market.”

Yet, despite all its strengths and contributions to the advance of society, the market system has a key limitation of its own: It contributes to creating social inequities, and does not prove adept at addressing them. As in the case of the earlier forms, the sharpening and the recognition of this limitation takes us to the next form to arise.

#### **Next: The Rise of Collaborative Networks**

If societies that recently began building democratic +M systems fail and revert to T+I regimes (a possibility in Latin America or Eastern Europe), and if older T+I societies continue to decay into tribal and clan forms (as in the Caucasus and the Balkans), the world will remain troublesome for today’s advanced, democratic, T+I+M societies. But they also face another challenge: Theirs is not the highest level of complexity attainable; societal evolution has not ceased. The tribal, institutional, and market forms have long ruled the organization and advance of society, and some analysts have recently thought that this would spell the end of the story. However, as noted earlier, yet another form is on the rise around the world: the information-age network, especially the all-channel design.<sup>10</sup>

Its key principle is heterarchic (or, to offer another term, “panarchic”) collaboration among members who may be dispersed among multiple, often small organizations, or parts of organizations. Network designs have existed throughout history, but multiorganizational designs are now able to gain strength and mature because the new communications technologies

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<sup>10</sup>Studies consulted include Chisholm (1989), Gerlach (1987), Hecló (1978), Kelly (1994), Knoke (1990), Nohria & Eccles (1992), Powell (1990), and Powell & Smith-Doerr (1994) on network organizations; Shils (1991) and Walzer (1991) on the traditions of civil society; and Brecher, Childs, & Cutler (1993), Drucker (1993, 1994), Frederick (1993), Kumon (1992), Salamon (1994), Spiro (1995), Thorup (1991, 1993, 1995), and Wapner (1995) on the rise of civil-society actors who are networked. Rifkin (1995) provides an extended discussion of the “third sector” concept. Rothschild (1995) sounds a cautionary note about the “civil society strategy.” The little-noted writings of Gerlach & Hine (1970), Hine (1977), and Gerlach (1987) merit special mention for their early observation of the growing importance of what they identified as the “segmented, polycentric, ideologically integrated network,” or SPIN, in social movements.



let small, scattered, autonomous groups to consult, coordinate, and act jointly across greater distances and across more issue areas than ever before.

Anthropologists and sociologists have long studied *social* networks. According to a well established school of thinking, all social organizations—families, groups, elites, institutions, markets, etc.—are embedded in networks of social relations (cf. Granovetter 1985; Nohria & Eccles 1992). Yet, for this school, the network seems more the “mother of all forms” than a specific, distinctive type of complex organization.

Prior to the 1990s, scholarly writings occasionally appeared that treated the network as a specific, deliberate, even formal, *organizational* design (e.g., Chisholm 1989; Gerlach 1987; Gerlach & Hine 1970; Hecllo 1978; Perrow 1979). But such efforts were more the exception than the rule, and some were seen as being on the margins of the social sciences. In retrospect, research by anthropologist Luther Gerlach and sociologist Virginia Hine looks especially relevant for the TIMN framework and its implications for the rise of the network form and the concomitant strengthening of civil society. They concluded that many social movements in the 1960s and 1970s in the United States amounted to what they call “segmented, polycentric, ideologically integrated networks” (SPINs):

By segmentary I mean that it is cellular, composed of many different groups.... By polycentric I mean that it has many different leaders or centers of direction.... By networked I mean that the segments and the leaders are integrated into reticulated systems or networks through various structural, personal, and ideological ties. Networks are usually unbounded and expanding.... This acronym [SPIN] helps us picture this organization as a fluid, dynamic, expanding one, spinning out into mainstream society. (Gerlach 1987: 115, based on Gerlach & Hine 1970)

But while Gerlach and Hine anticipated by two decades many points about the rise and nature of all-channel network forms of organization, their work has been little noted.

Meanwhile, the network as a deliberate form of organization was long viewed, especially by economists, as inefficient and inferior (cf. Williamson 1975). Compared to hierarchies, networks (especially ones that operate like peer groups) involve high transaction costs, require dense communications, need high levels of mutual trust and reciprocity, are vulnerable to free-riders, and make for slow, complicated decision-making processes as all members try to have their say.

Only lately, and largely as a result of research by economic sociologists who study innovative corporate designs (notably, Powell 1990; Powell & Smith-Doerr 1994), has a new school of thinking about networks begun to cohere. It looks beyond informal social networks to find that formal organizational networks are gaining strength as a distinct design—distinct in particular from the hierarchies and markets that organizational economists and economic sociologists normally emphasize:

[T]he familiar market-hierarchy continuum does not do justice to the notion of network forms of organization.... [S]uch an arrangement is neither a market transaction nor a hierarchical governance structure, but a separate, different mode of exchange, one with its own logic, a network. (Powell 1990: 296, 301)

This new school of analysis, and the numerous examples and case studies it affords, serve to validate the point that network forms of organization are on the rise and becoming more viable than ever. But the new school is mostly about economic organization. (And clear, precise definitions are still lacking as to what is and is not a network.)

Whether one is talking about economic or other actors, it is increasingly clear that the information technology revolution and related managerial innovations are easing the deficiencies and increasing the efficiencies of this form. Why does the information revolution, in both its technological and non-technological aspects, favor the rise of organizational networks? In the first place, this revolution makes life difficult for traditional institutions. It erodes hierarchies, diffuses power, ignores boundaries, and generally compels closed systems to open up. This hurts large, centralized, aging, bureaucratic institutions. (This does not mean that the institutional form is in demise; hierarchical institutions of all types—including especially the state—remain essential to the organization of society. The capable, responsive ones will adapt their structures and processes to the information age. Many will evolve internally from strictly hierarchical toward new, flexible models that mix hierarchies and networks.)

Meanwhile, these same factors—the erosion of hierarchy, etc.—favor the rise of multiorganizational networks. As a form of organization, the network is very different from the institutional form (not to mention the other forms). While institutions (large ones in particular) are traditionally built around hierarchies and prefer to act alone, the new multiorganizational networks consist of (often small) organizations or parts of institutions that link together to act jointly. Building and sustaining such networks requires dense, reliable information flows. As mentioned earlier, today's information technology revolution enables this by making it possible for dispersed actors to consult, coordinate, and act jointly across greater distances and on the basis of more and better information than ever before.

The rise of the network form is at an early stage, still gaining impetus. It may be decades before this trend reaches maturity. But it is already affecting all realms of society. In the realm of the *state*, it is facilitating the further development of interagency mechanisms to address complex policy issues that cut across jurisdictional boundaries. In the realm of the *market*, it has been facilitating the growth of *keiretsus* and other distributed, web-like global enterprises and, increasingly, so-called "virtual corporations." Indeed, volumes are being written about the benefits of network designs for business corporations and market operations—to the point that

casual (and some not-so-casual) observers might presume that this is the realm most affected and benefited.

However, actors in the realm of *civil society* are likely to be the main beneficiaries. The trend is increasingly significant in this realm, where issue-oriented multiorganizational networks of NGOs—or, as some are called, nonprofit organizations (NPOs), private voluntary organizations (PVOs), and grassroots organizations (GROs)—continue to multiply among activists and interest groups who identify with civil society. Over the long run, this realm seems likely to be strengthened more than any other realm, in relative if not also absolute terms. While examples exist across the political spectrum, the most evolved are found among progressive political advocacy and social activist NGOs—e.g., in regard to environmental, human-rights, and other prominent issues—that depend on using new information technologies like faxes, electronic mail (e-mail), and on-line conferencing systems to consult and coordinate. This nascent, yet rapidly growing phenomenon is spreading across the political spectrum into new corners and issue areas in all countries.

The rise of these networks implies profound changes for the realm of civil society. In the eighteenth and nineteenth centuries, when most social theorists focused on state and market systems, liberal democracy fostered, indeed required, the emergence of this third realm of activity. Philosophers such as Adam Ferguson, Alexis de Tocqueville, and G. W. F. Hegel viewed civil society as an essential realm composed of all kinds of independent nongovernmental interest groups and associations that acted sometimes on their own, sometimes in coalitions, to mediate between state and society at large. However, civil society was also considered to be a weaker realm than the state or the market. And while theorists treated the state and the market as systems, this was generally not the case with civil society. It was not seen as having a unique form of organization equivalent to the hierarchical institution or the competitive market, although some twentieth century theorists gave such rank to the interest group.

Now, the innovative NGO-based networks are setting in motion new dynamics that promise to reshape civil society and its relations with other realms at local through global levels. Civil society appears to be the home realm for the network form, the realm that will be strengthened more than any other—either that, or a new, yet-to-be-named realm will emerge from it. And while classic definitions of civil society often encompassed state- and market-related actors (e.g., political parties, businesses and labor unions), this is less the case with new and emerging definitions—the separation of “civil society” from “state” and “market” realms may be deepening.

The network form seems particularly well suited to strengthening civil-society actors whose purpose is to address social issues. At its best, this form may thus result in vast collaborative networks of NGOs geared to addressing and helping resolve social equity and

accountability issues that traditional tribal, state, and market actors have tended to ignore or are now unsuited to addressing well.

The network form offers its best advantages where the members, as often occurs in civil society, aim to preserve their autonomy and to avoid hierarchical controls, yet have agendas that are interdependent and benefit from consultation and coordination. A multiorganizational network may become most durable—it may even have a central coordinating office and be “institutionalized”—when its members develop strategic interests in being part of it that at times override their individual interests, and when they prefer to stay in this form and not coalesce into a hierarchical institution if the network gains power and influence. Should this continue to occur, civil-society actors—not to mention “uncivil society” actors like some networked transnational criminal organizations (cf. Williams 1994, 1995)—will gain power relative to state and market actors.

The case for this view is deepening. As mentioned earlier, Gerlach and Hine found decades ago that “segmented, polycentric, ideologically integrated networks” (SPINs) have been redefining the nature of social movements in the United States. Other analysts have found that “new social movements” in Europe and elsewhere also often depend on networking. Recently, after years of studying the rise of nonprofit organizations, Lester Salamon (1994) has concluded that an “associational revolution” occurring around the world will result in a “global third sector.” Peter Spiro (1994) finds that the world is entering a “postnational era” in which NGOs will be the “prime movers” on many global issues and should be included, along with states, in international decision-making. While most NGOs pertain to a particular nation, Howard Frederick (1993) observes that a growing number have transnational designs and are working to construct a “global civil society.” Similarly, Paul Wapner (1995) heralds the advent of “world civic politics.” And according to Cathryn Thorup (1991, 1993), cross-border networking and coalition-building are especially intense among activist NGOs in North America concerned about regional economic integration. In general, these trends are most noticeable among activists who use globe-circling communications systems, like the Association for Progressive Communications (APC) and affiliated networks like Peacenet and Conflictnet.

One of the most important points for the United States, as a society on the eve of making the T+I+M+N combination, is that a non-profit, service-oriented “social” or “third” sector is emerging. Organizational theorist Peter Drucker in particular sees that “the autonomous community organization” is gaining strength as a “new center of meaningful citizenship” in the United States. And he foresees that,

the post-capitalist polity needs a “third sector,” in addition to the two generally recognized ones, the ‘private sector’ of business and the “public sector” of government. It needs an autonomous *social sector*. (Drucker 1993: 171)

Social theorist Jeremy Rifkin makes a similar point in heralding the rise of a third sector:

The foundation for a strong, community-based third force in American politics already exists. Although much attention in the modern era has been narrowly focused on the private and public sectors, there is a third sector in American life that has been of historical significance in the making of the nation, and that now offers the distinct possibility of helping to reshape the social contract in the twenty-first century. (Rifkin 1995: 239)

As these trends grow, civil-society (or the new realm's) actors should gain power relative to state and market actors at local through global levels in the coming decades, leading to a radical rewriting of relations between states and citizens. While some writers claim that this will diminish the power of nation-states,<sup>11</sup> the TIMN framework implies that the state, as the home of the hierarchical form, is an enduring, essential entity for a society. The state may grow even stronger in some respects (cf. Arquilla & Ronfeldt 1996a forthcoming; Skolnikoff 1994). The key is for governmental and nongovernmental actors to learn to cooperate better. This can help strengthen the state; but it may also mean that "nations" become as strong and well represented as "states" in policymaking processes (Thorup 1995).

In other words, the TIMN framework recognizes a dynamic in which the rise of a new form (and its realm) reduces the scope of an existing form (and realm), yet strengthens the latter's power within that reduced scope. This was the case with the rise of the market system—it constrained the state, yet enhanced the state's power. The presumption here is that this pattern will recur with the rise of the network form.

A big question is: What actors will the new realm consist of? I have focused on NGOs devoted to social issues, but there may be additional actors. Since a new realm absorbs some actors from existing realms, it seems possible that a new network realm may take non-profit health, education, welfare, and media actors away from their current associations with the state and market realms. Network designs are already on the rise among such actors.

In sum, we may be on the threshold of the emergence of T+I+M+N societies. While culture remains the key realm for tribal and other familial patterns, the state for hierarchical institutions, and the economy for competitive markets, civil society is apparently becoming the key realm for new kinds of multiorganizational networks that serve to link diverse groups and organizations. Alternatively, a new network-based realm may emerge from civil society.

While this may prove all to the good, the "cybernets" of the future may, like prior forms, have inherent limitations. Indeed, their global agendas may undermine peoples' traditional loyalties, inducing a return to the problem of how people conceive of their tribal identities.

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<sup>11</sup>Some commentators have exalted the "civil society strategy"—e.g., claiming it could bring major reductions in the power of states, and supplant military approaches to international security. For a critique of this view, see Rothschild (1995), and Walzer (1991).

### The Four Forms Compared

Table 1 offers a comparative summary of many points that have been made (plus some not yet made) about the four basic forms of organization. The table helps show that what one form is good at, another may not be. It illuminates both the contradictions and the compatibilities among the forms.

	TRIBES /CLANS	INSTITUTIONS	MARKETS	NETWORKS
KEY ERA	hunter-gatherer	agricultural	industrial	post-industrial
KEY REALM	family/culture	state/government	economy	civil society?
KEY PURPOSE	identity	power/authority	wealth/capital	knowledge?
KEY VALUE	belonging	order	freedom	justice? equity?
KEY RISK	nepotism	corruption	exploitation	deception?
IDEALIZAT'N	solidarity	sovereignty	competition	cooperation
PRODUCT	household goods?	public goods	private goods	collective goods?
MOTIVATION	family survival	higher authority	self-interest	grp. empowerm't
STRUCTURE	acephalous	hierarchical	atomized	flat, web-like
OF TIME	cyclic (myth)	past (tradition)	present (demand)	future (needs?)
OF ACTION	solidarity	command/control	exchange/trade	consult./coord.?
INTERN. TIES	tightly coupled	<----->	<----->	loosely coupled
EXT. BOUNDS	solid, closed	<----->	<----->	fluid, open
ARCHITECT.	labyrinth, circle	pyramid	billiard balls	geodesic dome
BIO. ANALOG	skin/look	skeletal system	circulatory system	sensory system
INFO. TECH.	glyphs, symbols	writing, printing	teleg., teleph.	fax, e-mail

**Table 1**  
**A Comparison of the Forms**

It should be evident from the table and the preceding discussion that each form, once it is writ large and subscribed to by many actors, is more than a mere form: it becomes a system. Each embodies a distinct cluster of values, norms, and codes of behavior—and these must be learned, and disseminated, if a form is to take root and a realm to grow around it. The rise of each form spells an ideational and structural revolution. Each is a generator of order, and involves a set of interactions (or transactions) powerful enough to define a distinct realm of activity, or at least its core. Each lays the basis for a governance system that is self-regulating, and ultimately self-limiting. What is “rational”—how a “rational actor” should behave—is

different in each system; no single “utility function” suits all systems. For example, tribes are regulated in part through marriages across lineages; this help inhibit feuds—but feuds may remain a terrible problem until kept in check by the rise of hierarchical chieftaincies.

Albert Hirschman’s (1977) study about a motivational shift in Europe from political and religious “passions” to capitalist “interests” centuries ago attests to this. So does Jane Jacobs’ (1992) study about the “guardian” and “commercial” syndromes as moral “systems of survival.” Moreover, E. E. Evans-Pritchard’s (1940) classic on the Nuer tribe reveals how distinctive values and norms shape social, economic, and political life in a segmentary lineage system.

Each form is thus associated with high ideals as well as new capabilities. And as each develops, it enables people to do more than they previously could. The table indicates this. But it should also be pointed out that the forms are ethically neutral—as neutral as technologies—in the sense that they have both bright and dark sides, and can be used for good or ill. The tribal form may breed a narrow clannishness, persisting even in advanced societies, that can justify anything, from nepotism to murder, to protect and strengthen a clan and its leaders. The institutional form can lead to dictatorial, corrupt hierarchies that act arbitrarily. The market form can allow for unbridled, unproductive speculation, massive concentrations of wealth, and the rigging of market sectors to benefit powerful capitalists. The network form can strengthen “uncivil society” by enabling subversive radical groups to mount deception campaigns, or criminal syndicates to smuggle drugs, arms, or other illicit items. In other words, it is not just the bright sides of each form that foster new value systems and shape new actors; the dark sides may do so as well. As Jacobs (1992) observes, “monstrous moral hybrids” are possible.

Finally, I would call attention to the bottom three rows of the table. One notes that each form corresponds to a distinctive architecture: Tribes and their interconnected kinship networks resemble labyrinths, and circles within circles. Institutions are often portrayed as pyramids, or stovepipes. Markets get depicted as atom-like billiard balls moving freely in space. Information-age networks are often presented as resembling geodesic domes and “Bucky balls” (named after Buckminster Fuller). These are only metaphors, but they help convey the distinctive nature and strengths of each form.

The next proposes that each form corresponds to a biological metaphor: tribes to the skin or the look of a body (a common ethnic referent); institutions to its skeletal and muscle system (as Thomas Hobbes implied); markets to its cardio-pulmonary circulatory system (as Karl Marx noted); and networks to the sensory system (as many writers propose today). Yes, there is an evolutionary, even Darwinian presumption here.

The final row indicates that the rise of each form, even though it is driven by societal conditions, is associated with a different information technology revolution. Indeed, the success of each organizational revolution depends on a corresponding information revolution, since each

form involves a different approach to information and requires bigger, better communications systems.<sup>12</sup>

The rise of the tribal form (not to mention the early states, civilizations, and empires) is associated with a symbolic revolution: the emergence of language and early writing (glyphs). The advance of the institutional form—as in the Roman Empire, the Catholic Church, the absolutist state, and their administrative and bureaucratic structures—involves a mechanical revolution: the development of formal writing and printing, first as penned script and later through the printing press. The rise of the market form and its far-flung business enterprises depends on the electrical revolution and its technologies: the telegraph, telephone, and radio.<sup>13</sup> Now, the rise of the all-channel network form is enabled by the digital revolution and its technologies: advanced telephone systems, fax machines, electronic mail (e-mail), computer billboard and conferencing systems, and related software. There is no lack of stories—they are growing in number and diversity—about how the new technologies are empowering social actors across the political spectrum.<sup>14</sup>

This is not to claim that information technology “causes” a form to rise—each form emerges in response to broad societal conditions. Yet, the information technology of the time becomes a key enabler—an essential but not sufficient condition—that may play a crucial role in the maturation and spread of a form. While the technology does not, by itself, cause a form to arise, its maturation may not happen without it.<sup>15</sup> More to the point, each technology revolution also has feedback effects that may alter, even strengthen, the older forms of organization. Thus the telephone, telegraph, and radio, which energized the rise of business markets, also extended the reach of state bureaucracies and allowed the central command of armed forces. Today’s fax and e-mail systems facilitate the rise not only of social movements but also of “global tribes,” government interagency mechanisms, and global corporations and financial markets. Indeed, some markets can now operate more like markets than ever before. But the important point

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<sup>12</sup>I emphasize information and communications, but transportation is important too. Each form’s development has required greater mobility for people as well as goods and services.

<sup>13</sup>Sources consulted on writing and printing include Eisenstein (1968, 1979), Goody (1986), Innis (1950), and Jean (1982). Sources on the effects of electricity and the telephone and telegraph include Beniger (1986), Marvin (1988), Nye (1990), and Poole (1983).

<sup>14</sup>Numerous newspaper and magazine articles attest to this. For example, Dale Russakoff, “Fax Networks Link Outposts of Anger: Discontented Citizens Find Their Voice,” *The Washington Post*, August 20, 1995, pp. A-1, A-22, reports on a successful grassroots movement by U.S. conservatives to stop what had been billed as the Conference on the States. Another example is Michael Clough, “Why nations could fear the Internet,” *Los Angeles Times*, February 4, 1996, pp. M1, M6, which argues that “the Internet is fast becoming global civil society’s chief weapon.”

<sup>15</sup>Causation, to the extent it is present, may work in both directions: A technology’s development may be as much a consequence as a cause of a form’s development, since a form’s rise may create a demand for the development and application of appropriate information and communications technologies.



remains: This latest technology revolution is enabling a heretofore weak form of organization—the multiorganizational network—to come into its own.

### **ASSEMBLING THE FORMS IN AN EVOLUTIONARY FRAMEWORK**

In short, these four appear to be the key forms that underlie, indeed enable, the organization and governance of societies. Each form is useful for something; each does something—or enables people to do something—better than could otherwise be done.

As noted earlier, all four forms have existed since ancient times. But each has developed and matured at a different rate, and there appears to be a natural progression to their emergence and combination. This appears to owe mainly to the ability of each form to respond, in turn, to a key problem (or function) that societies must face and resolve as they advance. The tribal form serves to resolve primordial problems of belonging and identity; the institutional form, problems of power, authority, and administration; and the market form, problems of increasingly complex economic exchanges. What problems the network form may be best suited to resolve are not clear; but the prior forms have generated and then failed to resolve many social—especially social equity and welfare—problems, and that seems likely to be a major part of the answer.<sup>16</sup>

While this presentation has approached each form separately, the main point is that societies advance by combining them in sequence. What matters ultimately is how the forms get added, and how well they function together. They are not substitutes for each other. Historically, a society's advance—its evolutionary progress—depends on its (i.e., its people's) ability to use the four forms and to combine them and their resulting realms into a functioning whole. Societies that achieve a new combination become more powerful and capable of complex tasks than societies that do not. A society's leaders may try to skip or deny a form (the case with Marxist-Leninist revolutionaries who opposed the market form), but any success ultimately proves temporary and futile.

### **Four Types of Societies**

A comprehensive framework about societal evolution can be discerned around these four forms. The argument leads to—and may be summarized as—a set of “formulas” where  $S_n$  refers to societies of the first, second, third, and fourth types, and T, I, M, and N refer to tribes, institutions, markets, and networks respectively:

- $S_1 = T$  — as seen in most of the world, throughout history, including recently in Somalia, Chechnya, and in modern big-city gangs;

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<sup>16</sup>The TIMN progression bears some resemblance to Abraham Maslow's (1987) “hierarchy of needs.” I thank Chris Kedzie for making this point to me.

- $S_2 = T+I$  — as epitomized by the Roman Empire at its height, by the absolutist states of the sixteenth century, and in this century by the Soviet Union and Castro's Cuba;
- $S_3 = T+I+M$  — as exemplified by England and the United States since the eighteenth century, and recently by countries like Chile, China, and Mexico that have moved to develop market economies;
- $S_4 = T+I+M+N$  — with the post-industrial democracies in North America and Western Europe being the most likely candidates for the twenty-first century.

These are not formal equations; they should be read more as depictions than mathematics. In the future, an effort will be made to define formulas that are mathematical; but work remains to be done on how best to do so, and what attributes and indicators to specify for each form and its interactions with the other forms. The framework must accommodate the fact that the nature and content of a form may vary from society to society; for example, the T form is very different in Japan than in the United States. Moreover, the equations should reflect the feedback effects that may occur when a new form arises and works to modify the nature of already established forms. The equations should also reflect the feed-forward effects that may occur when an old form's proponents work to modify the nature of a new, rising form. Thus, for example, the core, defining characteristics of the I form may be present in the second, third, and fourth types of societies, but the overall elaboration of the I form may be quite different in each type—whereas hierarchies tended to be only three or four layers deep in the Middle Ages, today they may have dozens of layers.<sup>17</sup>

Meanwhile, these depictive formulas speak to the following point: Over the ages, societies organized in tribal (T) terms lose to societies that also develop institutional (I) systems to become T+I societies, often with strong states. In turn, these get superseded by societies that allow space for the market form (M) and become T+I+M societies. Now the network (N) form is on the rise, evidently with special relevance for civil society (or a new realm emerging from it). We are entering a new phase of evolution in which T+I+M+N societies will emerge to take the lead. To do well in the twenty-first century, an information-age society must embrace all four forms—and these must function well together despite their contradictions.

This is not an easy progression for any society, since each step is bound to induce a vast rebalancing of societal forces. Every society is unique, and has to move at its own pace and develop its own approach to each form and to their combination, in a process that often requires modifying the older to adapt to the newer forms (and realms). Some societies may have great difficulty moving through the progression; others may prove more adaptable.

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<sup>17</sup>See footnote 22.

Yet, despite the uniqueness of each case, it appears that the four forms lie behind the evolution of all societies: East, West, North, and South. Western history is emphasized in this preliminary overview, but the framework appears to apply to non-Western societies too. For example, a comparative study might show that many major differences between societies within regions (e.g., between England and Italy) and across regions (e.g., between England and Japan) may be traced to variations in the nature of the tribal/clan form and its incarnations and repercussions in particular settings. As noted earlier, American “exceptionalism” owes in part to the relative weakness and diversity of its T-type bases (which may help explain American adaptability to the post-tribal forms).

The framework can accept the importance of the specific demographic, cultural, economic, military, political, and other factors and circumstances that may shape the history of a particular people. Yet, the framework posits that the significance of those factors and circumstances may depend on where a society stands in relation to the four forms. They affect how a people respond to specific factors and circumstances, which in turn may affect when and how a particular form arises and matures. The significance of a society’s particularities is tied to its standing vis à vis the four generic forms.

Furthermore, all major political systems and ideologies appear to fit into the framework. The designs that societies have assumed, such as empires and nation-states, and the “-isms” and “-ocracies” that have characterized them—such as feudalism, absolutism, mercantilism, capitalism, fascism, socialism, as well as theocracy, aristocracy, bureaucracy, and democracy—generally reduce to particular configurations of, and variations on, the four forms, their bright as well as dark sides. For example, mercantilism involves an effort by the key I system (the state) to dominate the M (commercial actors). In contrast, capitalism means that the I and M systems operate quite independently of each other, and the M may dominate the I in some respects. The two totalitarianisms—fascism and communism—both involve powerful, pervasive, centralized states, but are otherwise quite different. Fascism exalts tribal longings among its subjects and fosters strong but subordinate industrial capitalists. In contrast, communism subdues local and tribal sentiments in favor of internationalism, and eliminates the M element.

### **Related Evolutionary Frameworks and Theories**

This is not the only framework to hold that a small number (usually three or four) basic forms, modes, or patterns of organization underlie much of societal evolution. Indeed, the more I look for related studies, the more I find a fit with the work of other writers.

The fit begins with literatures on each step in the evolutionary process. The literature on the evolution from tribes to early states refers, for example, to what social anthropologist Elman Service (1975) calls the “Great Divide” between the ancient tribes and the early states and

empires, and what many anthropologists treat as the replacement of kinship by hierarchy as the key organizing principle. In the literature on the evolution of states and markets is found what economic historian Karl Polanyi (1944) evocatively calls the “Great Transformation” from the mercantile economies to the industrial-age market economies in the sixteenth through nineteenth centuries. As of now, there is little scholarly literature that anticipates the rise of a network-based realm of society; but even so, the TIMN framework is consistent with observations like Drucker’s (1993) and Rifkin’s (1995) that a third, social sector is emerging alongside the established public and private sectors.

The TIMN framework also resembles classic efforts at grand theorizing that seek to span all steps in the evolutionary process. Such theorizing is generally historical. Thus, while it may speculate that evolution has not ceased and new steps may lie ahead, it typically stops short of claiming anything so specific as the rise of network systems of organization. For example, sociologist Stephen Sanderson (1990: 224-226) concludes his critical history of evolutionist theories by stating that “there have been three fundamental evolutionary transformations in human history”: the Neolithic Revolution, the rise of civilization and the state, and the rise of capitalism from feudalism.<sup>18</sup> These correspond roughly to the T-, I-, and M-related transformations. So do economist Robert Heilbroner’s (1967) descriptions of the development of tradition-, command-, and then market-based economies. The TIMN framework does not overlap as well with something like Habermas’s (1979) association of different modes of “communicative action” with his four-part distinction about Neolithic societies, early civilizations, developed civilizations, and modern societies. But there are parallels, and his point is relevant that different types of world views, normative structures, and communication patterns attend different steps in the evolutionary process.<sup>19</sup>

The TIMN framework also has something in common with contemporary speculations that, in addition to saying something about the T, I, and M forms, mainly emphasize the rise of networks. For example, Alvin Toffler’s (1970, 1990) “waves”—a First Wave when hunter-gatherer gave way to agricultural societies, a Second Wave that led to industrial societies, and now a Third Wave of information-based societies—fit like transitional phases in the TIMN progression. Japanese futurist Shumpei Kumon’s (1992) analysis shows that modern society has evolved from creating a state system, and then a market system, to now creating a system of network organizations. Swedish sociologist Ulf Hannerz (1992) argues that “four organizational

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<sup>18</sup>Sanderson (1995), which appears to be essential reading, and which I have acquired just as I ready this paper for publication, expands at length on his analysis of this progression.

<sup>19</sup>A case may be made, as various colleagues have noted to me, that the TIMN framework has Darwinian, Hegelian, Marxian, and Parsonian aspects, but endeavoring to discuss that must be left for a future paper.

frameworks encompass most of the cultural process in the world today”—and his “form of life, market, state, and movement” frameworks correspond to the T, M, I, and N forms respectively.

At this time, the TIMN framework is just that—a framework. It does not purport to be a theory, because, among other things, it does not specify explicitly what factors “cause” or otherwise explain the TIMN progression. Many theories about the causes of societal evolution emphasize material factors, like population increases or technology innovations, and systemic dynamics like “stratification,” “differentiation,” and “intensification.”<sup>20</sup> For the TIMN framework to become a theory, its stance must be clarified regarding not only the causes of societal evolution, but also the meanings of a number of sensitive terms that appear in its exposition, especially “differentiation,” “complexity,” “adaptation,” and “progress.” The unclear or excessive usage of such terms already bedevils the reading of many frameworks and theories about the evolution of societies (cf. Sanderson 1990).

Finally, any effort to develop the TIMN framework must avoid the pitfalls of evolutionary theorizing that are so well identified by Sanderson (1990). If at times I lapse into phrasing that seems to step into some of the more egregious pitfalls he identifies—like reification, functionalism, teleology, ethnocentricity, and a presumption that progress is necessarily good—then that phrasing must be corrected and clarified in future versions. From what I can tell, there is nothing inherent in the TIMN framework that means such pitfalls cannot be avoided.

### **Dynamics Embedded in the TIMN Framework**

The TIMN framework has several distinctive features that, together, make it different from other evolutionary frameworks and theories. First, it makes a specific claim that the network is the next major form of organization to mature, and in so doing, it is oriented more toward the future than the past. This is not normally the case with scholarly writings about the evolution of societies.

Second, the TIMN framework treats the evolution of “complexity” as an explicitly additive, cumulative, or combinatorial process in which a society is able to develop various, specific sub-systems (realms) that operate according to different forms of organization and their attendant operational principles. This means the TIMN framework, like many others, emphasizes “differentiation”—but with a particular bent.

Third, despite the fact that each form is different, the framework maintains that all systemic transitions—from the first to the fourth types of societies—are subject to general dynamics. Many scholars have elaborated on the transitions from one type of society to the

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<sup>20</sup>And what are causes in one theory may turn out to be consequences in another. Thus, for example, population increases often get treated as a cause of the rise of early states—but the observation is also sometimes made that major population increases come after a state has arisen.

next—e.g., cultural anthropologists who write about tribes and early states, and political scientists or economic historians who study the development of states and markets. While the time- and place-bound particulars of each transition are significant, the TIMN framework implies that each form's rise sets in motion some systemic dynamics that get repeated each time a new form arises—irrespective of which form or transition it is.

If so, a series of propositions should be discernible that apply to all the transitions. The ones mentioned below, which are quite preliminary, are drawn from my inquiries into past progressions from T, to T+I, to T+I+M societies. For the future, it is presumed that similar dynamics will occur again—indeed, may already be reoccurring—with the progression to T+I+M+N societies.<sup>21</sup>

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*During the rise of a new form, subversion precedes addition:* Each form “brings to life” a new set of values and norms, which must spread if the form is to take root. But the values and norms, actors and issues, favored by one form tend to contradict those favored by another. Thus the transition from one type of society to another is bound to generate social contradictions and conflicts, as all sectors try to adjust to new forces and new realities.

So, when a new form arises, it may well have subversive effects on the old order, before it has additive effects that serve to consolidate a new order. Each form's emergence will disturb the old order and prevailing patterns of behavior in at least some key respects. Each may initially have radical proponents. Each may be resisted and deemed improper, even illegitimate, by defenders of the old order. Yet each new form is ultimately adopted and exploited by a broad range of actors.

*Addition spells the creation and consolidation of a new realm:* Gradually, an old form of organization gets pushed back by the new as its proponents gain space. As a new form grows in legitimacy and utility, subversion and disturbance give way to adjustment, acceptance, and accommodation—to addition. Thus, over the centuries, tribes and clans, having reached their limits of organizational capacity to cope with changing environments, gave way to hierarchical institutions, then these to competitive markets. Now, this process is recommencing with the rise of multiorganizational networks.

Each form, because of its unique characteristics and strengths, develops to create and prevail in a particular realm of society. The new form and its realm take over functions and activities for which they are best suited, and which the already established realm(s) had been

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<sup>21</sup>The focus here is on societies, but the framework may also be used to analyze corporate and other specific organizations. This may be especially the case for organizations—say the U.S. Army, or RAND, or Apple Computer, AT&T, or IBM—that are (or were) built partly around a strong “tribal” sense of identity and solidarity, such that people felt they belonged to a “family.”

performing with increasing faults and inefficiencies as societal complexity grew. It may be the case that each form must ultimately have its own realm in order to function properly; each seems “made” for differentiating a specific realm: the tribal form for a society’s basic culture, the institutional form for the state and its government, the market for the economy, and the multiorganizational network for the growth of civil society.

*Combination has system-changing effects:* As a new form and realm take root in a society, combinatorial dynamics take hold vis à vis the established forms and their realms. Systemic changes are set in motion: The new form’s realm begins to separate from the older. The new realm cuts into parts of the older, takes some actors and activities away from them, and narrows and places new limits on their scope. The new form and its realm also have feedback effects that modify the design of the older forms/realms; they go through generational changes, which include taking on some attributes of the new form and its realm, perhaps partly to adapt to its growing strength.<sup>22</sup> Nonetheless, if all goes well, the addition of a new form and its realm ultimately strengthens the older ones; they emerge stronger—their capabilities grow within their scope of activity, even though that scope is newly circumscribed.<sup>23</sup> Thus the new combination proves stronger than the old—e.g., a T+I+M society is generally stronger than a T+I society.

For example, states were structurally and procedurally transformed by liberal principles as T+I+M societies arose in Europe during recent centuries and market-like principles, such as voting in elections, penetrated the political arena. The market system drove the state out of many economic activities, in part by incorporating some actors—e.g., some banks and trading companies—that had been under the state’s hierarchy. Yet, the market system’s productivity and the tax revenues it generated strengthened the state’s ability to conduct its affairs at home and abroad. Max Weber’s writings capture the dynamic well, although he refers to capitalism more than to the market system:

On the one hand, capitalism in its modern stages of development strongly tends to foster the development of bureaucracy, though both capitalism and bureaucracy have arisen from many different historical sources. Conversely, capitalism is the most rational economic basis for bureaucratic administration and enables it to develop in its most rational form, especially because, from a fiscal point of view, it supplies the necessary economic resources. (Weber 1947 [1922]: 338-339)

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<sup>22</sup>This point about generational feedback effects imply rewriting the “formulas” along the following lines, where the subscript refers to the generational effects:

$$S_1=T_1 \quad S_2=T_2+I_1 \quad S_3=T_3+I_2+M_1 \quad S_4=T_4+I_3+M_2+N_1$$

<sup>23</sup>I am more confident about this proposition applying to the +M transition than to the +I transition, because it is not clear to me yet how T-related family and other cultural structures may get strengthened by the rise of states and markets. They do get modified by the latter, however.

This is a point that many Third World political leaders hesitate to learn as they cling to maintaining T+I types of regimes, partly out of convictions that economic liberalization will reduce state power.

Another way to think about the dynamics of combination, as suggested by an anthropologist studying the transition from tribes to states (Cohen 1978: 70, citing other authors), is as follows: Once a new form of organization is on the rise and taking root, it affects everything else around it, changing the nature of social causation and adaptation that existed before its rise. He was referring to the replacement of kinship by hierarchy as an organizing principle, but his point applies equally well to the rise of competitive market, and now to collaborative network principles that have the power to resonate throughout a society.

*Each form's maturation increases social stratification:* Each form is associated with different stratification criteria, and each step in the TIMN progression increases social stratification. Early T-type societies had a single crucial rank: kinfolk. Then, +I dynamics resulted in a division into two strata: the rulers and the ruled. Next, +M dynamics created a middle class and the tripartite system so familiar today: upper, middle, and lower classes. Projection of this progression suggests that +N dynamics will generate new "haves" and "have-nots"—with the defining referent this time being access to information, rather than to blood, power, or capital—and indeed this is already happening. More to the point, the outcome should be a new stratification system that has four standard levels. My guess is that the new level will emerge in part from what today is viewed as the upper-middle class.

*Each form has—but cannot realize—its ideal type:* Each form has its ideal type in theory and philosophy. Yet, in practice, none operates according to its ideal, at least not for long. One reason for this is the presence of the other forms, and the unavoidability of having to function in relation to them. For example, the tribal form is, by definition, paramount in T-type societies, but it is still affected by the nascent presence of the other forms, which may surface in the episodic resort to hierarchical and market behaviors, as when people temporarily follow a "big man" or exchange things with another tribe. Furthermore, professional state bureaucracies, a mature expression of the institutional design, are rarely free of clannish "office politics." A purely competitive market, free of monopoly and outside (e.g., governmental) interference and regulation, is an equally rare sight.

Another reason why a form cannot achieve its ideal type is that each new form bears within it some elements from past forms. As noted earlier, when a new form arises, it takes some actors away from prior forms, whose seeds thus remain embedded in parts of the new form. Thus, clannish dynasties infused the rise of the institutional form. Corporate enterprises like some banks and trading companies broke loose from their association with states and moved



to become part of the market systems. And today, some emerging activist cybernets seem quite tribal in nature.

*Successful combination depends on the development of regulatory interfaces:* What enables a combination of forms and their realms to work well together? It is partly the regulatory “interfaces” (laws, policies, commissions, etc.) that get developed where the realms and their activities intersect. A society’s functioning comes to depend on the nature of those intersections, and on the development of efficient, effective mechanisms to regulate them. When a new realm expands and increasingly intersects with the old, new interfaces are needed.

Regulatory interfaces not only help realms—e.g., the state and the market—to function well together; they also help those realms to remain separated and in balance, thereby preventing either from overwhelming the other. An example in the United States is anti-trust legislation that is supposed to keep business firms from becoming enormous monopolies and colluding against other businesses or the government. (In mercantilist systems, business-government collusion tends to be normal, and regulatory interfaces may look quite different from the case in United States and other highly capitalist societies.)

With the rise of civil-society cybernets, a new generation of regulatory interfaces will surely be created vis à vis government and market actors, shaping the roles that NGOs’ representatives may increasingly play in consultative and policymaking processes. Indeed, various environmental, health, consumer, and other activist “watchdog” and advocacy groups are already moving to see that such interfaces are created, particularly to constrain corporate behavior that is deemed socially counterproductive. Perhaps some cybernets in the United States will grow so large and powerful that an equivalent of anti-trust regulations gets imposed on them—at least this seems a distant possibility.

*Combination improves a society’s comparative advantages:* Each form’s (and realm’s) development imparts new advantages to a society, including vis à vis other societies. Many of these advantages have been mentioned earlier in the discussions of each form individually. More generally, it should be noted that each new combination improves a society’s transaction-processing capabilities, and what are sometimes called its “productive capacity,” “absorptive capacity,” and “carrying capacity.”

Perhaps a distinction may be made between competitive and cooperative advantages. The former often get discussed, especially in analyses about great power rivalries. But cooperative advantages are important too. The society that improves its ability to cooperate with its friends and allies is a society that may also gain competitive advantages vis à vis its rival. While the development of the institutional and market forms of organization led to an emphasis on competitive advantages, development of the multiorganizational network form may shift the emphasis to cooperative advantages. If so, this may have implications for which nations will be

most able to foster regional economic integration. Who will do better in its own neighborhood: the United States in North America, Germany in Europe, or Japan in Asia?

*Balanced combination is imperative:* Each form (and its realm) builds on its predecessor(s)—indeed, the development of each, in turn, may be crucial for the next form to rise and take root. In the progression from T through T+I+M, the rise of each new form depends on the successes and failures of the earlier forms.

For a society to progress optimally through the addition of new forms, no single form or realm should be allowed to dominate, and none should be suppressed or eliminated—some kind of balance should be sought. A society's potential to function well at a given level, and to evolve to a higher level of complexity, depends on its ability to integrate these contradictory forms into a well-functioning whole. Balanced combination is best for long-term evolution.

The forms and their realms—culture, state, market, and civil society—all have tendencies to expand their “spaces.” But bigger is not necessarily better for any realm, especially not if it leads to an imbalance relative to the other forms and their realms. The framework's implication that an advanced society should balance the forms and their realms is consistent with age-old arguments that too much government can prove inefficient and corrupting; that an unconstrained market system can exacerbate social inequalities and yield negative externalities; and that a highly mobilized civil society can turn fractious and interfere with the workings of government and business. Imbalance may bring out the worst aspects of a form; liberal democracy depends on achieving a balance that brings out the best aspects of each form.

*Incomplete adaptation may be best:* While it is important to get a new form “right” and balance it vis à vis other forms, the balance principle does not mean that complete adaptation (or adaptedness) to an environment is necessarily good for a society's potential for further evolution. As Service (1975: 314–322) notes about ancient states, empires, and civilizations, the “potential for further advance decreases in proportion to adaptive success and maturity.” This means that adaptation, though generally positive, may have “self-limiting, unprogressive, conservative” consequences if it puts a lead society totally in tune with its environment. When the environment changes, a “newer, less adapted and less stabilized society” may be better able to make breakthroughs and then bypass the leading society. In a different kind of analysis of modern societies, notably Great Britain, economist Mancur Olson (1982: 77) reaches a similar implication: “countries that have had democratic freedom of organization without upheaval or invasion the longest will suffer the most from growth-repressing organizations and combinations.” Lessons lurk in these propositions for a leading society—e.g., the United States—that wants to remain a great power and civilization while it endeavors to evolve from a +M to a +N system.

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These are sweeping generalizations, baldly stated, about some dynamics that appear to be embedded in the TIMN framework, as presently understood. A full exposition of the framework will have to clarify them. This is being worked on.<sup>24</sup>

### **SOME FUTURE IMPLICATIONS OF THE TIMN FRAMEWORK**

The framework implies that the world is headed into a volatile period in which new modes of both cooperation and conflict will take shape in the coming decades. I conclude this interim statement by briefly noting the framework's future implications in several, selected areas.

#### **New Political Systems and Ideologies Likely**

The framework implies that new types of political systems will appear in the future, as +N forces take full effect. The empire was an advanced expression of societies of the second type, the nation-state of the third type. What will be the case for the fourth type in the twenty-first century? The nature of "nations" and "states" may be quite different from what they have been (as discussed below).

The framework implies that much good will come from the growth of +N forces and societies. More and better democracies are likely to emerge from +N combinations among the advanced nations around the world. Yet, new kinds of authoritarian and totalitarian regimes may again arise from retrograde situations. Unusual hybrids of democratic and authoritarian tendencies are also possible (cf. Ronfeldt 1992). Assessing how democratic and authoritarian regimes respond to the information age may keep a new generation of social theorists and policy analysts quite busy for years to come.<sup>25</sup>

In addition, the framework implies that the rise and maturation of the network form will lead to new ideologies. Current "isms" and "ocracies" will be modified; some will be superseded, at least among the advanced societies. The emerging idea of "global civil society" already promises to yield a new ideology for center-left actors—an ideology in which the center-left, without giving up its Marxist moorings, finally accepts the existence of states and markets, and focuses instead on enlarging and strengthening civil society as a countervailing force.

#### **Endurance—and Transformation—of the State**

Various writers claim that the world is entering "the age of the network" (e.g., Lipnack & Stamps 1994), and that this means "the end of the nation-state" (e.g., Guéhenno 1995; Ohmae 1995). According to the TIMN framework, the former claim is correct, while latter is at least

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<sup>24</sup>Some propositions received partial elaboration, with examples, in Ronfeldt (1993).

<sup>25</sup>An example is a study by Chris Kedzie (1996 forthcoming) on "the dictator's dilemma": whether to welcome the information revolution for its economic benefits, or resist it for fear of losing political control.

excessive, and probably wrong, depending on how it is phrased. As noted earlier, “states” and “nation-states” should continue to do quite well in the new epoch. What may be coming to an end, if anything, is not the state or the international state system, but rather the empire and imperialism in their classic forms.<sup>26</sup>

The framework specifies that having a hierarchical institutional realm—a state—is essential for governing a complex society. The framework also says that upward evolutionary transitions will lead to a transformation, but not a demise, of that realm—its demise would violate the principle that calls for a balanced combination. Thus, a +N transformation is bound to have feedback effects that modify the nature and role of hierarchy, and foster hybrids of hierarchical and network designs in governments.<sup>27</sup> The U.S. military is experimenting with such hybrids now. Moreover, a +N transformation should result in new limits on the state’s roles and scope of action, notably regarding social issues. But the state should emerge strengthened within that newly limited scope. The rise of the market system had such effects on the state, beginning a few centuries ago; and, in recent decades, states have prevailed quite well despite predictions in the 1960s and 1970s that the rise of transnational corporations would greatly erode their power.

In the looming age of networks—assuming civil society is strengthened as the framework forecasts, or that a new network-based realm emerges from it—a new model of the state will emerge that may be relatively leaner, yet draws new strength from enhanced abilities to act in concert with civil-society actors.<sup>28</sup> In this vein, Drucker (1993) argues that the classic nation-state metamorphosed into the unwieldy “Megastate” of the twentieth century by taking on excessive social, economic and military duties, and he concludes that success in the post-capitalist age will require a different model, one that includes, as noted before, a “social sector.” It is not clear what actors may comprise a network-based sector or realm, but the TIMN framework implies that many will be non-profit, socially-minded NGOs. As noted earlier, some activities currently associated with the public or private sectors are already being redesigned into multiorganizational networks—notably in the areas of health, education, and welfare—and these seem likely candidates to migrate into the new realm.

### **Revising the Terms of Public Policy Dialogue**

Established approaches to domestic and foreign policy thinking will go through major revisions in the age of networks. One implication of the TIMN framework is that the standard choice between “government” and “the market” as the solution will become too narrow.

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<sup>26</sup>I am indebted to discussions with colleague John Arquilla about this point. He would contend that the world may be entering a “golden age” for states and nation-states.

<sup>27</sup>Ronfeldt (1992) suggests that “cyberocracies” may replace bureaucracies.

<sup>28</sup>The emphasis should be on the adverb “relatively.”

In advanced democratic nations like the United States, much public policy dialogue revolves around arguments about whether government measures, or market measures, can best resolve an issue. And indeed, the United States, like other advanced democratic societies, often strikes a balance between government and market measures in many issue areas, even as some leaders (especially the Democratic and Republican party leaders in election years) proclaim vociferously that there should be a much greater tilt in one direction or the other. Thus, many public policy debates, especially over domestic economic and social issues, are in a traditional I-versus-M mold. Economists in particular remain embedded in I-versus-M frameworks. But the social issues persist that they purport to address (e.g., in areas of health, education, welfare, drug addiction).

Part of the problem, from the perspective of the TIMN framework, is that the I-versus-M line of inquiry and debate is insufficient—increasingly so. The TIMN framework accepts that choices exist between government and market solutions. It also instructs that both are often needed, for solutions may depend on how government and market measures get combined, and how the regulatory interfaces are designed between government, market, and other actors. But the framework would broaden how and where to think about looking for solutions. It would separate out the fact that many controversial issues—especially those that concern family and culture—lie at the T (or “tribal”) level, and may be only marginally susceptible to public- or private-sector solutions. Such issues may require a different class of solutions. More to the point, the framework implies that non-profit NGOs—those that have begun to define a third, social sector—are increasingly a part of the solution, especially for monitoring and early warning about particular problems, and seeking new kinds of regulatory frameworks. In T+I+M+N societies, one may therefore hear that “the network is the solution.”

A second broad implication for public policy dialogue is that +N forces and actors will lead to a greater blurring of the boundaries between domestic and foreign policy than exists today. At the same time, the growth of transnational NGOs—and of the ability of NGOs and governments to work with each other—should turn out to be a major foreign policy asset for the democratic societies. It will afford them and their governments new ways to wield power and presence abroad.

This will affect the two major schools of international political theory and strategy: the realist and interdependence schools.<sup>29</sup> The state-centric realist school will have to continue recognizing, often to its distress, that nonstate, civil-society actors are multiplying, gaining influence, and constraining the roles of state and market actors in some issue areas. Meanwhile, the interdependence school, which has emphasized the roles of nonstate actors, will have to

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<sup>29</sup>My discussion here is adapted from Arquilla & Ronfeldt (1996a forthcoming).

accept that states will have new political and other instruments at their disposal as a result of the information revolution.

Realists have taken heart from Skolnikoff's (1993: 241-246) conclusion that, although today's scientific and technological revolutions will require the realist and interdependence schools to rethink some propositions, there is little reason to doubt that "states remain the dominant structural element in the international system." In some issue areas "it would not be difficult to construct a scenario in which the emergence of major challenges to the planet or to a large part of human society led to much greater centralization of authority in the hands of a few states in the international system."

Nonetheless, political scientist James Rosenau (1988, 1990, 1992) foresees, in terms consonant with the TIMN framework, that a new balance will be struck between state and nonstate actors in reshaping the nature of the international system. Moreover, the prospect that "states" may emerge with renewed vigor from the information revolution should not lead analysts to overlook a subtle possibility that depends on the rise of nonstate actors: According to USAID official Cathryn Thorup (1995), "nations" may get to be represented more fully than ever at regional and global meetings as a result of the increasing presence of nongovernmental actors who represent civil society. In other words, both states and nations may benefit from the advance of +N forces—but what is a "nation-state" and who gets to determine its policies will be reformulated.<sup>30</sup> Meanwhile, "sovereignty" may migrate both upward to global and downward to local levels.

### **New Epoch of Conflict and Cooperation**

Shifts in the nature of the international system, and new epochs of conflict and cooperation occur with the rise of each form. As noted above, the rise of a form (and its realm) generates new actors, interests, issues, and ideas. It enables and legitimates new modes of action. It is usually difficult—and it takes decades if not longer—for a society to incorporate a new form of organization, and relate it to ones already developed. The values, norms, and "spaces" favored by one form tend to contradict those favored by another, and these contradictions must be worked out for successful combination to occur. As all sectors try to adjust to the new forces and realities, the transition from one combination to the next thus induces not only system-wide transformations but also epochal philosophical, ideological, and material conflicts, even though new patterns of cooperation also ensue.

A society may get stuck, become distorted, or be torn apart as it tries to adapt to a new form. For example, many T+I societies resist the transition to T+I+M. The great revolutions of the twentieth century—the Mexican, Russian, Chinese, and Cuban revolutions—all occurred in

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<sup>30</sup>Ohmae (1993, 1995) identifies the possibility of "region-states" forming in some parts of the world.

T+I societies where old clannish and hierarchical structures were stressed by the spread of capitalist practices that often did more to reinforce the old structures than to pave the way for a market system. Failing to make the transition to T+I+M systems, these societies reverted violently to T+I regimes that, in all but Mexico's case, converted absolutism into totalitarianism. Today, to varying degrees, these four nations are trying anew, again with considerable internal resistance, to make the +M transition. This is testimony to the proposition that the progression is natural and cannot be denied if a society is to advance, and to the proposition that each transition engenders difficult conflicts.

Today, a few advanced democracies, notably Canada and the United States, have begun a transition to the T+I+M+N combination. This seems evident from the increasing presence of NGOs' representatives on some governmental and mixed public-private commissions in both countries. It is also evident from some social turbulence in the United States, where many internetted single-issue groups have been battling each other, as well as state and market actors, over varied policy issues. For example, networked formations played a significant role in the environmental conflict over the old-growth forests in the Northwest:

Activist groups reproduced like amoebas, multiplying by dividing. Splinter cells split again as each explored new ways to press the edge of the envelope of protest. Meanwhile, they maintained ties to one another, creating a web of relationships not unlike their beloved ecosystems themselves, giving the movement a power and diversity of which few outsiders were aware. . . .

Because these groups were small, their influence escaped public attention. But their strength derived from networking, not size, an informal cooperation fused by commitment to the same ideal . (Chase 1995: 192, 198)

Elsewhere in North America, the volatility of conditions in Mexico—where the Zapatista movement has strong support from transnational activist NGOs—owes in part to the fact that Mexico is moving to develop a T+I+M system in a part of the world that is rife with +N forces and their spillover effects.

In general, the society that succeeds at making a new combination first and best stands to gain advantages over competitors. Major epochs of war and peace appear to attend the rise and stabilization of a new form, via what becomes the hegemonic society of the time. Thus, in the West, the institutional revolution wrought by the T+I combination led to the preeminence of the Roman Empire, and to the *Pax Romana*. The seminal exemplar of the +M combination, Great Britain, imposed the *Pax Britannica*, and this transmuted into the *Pax Americana* as Britain declined and the second great exemplar of the +M combination, the United States, gained superpower status.

Who will exercise the next great Pax? According to the TIMN framework, it will be whatever nation-state (or other entity) reconfigures itself to achieve the T+I+M+N combination in

time, and with adequate capabilities, to become the hegemonic power. This may depend largely on whose government first masters the network form and learns to work effectively with internetted NGOs to project power and presence abroad. The answer may well be the United States, but that is not a given. (The answer is not likely to be an Asian power, for Asian societies tend to remain too tightly wound around traditional T-type structures to become leaders at generating and cooperating with independent, transnational NGOs.)

In any case, the advent of T+I+M+N societies, and the general effects of +N forces on all societies, means that a new generation of societal conflicts is in the making, and will expand for decades. It will not only pit states against states, but also increase conflict between state and nonstate actors (recent signs include the Zapatista-NGO movement in Mexico, and the Greenpeace-led resistance to French nuclear testing in the Pacific). More to the point, this trend spells greater conflict between nonstate and other nonstate actors. Many such conflicts will amount to “netwars”—an information-age mode of conflict (and crime) short of war in which the protagonists use network forms of organization, doctrine, strategy, and related technology (Arquilla & Ronfeldt 1993, 1996b forthcoming). Furthermore, the framework implies considerable conflict between societies (and parts of societies) that are at different stages in the TIMN progression—a point similarly made by Alvin and Heidi Toffler (1994) in their ideas about conflicts between actors who represent different “waves” of development.

New approaches will be needed for conflict anticipation, prevention, and resolution. I have emphasized the roles that NGOs may increasingly play in all this. But there is a broader point to be made: Largely because of the information revolution, the advanced societies are on the threshold of developing vast new sensory apparatuses for watching what is happening in their own societies and elsewhere around the world. These apparatuses are not entirely new, for they consist partly of established government intelligence agencies, corporate market-research departments, news media (e.g., CNN), and opinion-polling firms. What is new is the looming scope and scale of this sensory apparatus. It increasingly includes NGOs who watch and monitor and report on what they see in all sorts of issue areas. Moreover, early warning is an increasing concern of disaster-relief and humanitarian organizations.<sup>31</sup>

Much of the literature about redesigning organizations for the information-age focuses on production—on improving productivity, or manufacturing something new like the Boeing 777 jetliner. Yet, does this not reflect a lingering industrial-age mentality? Production organizations remain a crucial part of the organizational ecology. However, we should also be thinking about “sensory organizations.” Sensory functions are quite different from production functions, and require different modes of organization—e.g., more networks connected to the world outside an

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<sup>31</sup>I am indebted to Kevin O’Connell for the conversation that led to these thoughts.



office's boundaries. Determining appropriate designs for all manner of sensory organizations may become a good meta-theme for innovative research and development in the years ahead.

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