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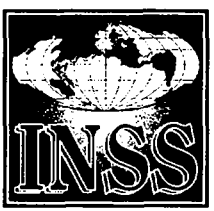
59

Right Makes Might: Freedom and Power in the Information Age

David C. Gompert



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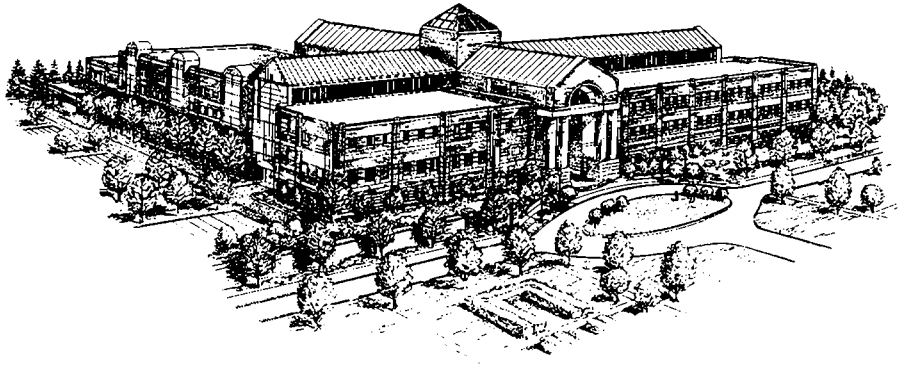

George C. Marshall Hall

Right Makes Might:
Freedom and Power in the Information Age

David C. Gompert

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Introduction:
Freedom, Power, and the Rise of China

China's emergence begs a fresh look at power in world affairs—more precisely, at how the spread of freedom and the integration of the global economy, due to the information revolution, are affecting the nature, concentration, and purpose of power. Perhaps such a look could improve the odds of responding wisely to China's rise.

The natural worry of Americans who came of age during the Cold War is that the makings exist for another bipolar confrontation. For decades, the growth of Soviet power relative to U.S. power was deemed so alarming that the United States would go to any length and any cost—trillions of dollars!—to preserve parity. From such history, American anxiety about China should surprise no one, not even the Chinese.

The timing of China's ascendance is especially eerie: Exactly a century ago, German leaders convinced themselves that England had no right to deny equality to their rising state and would be Germany's main enemy for trying. The British regarded this German attitude, particularly the building of a high-seas fleet, as menacing. England's response—building dreadnaughts fast enough to stay ahead—gave German hawks the enemy they sought. The ensuing hegemonic rivalry spiraled into conflict.[1]

The Anglo-German and U.S.-Soviet cases bear out the theory that the most destabilizing factor in world politics is the changing power relationships that result from differential rates of economic and technological growth.[2] Once convinced that *relative* power matters *absolutely*—because the strong can have its way with the weak—challenger and incumbent alike are drawn toward a showdown that can devastate other, more real human values, as in World War I and, but for the grace of God, World War III. Does this logic of relative power still explain world politics? Does it apply to the rise of China?

Some take comfort in the fact that China cannot amass enough power to rival the United States for several decades.[3] Yet Chinese economic growth appears sustainable; requisite investments are being made; support for economic reform runs deep; and the potential for mobilizing human resources is awesome. The Chinese are likely to maintain parallel, proportional growth in military power. To them, national modernization presents an opportunity to ensure that China is never again molested by foreign powers as it was in the past two centuries. Moreover, unlike the Japanese, the Chinese have no political reason to omit military strength from their portfolio of power.

Whether and how China will challenge the United States and how the latter should react are questions that cannot be deferred until Chinese power nearly matches U.S. power. It is the anticipation—the Germany and England of 1898—that sets the logic. Opinions already abound about the implications, ranging from the view that the United States and China are headed for a collision to the view that the United States, using geopolitical agility rather than confrontation, can balance and moderate Chinese power.[4]

The rise of China is a puzzle of capabilities and intentions. Veterans of the Cold War were taught to respond to capabilities, not intentions. Because intentions can be murky and fluid, potentially threatening capabilities can never be assumed to be benign. But there is a deeper reason to be concerned about capabilities. To the extent that power is an end in itself in world politics, or the hard currency needed to gain other ends, capabilities define strategic conditions. Given the weakness of international law, power is presumed to be dangerous unless it is balanced. Growing power reveals ambition. It is resisted by status quo powers, lest their own positions decline relatively. For the system as a whole, power shifts can be disastrous, as can clumsy strategies to block such shifts. The world went to war, in part, because of Anglo-German hegemonic competition, and later split in half because of U.S.-Soviet confrontation.

The United States has shown that its unrivaled power is threatening only to those who, by broad consensus, need to be threatened, e.g., Iraq and Serbia. As a rule, Yankees are too pragmatic to be power-hungry. Yet their self-righteousness motivates them to oppose the growth in power of any state they think might be irresponsible. The United States will resist the rise of an Asian hegemonic threat not only to protect concrete U.S. interests in Asia, but also out of a conviction

that only it can be trusted with superiority. Enthusiasm among some American thinkers for a unipolar world springs not from the urge to dominate but from faith in the goodness of American power.[5]

Although such thinking can provide a vehicle for those with antipathy toward the current regime in Beijing, it is not anti-Chinese, as such. Nevertheless, as Chinese military strength grows, the chances of a struggle, cold or hot, will increase *unless* Chinese behavior disabuses the United States of the presumption that expanding Chinese power is threatening. One already feels the tightening logic of great power competition.

But what if the information revolution has turned the relationship between capabilities and intentions on its head? What if nations of "good *intention*"—let us say, democracies given to responsible international behavior—are inherently more *capable*? Suppose that democracies are not only disinclined toward aggression, as is widely accepted, but also more able to build national power, by virtue of their economic and political openness. Imagine, further, that joining the existing democratic powers in a community of interests and values is the surest path any nation can take to growth, success, and power. If, in fact, the information revolution has such effects, the prospect of a mighty but hostile China would be remote. Increased Chinese capabilities would be accompanied by restraint, not increased belligerence.

What if the information revolution has turned the relationship between capabilities and intentions on its head? What if nations of "good intention"—let us say, democracies given to responsible international behavior—are inherently more capable?

This essay examines the relationship of intentions and capabilities—more precisely, of openness and power—in the information age. China is the case in point; but the query is a general one. Its hypothesis is that although power remains important in world politics, globalization has transformed its character, correlates, and consequences: Power now depends on freedom.

Notes

1. Robert Massie, *Dreadnaught: Britain, Germany, and the Coming of the Great War* (New York: Ballantine Books, 1991).

2. Robert Gilpin, *War and Change in World Politics* (Cambridge: Cambridge University Press, 1981).

3. Joseph S. Nye, *Survival* 39, no. 4 (Winter 1997-98): 65-79.

4. Zbigniew Brzezinski, *The Grand Chessboard: American Primacy and Its Geostrategic Imperatives* (New York: Basic Books, 1997); and, Richard Bernstein and Ross H. Munro, *The Coming Conflict with China* (New York: Alfred A. Knopf, 1997).

5. Charles Krauthammer, "The Unipolar Moment," *Foreign Affairs* 70, no. 1 (1991): 23-33; and, Zalmay Khalilzad, "Losing the Moment," *Washington Quarterly* 2, no. 18 (Spring 1995): 87-105.

Right Makes Might: Freedom and Power in the Information Age

1. *Globalization and Power Politics: A Synthesis*

One World—Two Explanations

Testing the hypothesis that power depends on freedom requires an explanation of the general pattern of contemporary international politics. At the moment, we can pick between two such explanations: the relentless spread of free-market democracy ("globalization") and the ever-shifting concentration and interaction of geopolitical power ("power politics").[1]

In the first view, a wave of economic and political openness travels eastward and southward from the West, moving world politics inexorably toward a peaceable commonwealth of responsible democracies, joined by commerce and liberal ideals, occupying most of the planet. In the second, the world's superpower maintains balance and manages security in the world's vital regions, grapples with two other economic giants, Japan and the European Union (EU), keeps a wary eye on the largest remnant of the Soviet Union, and anticipates the rise of a Chinese "peer challenger."

The two explanations emphasize such different phenomena as to seem contradictory. Globalization—economic integration and political convergence—is all about progress, porosity, norms, rules, networks of interest, devolution, transnational power, smaller and accountable government. It erodes centralized authority of all sorts. It favors international collaboration, inspired by common interests and principles—shared equity in the free market and in the ideals of free societies. Its prevailing values, especially the rule of law and the rights of the weak, not only enhance domestic tranquility but also temper international behavior.

Along this line of world development, the diffusion of technology uplifts and draws one after another emerging nation into a core political economy, based on the appreciation of human capital, economic efficiency, and political harmony. The diffusion of technology does not sap but instead strengthens the enterprises and nations that invent and export it. World affairs are shaped more by market forces than by government policies. State power is undercut by market power and bypassed by multinational enterprises, worldwide communications, and sundry nongovernmental actors.

As globalization proceeds and the information age unfolds, economic value becomes less tangible, more fluid, accessible, and portable across political boundaries. Technology and money spill into vast and ungovernable global pools. The world economy's markets, resources, capital, and human talent are readily available to those states that join it. Traditional objects of conquest, e.g., land and raw materials, become less important. Territorial dominion and international coercion, if not passé, are out of sync with globalization's promise. Power jealousies and plots seem anachronistic. What matters to societies, including elites, is not relative national standing but success, as measured by absolute progress in the quality of life. Even the lone superpower is not wedded to the status quo. The last two decades reveal that American interests are not harmed but instead helped by change because, for the most part, change enriches Americans and Americanizes the world.

Power politics, in contrast, is determined by the comparative strengths of the largest nations and the equilibrium or rivalries among them. If globalization distributes, power politics concentrates. At

present, the all-around might of the United States and the weights of Japan, the European Union, China and India (increasingly), and Russia (in decline), give structure to international politics. Notwithstanding the diffusion of economic power and the erosion of the nation-state, it remains the Newtonian interactions among the great political-economic-military singularities that determine international conditions, calculations, strategies, war and peace. One power's rise marks another's decline. Being a superior power still has its rewards, especially as viewed by inferior ones, thus assuring unending cycles of hegemonic challenge and defense.[2]

From this vantage point, as technology spreads, the task of preserving commercial and military advantages—for the United States, unipolarity—grows ever more critical. For fear of great power conflict, power politics abhors instability. If change would mean a restless Japan, an obstreperous EU, or a China that is at once strong and revisionist, the United States will want to extend the status quo, or to govern change. It can try to do so by husbanding its superior capabilities and maneuvering internationally, as arbiter of global politics, to ensure that the world and its major regions are not destabilized by some challenger or by the recklessness of petty powers, thus ensuring both equilibrium and continued primacy.[3]

Globalization promises to fulfill the ambition, and hopeful prediction, of those who believe that history has a direction, with liberal ideals exerting a growing pull on politics within and among nations.[4] In contrast, devotees of power politics regard history as open-ended, even pointless. They find the physics of competing power or patterns on geopolitical maps more satisfying, or at least more prudent, than societal progress as guides to international politics.

The power politics school got the upper hand, for obvious reasons, after World War II. The theory that history moves in a liberal direction then got a strong boost when communism self-destructed. However, in light of experience since the revolutions of 1989—Yugoslavia, the tenacity of surviving rogues, Russia's brutality in Chechnya, China's missile-test diplomacy, stirrings of power struggle in Asia—neither camp can be said to have carried the day. Thus progress toward a worldwide commonwealth of freedom now seems to be taking one step back for every step forward. Yet, theoreticians of geopolitics

expound on new poles and alignments of power, as if globalization were happening on some other globe.

The catechism of official American foreign policy sidesteps the tension between globalization and power. Its priests chant "enlargement" of the sphere of democracy, but their refrain of America's "indispensable leadership" sounds to others like gentle hegemony. The United States, paragon of responsible power and champion of globalization, while not power-hungry, is power-conscious. There is not much room in Washington's world view for other equal powers, be they adversaries or partners. The amalgam of U.S. policies implies a sort of unipolarity-cum-globalization: a world without divisions in which the power, ideals, and output of one great and good nation, America, prevail.

Washington may fancy the mantle of leadership, but the American people seem unpersuaded. Now that their *way of life* is safe, Americans seem relatively uninterested in the fall and rise of other powers. Globalization satisfies the chief criterion by which they now judge U.S. engagement in the world: their *quality of life*. They seem unconvinced that U.S. participation in the global economy, which they support, requires the United States to act as the world's exclusive leader, which would seem to make every international problem theirs.[5] Unless power politics spoils the world economy or serves up another life-threatening enemy, the *relative* standing of the United States seems to matter far less to its citizens than the *absolute* effects on them of U.S. policies and relationships.

The Americans are not the only ones of two minds. The Chinese plunge into the world economy, while also aspiring to expand China's relative power. The Russians are adamant about still being a great power; yet, as their national output is reduced to raw materials, they know their future depends on globalization. The Japanese exhibit an aversion to national power, except when it comes to their competitive specialties—technological prowess and exports—which they seek to maximize in the world economy. The Europeans, inventors of integration, cannot decide if they really want the EU to be a world power, since that would require further derogation of sovereign national power and greater collective responsibility. Overall, this tug of war between power and integration is the main reason why the

general shape and direction of world politics in the new era is so hard to figure.

Information Technology Linking Power and Freedom

Along which track, then, is the world developing? The answer is *both*, for neither globalization nor power politics can be ignored. Classical great power theory does not explain the behavior of today's great powers. If it did, the relationship among the world's current leaders—the United States, Japan, and the EU—would be a tense triangle rather than the community of interest and trust that it is. China and Russia have not rushed into each other's arms to offset U.S. power, even after U.S. intervention in the 1996 Taiwan Strait crisis and NATO's 1997 decision to enlarge. Instead, China and Russia remain far more interested in associating with the United States and its democratic partners than in aligning against them.[6]

On the other hand, globalization does not account for the way China, Japan, and the United States, though intertwined economically, are positioning for advantage in Asia in anticipation of Korean unification. Globalization does not explain the urge of France to rally fellow Europeans around a Middle East policy distinct from Washington's. For that matter, if globalization is spreading irresistible norms of free-market democracy worldwide, why does the United States keep spending $250 billion annually to maintain military superiority and its ability to project power anywhere it has interests?

In reality, both globalization and power politics are shaping the world and the future. Yet the relationship between globalization and power is not under-stood. The two explanations are orthogonal—the former horizontal, the latter vertical. It is unclear how power will be distributed and used in a world of expanding democracy, economic integration and homogenous norms, or conversely, how globalization will affect politics in a world where power remains lumpy and important. A synthesis is needed to reconcile the diffusion and concentration of power.

The key to that synthesis is *information technology*—the dominant force of the post-industrial, post-Cold-War age. Information technology is the *sine qua non* of both globalization and power—the locomotive on each track. It is integrating the world economy and

spreading freedom, while at the same time becoming increasingly crucial to military and other forms of national power. Information technology thus accounts both for power and for the process that softens and smooths power.

Information technology is the* sine qua non *of both globalization and power—the locomotive on each track. It is integrating the world economy and spreading freedom, while at the same time becoming increasingly crucial to military and other forms of national power.

The nucleus of this essay is that information technology connects freedom and power. The link between freedom and information technology, on the one hand, and information technology and power, on the other, explains the relationship between freedom and power—the key to world politics. In a nutshell, military and other forms of power depend increasingly on knowledge and thus on the openness and global integration that spawn and sustain information technology.

The essential reason for the new correlation of freedom and power lies in the *nature* of information technology: It springs from and adds to human knowledge. Once thought of as a utility needing regulation (at least in its telecommunications origins), it has proven to be the best way yet found to release human potential. Industrial technologies—metal-bending, machine-propelling, uranium-enriching—complement state power, even repressive state power. But information technology both arouses and relies on the inventiveness, aspirations, and irrepressibility of the citizen. If, as Woodrow Wilson said, democracy "releases the energies of every human being," information technology networks and thus mobilizes those energies. State power cannot produce and can even retard this technology. The information revolution liberates and requires liberation.

Because it utilizes and rewards human minds, not muscles, information technology provides unprecedented economic leverage in fields as diverse as financial services, civic activism, and warfare. The freer the market, the greater the leverage. As the role of information

technology grows, so will the dependence of economic performance and national power on freedom.

Take the most striking example, the United States since 1980: reduced government involvement in the economy, deregulation of telecommunications and non-regulation of computer industries, leadership in key information technologies, corporate restructuring, improved international competitiveness, low unemployment and inflation, and military superiority—all parts of a package of freedom, knowledge, and strength. Americans, in their hubris, might think this is a unique package; but the conditions are being replicated on a less grand scale throughout much of the world.

By augmenting and distributing knowledge, information technology has (just) begun to transform industrial and military operations. It lets institutions decentralize, reduce their superstructure and, by bringing them into closer touch with their external worlds, become more adaptable. It can demolish organizational "stovepipes," defeat vertical control, and unlock the power of horizontal work. Just as corporations can enhance their competitiveness by distributing authority and building internal networks, countries in which power is spread out—i.e., democracies—have the greatest potential to mobilize human resources when given information technology.

Globalization is, in a way, decentralization at the planetary level. Information technology permits enterprises to operate worldwide systems of production, distribution, and finance that form the anatomy of the integrated world economy. Consequently, U.S., European, and Japanese firms can invest wherever their technology has the best match with local labor. Growing international acceptance of deregulation and free trade responds to the needs and encourages the further globalization of such firms. Thus, on a global scale, information technology thrives on openness and boosts efficiency.

In the military realm (addressed at length below), nations that master information technology have the potential to improve the mobility, lethality, and survivability of their armed forces. They can trade in mass for quality and come out way ahead. Those states with the technology and vision to modernize their forces this way can cover the fiscal costs of doing so by cutting manpower. Yet information technology, far more than mechanical technologies, can yield

enduring military advantages *only* if it is flourishing in the larger economy and society. The core technologies for the military—semiconductors, data networking, and software programming—are propelled by the volume and requirements of civilian markets.

Only with vibrant markets and integration in the world economy will countries, however populous, be able to reap the full benefits of the information revolution, including in military affairs. As that revolution offers an improved ability to project power and destroy enemy forces while reducing one's own casualties, the edge, on both the field of battle and the field of world politics, will lie with those nations whose openness gives them an advantage in harnessing information technology.

A Lasting Community of Great Powers

This reasoning, if right, bears on how to regard the United States and the world's other current and future powers, especially Japan, the EU, and China.[7] The pages that follow predict that the world's greatest powers—whether three, four, or more—will be free-enterprise nations with legitimate governments. They will be bound into the global core economy, motivated by shared interests in the health and security of that economy, and at least loosely aligned against threats to those interests from lesser states and non-state actors. As their values also converge, their shared commitment to international law and order will grow.

National standing will remain important, as both fact and ambition. But the deepening economic integration of the strongest nations, due in large part to information technology, will make hegemonic rivalry a high-cost/low-gain departure from their common pursuits and friendly competition. The military superiority of the United States and other democratic powers will not ensure uniform and permanent peace; outlying states can still carve out military niches, disrupt international security, and defy the great powers in some circumstances. But those countries that stay apart from the core and are hostile to its liberal values will find modern power hard to come by, precisely because such power depends on those values. So U.S. adversaries will tend to be weak; U.S. friends strong; and strong states friendly.

Such a state of affairs could be considered utopian were it not roughly the situation today. The military superiority of the United States is increasingly the result of its lead in information technology, which is based on its economic and political openness. That the world's strongest power is a strong democracy is not simply a consequence of the 20th century but a natural condition of the 21st.

The other leading democracies, Japan and the EU, trail only the United States in most important measures of actual and potential power.[8] They also satisfy the preconditions of success in information technology—namely, freedom and integration—and they have the economic performance and military potential to show for it. The world's three leading powers are essentially as congenial now as they were when Japan and Europe depended vitally on U.S. protection from the Soviet Union. Japan and Europe do not loom as would-be strategic rivals of the United States, despite their capabilities, the absence of a unifying threat, and their reduced dependence on the United States. (The greater danger is that they will be free riders.) All three democratic powers have equity, figuratively and literally, in each other's success. As integration increases that equity and its dividends, their cooperation should deepen.

If great powers have compatible purposes and collaborative strategies, *multipolarity*—a term that has customarily connoted balance of power—will *not* produce hegemonic struggles, shifting alignments, and pecking-order politics. Imbalances in power need not be dangerous or destabilizing, any more than the current imbalances between the United States and Japan or the EU are. The good relations among today's leading powers are a model that can work in general and in perpetuity.

The need for and effect of information technology will cause rising powers to gravitate toward the interests, ways, and outlook of the United States and the democratic core, rather than to challenge them. Otherwise, even giant states, though potentially dangerous— rogues on steroids—will be chronically malnourished in the dominant technology. They will remain on the outskirts of not only the global economy but also the power structure of world politics.

Will China conform to the template? If this essay's thesis is valid, yes. China's paramount ambitions—stability, prosperity, modernity—require reform, integration, and comity with the democratic powers. There is no other way fully to join the information revolution. Growing Chinese reliance on information technology will intensify pressures for economic and political liberalization. If and as the Chinese state yields to these pressures, and is constrained by them, China will be drawn ever more into the community of democratic powers. Alternatively, a stubbornly authoritarian, nationalistic, and self-sufficient China will find it hard to compete in the very technology on which both its economic prospects and future military power depend.

Obviously, China will not be a replica of Japan or Western Europe. Nor will it adopt American ways, lock, stock and barrel. But as China's mastery of information technology and its power grow, so should its qualifications to become a responsible partner of the United States and a source of regional and global security rather than of insecurity. There are signs that this process is underway.

China can become a modern world power or China can reject the ideals and oppose the interests of the core; but China cannot do both.

If the analysis in this volume is valid, China can become a modern world power or China can reject the ideals and oppose the interests of the core; but China cannot do both. Power requires information technology, information technology requires freedom and integration, and freedom and integration create a community of values and interests.

Improving Global Security

While the prospect of harmony among the world's powers, established and emerging, offers great hope to U.S. and global security, there are pitfalls and countervailing trends. Openness creates vulnerability along with strength. Societies that enjoy political and economic freedom, rely heavily on networks, and are integrated into the world economy are inviting targets for states that oppose them. Moreover,

democracies might lack the will to pay for military power or the nerve to use it when threatened. In any case, they will not have a monopoly on modern military power; so rapid and uncontrollable is the spread of information technology, thanks to the integration of the global economy, that even closed, marginalized states can acquire and use it selectively for military purposes. Finally, by wiring communities of interest and short-circuiting vertical authority, the information revolution is eroding hierarchies of all sorts, including democratic governments.

Granted, such factors will limit the power of even the most powerful nation-states and allow lesser, sinister actors—states and non-state groups—to do great harm. This essay does not argue that powerful states will be invulnerable or even that they will dominate world affairs. If anything, the operational and symbolic utility of *national* power, democratic or not, will be less in the information age than it was in the industrial age. At the same time, a world in which the most powerful states act jointly is more likely to fulfill the grand human promise of the information revolution than one in which they are trapped in costly and perilous power balances, machinations and conflicts. A world in which the established powers are not afraid of change—or of each other—could be a world of sustainable progress and security.

The thought that democracies do not wage war with each other is well-known.[9] The argument that integration engenders common interests, promotes cooperation, and dampens conflict is also familiar, though less accepted, mainly because of the contrary example of European interdependence before World War I. The new idea here—adding the spice of information technology to the curry—is that democracies have the inherent capacity to be more powerful than undemocratic states, which was not the case when muscle-bound industrial powers strode the Earth. Paradoxically, although globalization diffuses power, it also strengthens its agents—the large free-market democracies that command the dominant technology.

Some have argued that humankind is drawn toward the magnet of democracy.[10] What happened soon after the information revolution began—the sudden collapse of communism and the emergence of long-backward nations—tends to support this belief. Information

technology has enabled free societies to mobilize greater human capital and to excel economically. If, as well, democracies are capable of achieving superior military power in the information age, this might not mean the end of war or " History," but it could permanently improve global security.

For these ideas to be right, several propositions—mere assertions thus far—must be valid: First, competitiveness in information technology depends on economic and political freedom and on integration into the core. Second, military power and other forms of national power depend on broad-based success in the creation and use of information technology. Third, integration into the core creates shared stakes that supersede power politics and point toward a multipolar community of interests and democratic values. The rest of this essay will examine these propositions.

Notes

1. For purposes of this essay, the "globalization" view might also be expressed as an integrationist or liberal analysis. The "power politics" perspective could also be called geopolitical or realpolitik.

2. Paul Kennedy, *The Rise and Fall of the Great Powers* (New York: Random House, 1987).

3. Zbigniew Brzezinski, *The Grand Chessboard: American Primacy and Its Geostrategic Imperatives* (New York: Basic Books, 1997).

4. Francis Fukuyama, *The End of History and the Last Man* (New York: Free Press, 1992).

5. It has become commonplace to depict as isolationist any dissent from the tenet that the United States must provide world leadership, as if there were no other basis for U.S. international engagement. This view is refuted by numerous recent public opinion polls—e.g., Chicago Council on Foreign Relations (1995) and University of Maryland (1997)—which indicate that the majority of Americans want their country to be engaged internationally but would rather see it share than bear all the burdens of leadership.

6. The current flirtation between China and Russia seems more expedient than strategic. It helps China focus on Taiwan, and it is a way for Russia to signal displeasure over NATO expansion. It also gives the Russians a buyer and the Chinese a source for arms. But the basic behavior of both suggests an awareness that the future lies with transformation, integration, and cooperation with the United States, Europe and Japan. Russia has accepted a role short of membership in NATO and continues eagerly to pursue support from the IMF and other international financial institutions led, in effect, by the advanced

democracies. Russia also accepted a role in the Group of Seven (now Eight) leading economies. China is even more oriented toward the advanced democratic powers, what with its growing trade, investment, and financial ties and its close consultations with the United States on such crucial matters as Korean security and the Asian financial crisis.

7. India could also become a power of this magnitude. But it will not get as much attention as China in this essay because it does not appear to be on a possible collision course with the United States.

8. The EU (in essence, the West European members of NATO) has the world's second largest and best collection of military power and the world's largest economy. In addition to being the closest technological rival of the United States, Japan could become a world class military power, with strategic and information-age weaponry, within a short time—perhaps a few years—of any (highly unlikely) decision to do so.

9. Michael Doyle, "Liberalism and World Politics," *American Political Science Review* 80 (December 1986): 1151-69); and James Lee Ray, *Democracy and International Conflict: An Examination of the Democratic Peace Proposition* (Columbia, SC: University of South Carolina Press, 1995).

10. Fukuyama, ibid.

2.
Knowledge and Freedom

To give information to the people is the most certain and legitimate engine of government.

—James Madison, 1787

Information Technology and Economic Freedom

The two key stages in the life of most information technologies are *invention* and *application*. These stages especially depend on healthy market forces and rational financial returns. Government infringement, opposition, or control at either end retards the technology. In short, success in making and using information technology requires economic freedom.

Creativity and freedom in invention and application have not been this crucial in every industry. In steel making, for example, the economical gathering of ore and coal and efficient manufacturing are key. In nuclear power, fault-free engineering and safe operation are what matter most. In consumer goods, success depends heavily on distribution. But as we can already see from the explosion of practical new ideas, products and services in the decade and a half since the deregulation of the U.S. telecommunications industry, the combination of invention and application, of science and market, provides the combustion for the information revolution.

The prospect of handsome personal profit in return for high-value innovation is critical to attracting the talent and justifying the risk-taking required at the upstream end (i.e., discovery and design) of information technology. While most technical wizards are no doubt motivated by the thrill of discovery, it takes the possibility of becoming the next Steve Jobs to ensure a steady flow of top-drawer scientific talent through graduate school and into the lab. The financial bonanza

for breakthroughs by entrepreneur-inventors often comes with being acquired by an established information technology firm with the capacity to productize, market, and support novel ideas.

The development of new information systems and services requires large and efficient venture capital markets. Silicon Valley is as famous for its money engineers as for its software engineers. For such markets to function, returns commensurate with value and risk are needed to rationalize and stimulate daring investments. In addition to strong venture capital facilities, the market must provide the possibility of rapid application, revenues, and profits in order to yield an early payback for investors.

Such conditions cannot be generally replicated in a state-controlled economy. Even if vast public resources are garnered and invested in these technologies, a closed system has no way of emulating the fast market action and growth in valuation, capitalization, and earnings (thus reinvestment) that have accompanied the expansion of the information technology market in the capitalist democracies.

State ownership, planning, and resource allocation, even if meant to spark innovation, will more likely extinguish it. The last decade or so has buried the belief, held even in some American quarters, that state-centric, communitarian cultures could out-compete individualist systems in these technologies.[1] It takes the instantaneous signals of a free market to keep up with the blistering pace at which information technology is capable of emitting new applications and achieving lower costs. The information market has a voracious appetite, calling for the next course before it has digested the last. No sooner does a market segment seem saturated (mainframe computers, for instance), than it morphs and demands a better technology on an even greater scale (distributed processing). Because of flexible design, versatile componentry, malleable software, and open connectivity standards, new products and services can be developed, rushed to market, and incorporated with astonishing speed.

Neither producers nor users in this market have the time or patience for regulation. No major industry has developed a stronger aversion to government interference.[2] Since the divestiture of AT&T in 1984, the Federal Communications Commission and U.S. court system have faced relentless pressure to promote competition. From IBM's

successful defense against anti-trust action in the 1970s to Microsoft's current battle against regulation, the world's most successful computer industry has also been the most free of the shackles of the state.[3] The spread of e-mail, the Internet, and the World Wide Web have occurred well beyond the reach, and competence of government, which is now struggling to catch up because of public concerns about pornography, security, and organized crime.

Perhaps the greatest benefit from deregulation in the United States has been the marriage of computing and communications technologies, caused by the introduction of competition in the telecommunications industry. The power of networking, long confined to voice telephony, has multiplied the capabilities and impact of computers and has transformed the way people and organizations work. Data networks bring to every desk the capabilities that exist anywhere in the network, as well as a connection to every other desk. This has dispersed not only technology and processing power but also institutional and economic power. The cascade from mainframe to mini-computer to personal computer has spread the information revolution to workers and citizens, both fostering and thriving on economic freedom.

Governments, good and bad, can slow but not derail the information revolution train. Indeed, they have become its caboose. Even the U.S. government is an awkward participant in the information technology market. Some of the largest firms—IBM, AT&T, General Electric, and Unisys, for example—once had billions of dollars in business with the federal government and received sizeable R&D support out of public funds. In the past decade, as the information revolution has gathered speed, most of them have fled that market, typically spinning off or selling off their government system divisions to large prime defense contractors. Those that still provide products and services to the military establishment do so via the "primes."

The reason is simple: the commercial market, where customers are unencumbered with bureaucracy, political oversight, and arms-length purchasing rules, has proven so lucrative that doing business directly with the government now dilutes profitability, slows development, and offends the footloose culture of information-age companies. Fortunately for the U.S. military establishment, defense systems

integrators, such as Lockheed Martin and Boeing, are savvy buyers of information technology. Through them, the fruits of the U.S. information technology industry are available for military application.

Scale is as important as speed in achieving competitiveness in information technology. Large commercial markets are needed to justify and afford the high R&D costs inherent in this industry. Absent such markets, military and other state needs are way too small to cover these costs. For instance, the investment required to compete in dynamic random access memory (DRAM) and microprocessor chips would be out of reach without revenue from the consumer electronics and personal computer markets. Japan's lack of military demand did not prevent it from seizing the world lead in DRAM chips. And the U.S. military was missing in action when the complementary metal-oxide semiconductor (CMOS) microprocessor industry took off.

As the microelectronic and data networking content of military systems increases, the military as a whole is becoming a tentacle of the civilian technology market, in the United States and elsewhere.

The most stunning example of abysmal technological performance due to the absence of freedom is of course the death of the Soviet Union, which occurred within a decade of the merging of computers and communications. For want of a market of sufficient size, the Soviet Union had no hope of competing in information technology despite its seemingly immense defense sector. Gorbachev tried to fix this by cleaning up the Soviet Union's international conduct and image so that it could begin importing advanced technology from the West. However, the lack of civilian markets guaranteed that the Soviet Union would have trouble both attracting and absorbing information technology. Although the Soviet military was among the first to recognize the strategic potential of these technologies, it could neither incorporate nor adapt to them remotely as well as could the U.S. military, despite being roughly the same size. Ironically, the most successful use of information technology in the last years of the Soviet

Union was by political activists using fax machines to spread subversive—i.e., democratic—ideas.

The dominance of civilian markets is nowhere more evident than in the United States, the country with the strongest military. The military market now makes up just 2 percent of U.S. demand for information technology, down from 25 percent in 1975.[4] While U.S. armed forces still require some customized technology, they have come to rely heavily on the broader information market: the public telephone network, common integrated circuits, everyday computers and data networks, and standardized software operating programs. For example, Micro-soft's Windows is becoming the system of choice of the U.S. Air Force, not only for administration but for operations. As the microelectronic and data networking content of military systems increases, the military as a whole is becoming a tentacle of the civilian technology market, in the United States and elsewhere.

Although economic freedom obviously does not guarantee a booming market for information technology, it helps. It provides conditions for rapid market *growth,* which is especially important in stimulating investment and firing up competition. Moreover, nations in which the state retreats from the economy make inviting markets for information technology. For instance, those countries in which the national telephone monopoly is privatized are especially attractive markets for global computer and telecommunications companies, which anticipate pent-up demand for new services and products.

Of course, the more communitarian capitalism of Japan has proved advantageous at times, e.g., when the combined efforts of Toshiba, NEC and others, orchestrated by the Japanese government, seized the lead from the United States in manufacturing semiconductors in the 1980s. But the American microelectronics industry rebounded with higher-value, higher-margin customized chips and microprocessors. In an industry characterized by rapid-fire introduction of new products and services, the research and development phases are key, and they feast on freedom and openness.

Small countries with small domestic markets, while at some disadvantage, can still benefit from scale in information technology by hosting operations of such companies. These firms are unlikely to transfer advanced technology to subsidiaries in countries that are not

embarked on economic reform and not joining the world economy. With scores of emerging countries now competing for direct investment, investors can be highly selective. Consequently, virtually all foreign investments in information technology production are either in mature or emerging free-market states, including China and India.

Although small, open states, like Taiwan, Malaysia, and Hungary, can find niches in the world information technology market, the investing firms and their headquarters' countries—usually the United States, Japan, and Western Europe—also stand to benefit from the dissemination of their technology. In addition to providing new markets and added revenues, globalization expands the capabilities, especially the human talent, to which the great economic powers have access and over which they have some continuing control, because they generate most new technology. As the know-how to produce mature information technology products spreads, income from joint venture and license fees flows back "home" for investment in higher value, higher return new technologies. So the diffusion of technology does not leave the source depleted. It has instead strengthened the information industries of Japan and the United States, and thus the countries themselves.

As noted, economic freedom both furthers and is furthered by participation in the global economy. Participation requires data communications for dispersed yet integrated operations. It provides pipelines for the latest innovations and applications. Despite the efforts of governments to control technology transfers, there is a growing reservoir of information technology in, although not tightly restricted to, the integrated core economy, where nearly all advanced value-added production occurs. Countries lacking economic freedom will have difficulty integrating, owing to their exclusion from the world trading system and to cold feet among foreign investors. Consequently, their access to the reservoir of technology will be limited.

In light of their indigenous deficiencies and investor disinterest, states without free markets will be forced to import advanced technology, legally or otherwise. While this is feasible for some technologies—the ones required to make and launch weapons of mass destruction, for instance—it is especially difficult for information technology. The main problem is not to find information products and services on the shelves of the world market, but to absorb, apply, and

support them. Information technology piece parts work well only when imbedded in a society whose skills and infrastructure are undergoing a larger information revolution. These technologies are increasingly interdependent, especially as computer networking expands. Components alone are of limited value. How useful are desktop computers without host computers, networks, a steady diet of software upgrades, and competent users?

Information technology is constantly being modified, enhanced and overtaken by better ideas, leaving importing states to engage in an expensive, never-ending game of catch-up. Moreover, the societies most likely to excel in the application of information technologies are the ones that participate in the production of them. Empirically, the biggest and hottest markets are the advanced free-enterprise countries and the emerging countries of Europe and Asia that are now producing chips and software.[5] It is doubtful that states that resist economic reform and integration can become competitive either as creators *or* as users.

Information technology is virtually impossible to partition. How can an ambitious state, unless it is very compact, e.g., Singapore—hardly a strategic worry!—expand its data-communicating, PC-using, software-programming capacities for narrow state purposes, e.g., military functions, yet avoid spillage into society? The more information technology that closed states acquire, the greater the likelihood that they will end up weakened or opened. Obviously, the less they acquire, the lower the political risks—but then, the more implausible is the prospect of becoming a world power.

Recent history confirms that economic reform, integration, and information technology are converging streams that produce a flood of progress when they meet. The world's free-market core has been expanding at an accelerating clip, with Latin America, Southeast Asia, and Central Europe embracing its tenets and joining its markets in the past decade, as did Western Europe and Northeast Asia over the several decades before them. Soviet communism was far from the only casualty of capitalism's triumph over state-based economic systems. The information revolution has figured centrally in these developments, spreading ideas, permitting global operations, facilitating the investment that has extended capitalism's reach, and

improving the output of human capital in much of the developing world. Throughout this process, the enhancement of economic freedom has enabled emerging nations to attract investors and to acquire, use and eventually produce information technology.

But is history since 1980 a guide to the long-term future? Will economic freedom remain a prerequisite of national success from here on, especially as the information *revolution* matures into a more stable information *age*? Or could it be that the need for market freedom in the invention and application of information technology, so evident today, is not a function of the nature of the technology but of its youthfulness? Might those states now trailing because of their lack of openness come to enjoy the benefits of being "technology followers"—harvesting the crop without having worked the field?

After all, invention was where the action was early in the industrial age, too. The mid-19th century leaders—England and Saxony—were not exactly world powers by the late 20th century. Perhaps, in a less frantically creative future phase of the information age, production techniques, industrial management, and distribution will come to dominate, as occurred when the industrial revolution matured into the industrial age toward the end of the 19th century. (Some argue that marketing has already seized control of the information age!) If so, it could be that the lead now held by open-market states in spawning and applying new ideas could fade as this revolution settles down. Conceivably, capitalism's phenomenal success in recent decades—perhaps democracy's too—might be a temporary phenomenon reflecting its peculiar efficacy in *launching* the information revolution.

In considering this possibility, let us first admit that unbridled American-style capitalism, with minimal government involvement, is by no means indispensable for success in information technology. We have already seen that other market-based economic systems with larger state roles can be competitive. When information technologies become relatively stable, those with superior production processes can excel, as Japan did by the early 1980s. Also, when a particularly daunting technological challenge presents itself, government sponsorship and pooling can make a difference in creating a critical mass, as it did when Japan's state-run telephone company (Nippon

Telephone and Telegraph) coordinated Japan Inc.'s assault on digital switching and supercomputers.

Thus, while maximum market freedom appears advantageous during periods of rapid market and product change, the link could be less strong in more stable times. Could we infer, then, that the advantage held by free-market states during the early, inventive phase of the information age will decay over time? Just as Japan took advantage of its trailing position at a time of relative calm early in the information age, might authoritarian states be able to make up for lost ground, or even turn their lateness and lack of openness to advantage, as information technologies mature in general?

Were it not for the special purpose of this technology—sharing and enhancing knowledge—the answer might well be yes. But again, economic freedom has been critical in both the creation *and use* of information technology. At the downstream (application) end, there should be no lessening over time in the importance of free markets in sustaining an edge in information technology. An open economy unceasingly demands information technology for its private enterprises to operate, especially as they become more decentralized and more interactive with their suppliers and customers. Extensive and modern digital telecommunications, with gateways to the global network, are essential to a vibrant private sector. In addition, large private enterprises are the most sophisticated users of information technology, demanding the best for their own strategic competitiveness. They are the "leading edge" that challenges industry to furnish better hardware, software, networks and services. Note how the demands of foreign business customers have forced emerging countries, once notorious for medieval telephone service, to upgrade their networks.

In contrast, closed economies lack private enterprises with a need for information technology to help them compete, cut costs, and increase profits. Governments do not present such demands. A state clinging to control of its economic system, for political or ideological reasons, will be at best ambivalent about promoting the very technologies whose purpose is to distribute and enhance knowledge and whose effect is to loosen control.

Thus, the *nature* of this technology, not just its stage of development, favors open economic systems. The nature of heavy

mechanical industry makes it compatible with state involvement. The nature of atomic power requires state management. Some government regulation is welcome in the food and drug industries. But information technology contradicts the purposes and can knock out the props of state economic power.

Conversely, the purposes to which information technology is put—decentralizing operations and decision-making, creating horizontal links, improving producer-consumer contact, sharpening external awareness and adaptability—correspond with strong market forces and distributed economies. Thus, even if the *supply* of information technology eventually becomes less dependent on economic freedom, the *demand* will not. Free enterprise states should retain their advantage over the long haul.

Information Technology and Political Freedom

Success in creating and exploiting information technology also depends on and fosters political freedom. As one learned in introductory civics, access to information—via as many media as possible—is a precondition for effective democracy. And, the free flow of information amplifies the demand for democracy. Recent empirical research confirms a strong causal link between the availability of communications and the expansion of political freedom in the wake of communism.[6]

The dictators who try to control information, lest its free exchange undo their grip on power, clearly understand the correlation (without having to read the research). The world's most oppressive states—North Korea, Iraq, Cuba, Libya, Syria, Serbia—are also those most determined to monopolize information. The availability of information technology, whether or not allowed by the state, spreads news and opinions about what is happening inside (usually bad) as well as outside (usually better) the country. For most dictators, the truth can only hasten involuntary retirement.

It was once thought that information technology, manipulated by the likes of Goebbels, Stalin, and Milosevic, could subvert or preempt democracy. It can, but only in very limited forms (e.g., short-range broadcast). Satellite broadcast is hard to monopolize; thus the outlawing of dish antennae, which in turn gets more futile as the dishes

get smaller. *Network* technologies—universal telephone service, fax, e-mail and the like—directly threaten any despot because of the horizontal communications they permit.

Looked at from the opposite direction, a climate of intellectual and personal freedom is important in encouraging breakthrough ideas, which are critical in information technology. True, authoritarian states can cultivate, pamper, and even motivate scientists and engineers whose inventions serve the nation (i.e., the ruler). But the speed with which the vaunted science and technology establishment of the former Soviet Union is crumbling demonstrates the fragility of state-controlled science in the information age.

Intellectuals, whether of science or of letters, want—no, need—intellectual freedom. Intellectual freedom, especially when combined with the chance to exchange information, gives rise to demands for the right to question the ruler, the ruler's policies, and ultimately the ruler's legitimacy. Of course, a growing, prospering middle class, with access to information technology and to the outside world, will not be far behind the intellectuals in insisting on the freedom to read whatever books, see whatever plays, and hear whatever news it wishes. For a regime to deny freedom of the press in the face of such demands and opportunities is a losing battle. And with freedom of the press comes the questioning of authority. It is difficult, arguably impossible, for a state to fence off individual freedom from political freedom for long. It is the mix of freedoms that ferments, especially in a rising, informed, networked citizenry.

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A state can always refuse to embark on genuine political reform. Indeed, the least legitimate, most odious, have the strongest reason—survival—to clamp down, and if need be crack down as an alternative to liberalization. In Cuba, for example, whenever the regime has slowed the process of economic reform, it has had to increase reliance on its thuggish security apparatus to deal with the popular discontent over economic hardship. Oppression is a huge boulder on the path of modernization, participation in the global

economy, and successful use of information technology. In the end, brutal states, while dangerous, will have limited economic, technological and military potential.

The prompt and unrestricted use of new information products and services, characteristic of open political systems, increases the financial return on both innovation and capital. The digital network, the personal computer, cellular telephony, and the Internet—all of which required hefty investment in the face of market and technical risk—have relied on confidence that the government would not restrict use. The growth of browsers would hardly be as rapid if industry feared that government might interfere with the Web. The free sharing of ideas is especially important in disseminating and thus making full use of the latest information technology innovations. The fact that the first Chinese magazine about the Internet had to start underground underscores the contradiction between the urge to spread the technology and the urge to police it.

The link between democracy and information technology is not transitory. Over the half-century or so since the computer made its appearance, knowledge of the underlying science and new applications has been readily accessible. Proprietary ideas have proved ephemeral in the marketplace. Deregulation and open standards have produced frenzied competition. Over the past several decades, the industry has deliberately and enthusiastically spread its know-how far and wide in its quest for global markets. Attempts by government to restrict the export of most information technologies have largely failed and been abandoned.

It follows that mastery—invention, design, engineering—of these technologies ought by now to be fairly evenly spread. Yet nearly all of the *new* information technology generated today still comes from the advanced democracies of North America, Western Europe, and Japan. And those other societies that are beginning to use and produce information technology are, for the most part, also democratic. The pattern is too strong to be accidental.

Countries undergoing democratization are attractive candidates for investment. True, foreign investors want political stability. But they are coming to see that representative and responsible government produces long-term stability. (After all, the targets of recent revolutions have been antidemocratic regimes, not democratic ones.) Smart

investors also see the promise that political freedom holds for the mobilization of human talent.

Just as openness within a society is an advantage in the creation and use of information technology, the difficulty and cost of trying to keep a society closed in the information age is growing. Support for dissidents or embryonic democratic institutions is increasingly available both from democratic foreign governments and nongovernmental organizations, thanks to information technology. The permeability of even self-isolated societies is growing, especially when networked transnational "civil society" groups make it their business to network with the oppressed. Determined despots can combat this penetration only by retreating to more severe political and economic isolation, which will eventually make them its victims. The price and risk of combating democratic pressures are rising.

The link between societal openness and technological, economic and military success predates the information revolution—by a thousand years or so. The Nazi and Soviet experiences of the 20th century might seem to contradict this; then again, they failed spectacularly. In his prodigious, pre-information revolution history of the world, William McNeill explains the stagnation of Chinese and Arab civilizations and the emergence of Europe, from 1200 A.D. on, in terms that ring true today: The first two civilizations used their advanced scientific and educational capabilities to serve and perpetuate closed, self-satisfied hierarchical systems. (Chinese science served the state; Arab science, the religion.) They lacked a rambunctious middle class determined and able to effect change in pursuit of freedom and power. Consequently, these civilizations lived off their human capital, discouraged practical applications of technology, put learning in a holding pattern, and smothered innovation.

In contrast, unruly European burgers were hostile to the status quo and the ruling few. As a consequence, an "incessant and accelerating self-transformation, compounded from a welter of conflicting ideas, institutions, aspirations, and inventions, has characterized modern European history; and with the . . . institutionalization of deliberate innovation in the form of industrial research laboratories, universities, military general staffs, and planning commissions of every sort, an

accelerating pace of technical and social change bids fair to remain a persistent feature of Western civilization."[7] This accounts for how the West grew in power, colonized much of the world, and—not always responsibly—dominated technology, industry, and warfare. (Had they not happened decades after he wrote, McNeill might have added: won the Cold War, became the model for the emerging countries, and caused an information revolution.)

A further accomplishment of the open West was "to mobilize greater human resources within . . . society than was possible within the more rigidly hierarchical societies." In the West, "we can detect the stimulating effect of circumstances that called for the conflicting energies of a larger proportion of the total population than could ever find expression in a society dominated by just a few individuals of comparatively homogeneous . . . outlook." Unruliness, animosity toward privilege and autocrats, openness, and the resulting mobilization of human capital erupted in the American and European democratic revolutions from 1776 to 1989.

These characteristics are if anything more important in the information age than in the West's long rise up to this point, because of the increased economic and strategic importance of knowledge shared and applied. Give those "unruly burgers" networks, and their ability to lead the charge of technology *and* to apply political pressure is vastly greater than McNeill observed in the pre-information age.

Of course, we can now see that these characteristics are not peculiar to the West, in a geographic or racial sense. The appearance of an increasingly powerful and demanding middle class in the emerging countries—from Southeast Asia to Latin America to Eastern Europe—roughly replicates the yeasty process that has produced both democracy and technology in the West. This suggests that "Western" societies (in a geographic or racial sense) have no special, enduring advantage, but also that their indomitable ways have broader appeal and value.

Economic Freedom and Political Freedom

Democracy and power are also linked insofar as political freedom is inseparable from economic freedom and the latter is indispensable for success in the creation and use of information technology. This is an

indirect but important line of reasoning; for, if valid, it weakens the prospect that an undemocratic capitalist country—some immense Singapore—can become and remain a great power in the information age.

Free enterprise does indeed breed political reform and, in time, accountable government. In Asia, Latin America, and Eastern Europe, nearly all emerging free-market nations are democratizing. True, the East Asian brand of democracy (e.g., de facto one-party rule) leaves much to be desired. But the current economic crisis in East Asia is intensifying pressure not only for greater economic transparency but also for greater political accountability. The recent opposition party victory in South Korea reflects the pressure to end state-industry cronyism and opaque (and shaky) financial dealings.

Empirical research (based on several East Asian nations) confirms that "marketization, the process of moving from a centrally controlled economy to a free market, provides the conditions necessary for fostering democracy and the means by which the citizenry can establish this system of government."[8] The growing, prospering middle classes of the emerging nations, like those of the early Western democracies, demand legal protections and political rights to go with their economic freedom.

Authoritarian regimes have had little success satisfying, or buying off, the rising middle class with material prosperity. Give a person the chance to make money, and he will want more, not less, freedom—to use his money as he wishes, to go where he pleases, to say what he wants, and to criticize what and whom he dislikes. McNeill's theory of the politically demanding character of this stratum, once it gains economic clout, seems to apply no less to 20th century emerging countries than it does to 16th century European countries.

Economic transformation also shrinks the role of government and creates pressures on it to become legitimate. With marketization, the government becomes an economic backwater—owner, banker, and paymaster of swollen state enterprises that are unseaworthy in competitive waters. Internal economic reform, fiscal realities, and the need to participate in international financial institutions, especially the International Monetary Fund and the World Trade Organization, eventually force the state to scrap or privatize state industry. As it

does, the economic power of the state shrivels, its assets disintegrate, and its revenues fall. Its ability to provide public and social service is then weakened. So, in turn, is its ability to resist pluralist demands and political reform. The state's loss of economic legitimacy lays bare its inherent political vulnerability, which invites still more determined opposition. It becomes not just a lame duck but a sitting duck.

Economic freedom, as noted, goes hand-in-hand with integration in the international economy, leading to business and social interaction with foreign investors, customers, suppliers, and managers, mostly with personal democratic beliefs. Attempts to contain this by creating a compartmentalized economy—part open, part not—might work for a while. Before long, the open part will become conspicuously more prosperous. Seditious ideas from abroad will land there and seep into the rest of the society. Fidel Castro's misgivings about freeing up part of Cuba's economy, as Cuban reformers advocate, suggest that he has a good nose for these risks.[9] This is not to say that undemocratic states are incapable of instituting capitalism. But they are clearly less hospitable to it—maybe less good at it. Suharto's Indonesia, for example, appears to be less able than its more democratic neighbors to weather the economic crisis rippling through Asia and is under mounting pressure, including from financial markets, for political reform. Even if undemocratic states condone economic freedom, they hardly offer a climate conducive to individual initiative needed especially for success in creating and applying information technology.

In any case, the durability of undemocratic free-market states is doubtful. Pinochet's Chile was often mentioned—until Chile became democratic. Singapore is the most commonly cited example; but it is too small and idiosyncratic to support any generalization. One can understand why undemocratic rulers in Hanoi, Beijing, and elsewhere are more eager to effect economic reform than political reform—having seen what happened to the Soviet Union, on one hand, and is happening in North Korea, on the other. But, a strategy to delay or stretch out democratization is probably feasible only in the short term.

Indeed, Chinese elites admit that political reform—leading to some recognizable form of democracy—cannot be postponed indefinitely if China's modernization is to continue. Perhaps they are coming to appreciate that their goal of stability can better be achieved by

accountable government than oppression. Their forecast, or hope, that this will occur over many decades—President Jiang Zemin recently prescribed democracy for China in 50 years—might underestimate the difficulty of inoculating free enterprise against free politics, especially as exposure to the rest of the world increases. Even now, though obscured by China's sorry human rights record, political openness and representative government are spreading at local levels. The appetite of Chinese citizens for freedom is unlikely to be satisfied by just a taste.

The presence of information technology can accelerate the demand for democracy once economic reform has been undertaken. A worker involved in computer-aided-design or -manufacturing is unlikely to be uninterested in sending and receiving e-mail or cruising the World Wide Web. Software programmers by day remain software programmers at night. Imagine a typical business office in, say, China within a few years: ubiquitous desktop computers, printers, fax and photocopy machines, local-area networks, each worker with a code-word, e-mail, wallet-sized diskettes. Is it hardly conceivable that the government is going to control when, where, how and why the employees-citizens use information.

The backbone telecommunications infrastructure needed for a modern economy—digital switches and transmitters that handle voice, data, and image—is also available to citizens with political grievances and goals. Conversely, a regime that refuses to build and allow modern communications for fear of the political consequences puts itself at a severe disadvantage in attracting foreign investment, developing its human resources, and participating in the world economy. So, no doubt with trepidation, the Chinese and others in a similar political predicament—the Saudi monarchy, for example—are digitizing and wiring their countries.

As authoritarian regimes yield to economic pressures to let in information technology, their continued attempt to restrict freedom of the press becomes a losing battle. Multiple media are demanded by foreign investors and homegrown private entrepreneurs. The content of state-controlled stations and papers appear evermore surreal and uninteresting as sources of raw truth increase. The government's

attempts to shore up its authority backfires when its legitimacy—not to mention its journalism—becomes a target of ridicule.

History will settle whether marketization invariably leads to democratization. The question is germane but not decisive here, for two reasons: First, nations that offer *both* political and economic freedom will clearly be *more* competitive in making and taking advantage of information technology than those whose capitalism is entombed in a stuffy, undemocratic system of government. Democratic market economies will have an advantage—how much is impossible to say—in attracting investors, stimulating innovation, and applying information technology. If Vietnam becomes capitalist but not democratic, its prospects in information technology and in the global economy will be less good than otherwise. With some exceptions—there will always be Singapores—undemocratic free-market states, lacking in legitimacy and openness, will fall short in the creation and especially the use of information technology.

Second, a state that embraces market economics and integrates into the core economy yet remains undemocratic will come to share the bulk of the *interests* of the great democratic powers even if it does not also subscribe to core *values*. Those already integrated into the core are largely motivated by common economic interests, such as: the security of world energy supplies; the smooth functioning of global markets and systems; the institutionalization of free trade; common approaches to transnational challenges. Distill current U.S. global strategy and one finds a preponderant economic motivation, with its concentration on East Asia, Europe and the Middle East, its relentless drive to open markets, and its willingness to project power to ensure access to petroleum. Though America's closest and best partners have been other democracies, it usually can also count on less savory states that share its material interests. As the world economic core integrates and expands, it acquires collective interests that will animate the behavior of all who participate, be they politically open or not.

Openness, Investment, and Success

The idea that the societies most able to exploit the information revolution will be free enterprise democracies integrated into the global economy is not so astonishing in light of today's world and how

it came to be. The Cold War was decided in large part by the sterling and appalling performances, respectively, of the United States and the Soviet Union in inventing, harnessing, and adapting to information technology. The Soviet Union had enough top-drawer scientists, upon whom it lavished fine labs and fine living. It also had military strategists who, early on, understood this technology's significance. But, as noted, it lacked a market of adequate size, signals, and capital-formation capacity. And, of course, it was the antithesis of openness. If the Soviet system was inferior in the *creation* of the dominant technology, it was by its nature a barrier to its *use*.

The kingpins of today's global information market are of course the free-market democracies of North America, Northeast Asia, and Western Europe. Within this group, U.S. leadership in most information technologies is a consequence of its greater economic freedom, including deregulation and a social-economic culture that reveres and rewards (to say the least) a Bill Gates. Because the U.S. market for information products and services is wide open to imports, domestic market size alone does not explain the American technological lead. Rather, the ideology of openness does.

A number of emerging countries, especially those of Southeast Asia and Eastern Europe, have shown promise in the production of information technology. India—democratic and, at long last, opening up its economy—is becoming a powerhouse in writing software for electronic export. Such successes have not been spontaneous. Rather, they result from investment decisions of corporations headquartered in the core, searching not only for new markets but also, more importantly, for cheap, quality labor to serve increasingly accessible global markets. Foreign direct investment brings technology, management know-how, higher-skill employment opportunities, access to distribution systems, exports and thus hard currency with which to invest in yet more technology, capital goods, national information infrastructure and human resources.

Because it fosters both reform and modernization, private direct investment is one of the main practical mechanisms connecting freedom and strength in the information age. It is not that Western multinational companies are sentimental about ideals such as liberty when they decide where to invest. But their calculations of risk and

return must take account of stability, the rule of law, protection from arbitrary executive action and bureaucratic inaction, and the quality of human capital.

Favorable investment conditions are more likely to be found in countries committed to both economic and political reform. This explains why, for example, the sudden appearance of democracy in Spain after Franco's death produced a steep increase in foreign direct investment, even though capitalism had been around for decades. Where firms are only interested in market access or cheap unskilled labor, they may be indifferent to human rights and democracy. But to the extent they want to climb the value-added ladder and to be in a country for the long haul, they must, and seem to, favor accountable government.

For the link between openness and success in information technology to be bypassed, authoritarian regimes have to overcome their countries' indigenous shortcomings by importing information products, services, and production know-how. They would have to invest state resources on a scale sufficient to compensate for the inherent inefficiencies and the lack of vibrant consumer markets. However the state comes by such resources, we can assume that it is at the expense of the national economy. Since autarky is not an option, given the need to import technology, such states would have to try to participate in world trade and attract investment despite being state-dominated, which is unlikely to impress potential investors. At the same time, they would have to seal off the domestic authority of the state from that foreign trade and investment. While such a strategy is not infeasible, it is at best an expensive, slow and uncertain path that will lead to sub-par performance.

European (German, Italian, Spanish) fascism and Soviet communism were able to achieve temporary industrial viability. In the German and Soviet cases, this included scientific and technological excellence. But their output depended on unsustainable war economies or artificial state support—both of which led to the abyss. Moreover, such success as they achieved was more feasible in heavy industry than it is in information industry. Even then, in the Soviet case, the result was a vast, bogus industrial sector that has been dying ever since its plug was pulled. The Nazi case shows that a patently monstrous state was able to induce at least a spasm of economic and

technological success, based on a variant (or perversion) of capitalism. Spanish fascism did not end in the same utter destruction as did the German and Italian franchises, but it did result in a moribund smokestack economy before being rescued by reform, democracy and integration.

If the efficacy of state power was limited in the industrial age, it has vanished with the information revolution. Fascism is hardly conducive to the kind of creativity one associates with sandals, cutoffs, and the proverbial two guys inventing information technology in a garage. Even some of the giant information technology corporations are mediocre at creating conditions for breakthrough ideas and ingenious applications, which is why the smart ones incubate new ideas separate from their main business structures. State organs are, of course, far worse. This technology, as many have observed, is undoing vertical power by decentralizing initiative and work, permitting scale without mass, distributing economic power, and rewarding agility. It favors and flows from unbound individualism, and it loathes the regimentation that comes with state control.

It is not enough to invent and build information systems: they are made to be used. Operating complex systems requires talents and disciplines—management and engineering, mainly—that are found in abundance in the private sectors of the advanced democracies. Here again, governments, democratic or not, are inherently inept in these abilities, which have little in common with the competencies needed to govern. Just compare telephone service in a country with private service providers to that in a country with a government-run postal, telephone and telegraph (PTT) system. In the United States and other advanced free-market states, government now contracts with private firms to perform nearly all systems development, integration, and operation. The importance of these skills in the successful use of information technology makes it all the more difficult for a closed, state-controlled system simply to procure what it needs from the international bazaar, let alone to rely on indigenous capabilities.

If any authoritarian state could defy the equation of freedom and technological success in the information age, it would be China. The prospect of China becoming a modern economic, technological and military power while remaining a closed system has grave

implications, namely, that it could become both militarily strong and hostile to the United States and to the interests and values of the democratic core. In light of its uniqueness and importance, the case of China requires special analysis.

Because of its potentially immense domestic market and role as the world's largest low-cost manufacturer of labor-intensive goods, China has considerably more leverage than the typical emerging country. Its bottomless sea of underutilized labor (now engaged in subsistence farming) gives China virtually unlimited capacity in its key factor of production. The Chinese are using their leverage strategically to obtain what they need: foreign capital, management know-how, access to export markets, and technology.

Still, there are several reasons to doubt that China can, for long, be both economically successful and politically closed. China must integrate into the world economy; indeed, this is exactly the purpose to which the Chinese are applying the leverage their huge market and labor supply gives them. While self-sufficiency remains a stated tenet of Chinese political thought, that ideal is already being negated by the prevailing Chinese strategy of importing technology and exporting manufactures. (Growing Chinese dependence on foreign oil and gas is a matter of necessity, not choice.) So the question is not whether China can remain authoritarian while sealed off from the world—like some enormous Myanmar—but whether it can be successful and integrated without evolving into a more or less full-blown capitalist system with a brand of democracy.

China has the market clout to resist frontal assaults against its lack of freedom, as we have seen vividly in the defeat of the U.S. attempt to withhold most-favored-nation status. American, Japanese, and European firms feel they cannot afford to be prissy about the lack of political freedom in China. Yet state control of Chinese economic and political life is under siege. Its growing middle class "will demand participation in political decision-making . . . to protect its gains. The new middle class is increasingly armed with information and the communications tools to . . . organize political action."[10] Several lines of defense have already been abandoned: intellectual and cultural freedoms are growing; state enterprises are being deserted as fast as the government can afford the dislocation costs; foreign contact is virtually unrestricted; freedom of movement is accepted. The Chinese

themselves admit—many of them surely hope—that the incorporation of Hong Kong will alter China, and that the peaceful, voluntary unification of Taiwan with the mainland will require sweeping political reform of the latter.

Finally, to succeed with information technology, China will not only need to acquire and create it but also to encourage its use. It is implausible, if not infeasible, that China will become a major producer of information technology solely for its own military and for export, while suppressing its domestic market. Indeed, there is no indication that the Chinese are considering such a futile strategy.

It is just as hard to imagine that China would use information technology in its productive enterprises and in support of foreign direct investment, yet at the same time effectively block its general use in the country's economy and society. Unless China gives up its current development strategy altogether, Chinese citizens will have expanding and increasingly affordable access to a modern and extensive telephone system, computers, software, broadcast media, wireless, and data communications. Sure enough, as of now, Beijing is abandoning restrictions on Internet use.[11]

Beijing will not be able to forestall a national information revolution. Indeed, its current course will make it an accomplice to one.

Beijing will not be able to forestall a national information revolution. Indeed, its current course will make it an accomplice to one. As previously noted, the correlation between widespread access to information technology and democracy is strong. Different as China might be, there is no reason to think the link would not apply there. So even in the limiting and most important case of China, an authoritarian regime will be unable to withstand pressures for both political and economic freedom *if* it is to achieve technological success and integration into the world economy.

Notes

1. George C. Lodge and Ezra F. Vogel, eds., *Ideology and National Competitiveness: An Analysis of Nine Countries* (Boston, MA: Harvard Business School Press, 1987). In the concluding chapter Vogel argues that "countries with a coherent communitarian ideology have been best able to adapt to this international competitive economic system." The stellar performance of countries with a communitarian ideology can be illustrated by . . . their relative success in achieving governability, in expanding sectors with promise of growth, and in limiting damage in sectors that have lost hope of maintaining broad-based international competitiveness." Countries in the Vogel's top category include Japan and Korea; countries in his fourth category include the United Kingdom and the United States (303-306).

2. Recent evidence of this is the opposition—so far, successful—of the information technology industry to federal government proposals to hold in escrow the keys to private computer network encryption systems.

3. Whether government action against Microsoft's dominant position is required in order to foster competition is beyond this essay's scope. If and as the government does act in this case, it is not a sign that the computer and communications industries are about to be regulated in any broad sense. Indeed, even Microsoft's principal critics within the industry have made clear that they are not looking for regulation.

4. Institute for Defense Analyses, *Research Summary* 3, no. 2 (1996).

5. Admittedly, this could be explained by their general pace of economic growth and modernization, which would make them both good customers and producers of information technology.

6. Christopher R. Kedzie, "Communications and Democracy: Coincident Revolutions and the Emergent Dictator's Dilemma," RAND Graduate School, Ph.D. dissertation, RGSD 127, RAND Report No. MR-678.0-RC (Santa Monica, CA: RAND, 1996).

7. William McNeill, *The Rise of the West: A History of the Human Community* (Chicago: University of Chicago Press, 1963).

8. Samantha Fay Ravich, "Marketization and Prosperity: Pathways to East Asian Democracy," RAND Graduate School, Ph.D. dissertation, RGSD 132 (Santa Monica, CA: RAND, 1996).

9. Edward Gonzalez, *Cuba Cleaning Perilous Waters?* RAND Report MR-673-OSD, (Santa Monica, CA: RAND, 1996).

10. Michel C. Oksenberg, Michael D. Swaine, and Daniel C. Lynch, *The Chinese Future,* Pacific Council on International Policy and RAND Center for Asia-Pacific Policy, 1997.

11. There remain some sites that are blocked off, such as those advocating Tibetan secession. An excellent analysis of Beijing's gradual but inevitable

retreat from its strategy of screening what the Chinese people learn via new information technologies can be found in *Shaping U.S.-China Relation: A Long-Term Strategy*, by Michel Oksenberg and Elizabeth Economy (New York: Council on Foreign Relations, 1997).

3.
Knowledge and National Power

For knowledge, too, is itself a power.
Frances Bacon

Information Technology and Military Capabilities

So far, this essay has argued that free-market democracies that are integrated into the world economy have distinct advantages in inventing, making, and using information technology. The strength of this technology in the civil economy, especially to meet the demands of decentralized and globalizing private enterprises, also gives such countries an edge in military applications, which utilize the same technologies (semiconductors, software, networking) and skills (design, engineering, integration) that the larger civil market requires and produces. Freedom, long a source of moral strength, is now the key to physical strength as well.

This essay's second proposition is that military power and other types of national power depend increasingly on broad-based competitiveness in the creation and use of the dominant technology. If true, in conjunction with the first proposition, then power will come more easily and be more sustainable for states whose economic and political freedoms and integration in the world economy make them competitive in information technology.

Information technology is beginning to dominate military operations and power. This will remain the case for the indefinite future, as the information revolution settles into the information age. (Arguably, nuclear weapons can "trump" information-technology-

based military capabilities; but nuclear weapons have, if anything, become less useful in practical military strategy and power since the end of the Cold War.) The centrality of information technology in military capabilities is now recognized in the two most authoritative recent statements on U.S. defense strategy: the *Report of the Quadrennial Defense Review* and *Joint Vision 2010*.[1] It took the failure of the Soviet Union, victory in the Gulf War, and an information revolution in the country's private sector to bring the U.S. defense establishment to this conclusion. In fairness, that is relatively quick: the annals of strategy reveal that successful militaries are slow to change unless jolted by a clear threat or costly war. Moreover, the U.S. military is a good deal further along in exploiting information technology than any friend or foe.

If the industrial age produced the "hardware" of modern warfare—mechanization, propulsion, vehicles for land, sea and air, long-range weapons, high explosives, and the factories to make it all—the information age is creating the "software." Already, the new era—with its precision weapons, battlefield intelligence and information—has solved the hardest military operational problem the industrial age produced but never could solve (short of using nuclear weapons): the sudden, swift, massive armor attack, a.k.a. *Blitzkrieg*.

Information technology is also beginning to remedy the main defense management problem that the industrial age caused but did not solve: administering efficiently the staggering complexity and scale of the military establishment and its procurement, planning, personnel, and logistics needs. Until recently, the U.S. military was applying information technology to improve at the margin its traditional ways of fighting and managing. Like many successful private enterprises, it is now beginning to change those ways in order to turn the new technology's promise to strategic advantage.

The U.S. defeat of Iraq in 1991 provided but a sneak preview of information-age military power. The United States fought mainly with mechanized capabilities and tactics, concentrating massive ground forces in the theater of operations, relying on the control and penetration of enemy air space, and moving mountains of supplies within reach of its combat forces. As fortune would have it, Saddam Hussein was a fourth-rate strategist with a third-rate army and a

subterranean air force. So U.S. forces were able to render Iraq defenseless and mathematically destroy its forces and infrastructure without running much risk of casualties. Credible combat simulations, in which the United States is assumed to exploit its information technologies, predict positive results for U.S. forces against even more capable foes.[2]

A decade or so from now, the United States could thrash such an opponent without placing large forces within range of enemy weapons—a true revolution in warfare. As military forces and operations undergo such a revolution, so will perceptions of military might. The size of armies, the heaviness of armored forces, raw numbers of combat aircraft and ships, and even atomic megatonnage will matter less in the new era than in the one now passing into history.

The performance—i.e., accuracy, reliability, lethality—of individual weapons has been enhanced by microelectronics networking. The information technology content of the average military system has grown steadily over the past 20 years. (The growth would be even more dramatic but for the fact that the cost of information technology has been shrinking relative to other components.) Data communications can now unite sensors, platforms, weapons, and command into far more potent capabilities than those of high-performance systems operating autonomously. A new military formation—the network—permits forces to be both dispersed and integrated, making them more maneuverable, deadly and invulnerable.

The ability to integrate weapons, sensors, platforms and other military systems in such networks depends on elegant but rugged command, control, communications, computing, intelligence, surveillance and reconnaissance (mercifully, "C^4ISR"). The side with C^4ISR superiority—"information dominance," in the jargon du jour—can track its adversary's every move, manage the network of its own forces, and largely determine the course of the conflict.

Information technology is eliminating the inverse relationship between weapon range and accuracy, and thus lethality. Combined with the improved ability to find and follow enemy units, such lethality permits rapid and systematic destruction of enemy targets.

The need to fly manned aircraft into unfriendly air space to do this job is declining, as accurate standoff weapons can be used to destroy any target and as unmanned vehicles are developed.

Small, light ground units able to call upon large arsenals of affordable precision-strike munitions on remote platforms can pack a heavy offensive punch. This will make them more than a match for much larger enemy forces and permit quicker deployment and reduced logistical demands, all thanks to the improved lethality and connectivity provided by information technology. These capabilities will expand the ability of those possessing them to project power, strike with impunity from any distance and direction, and achieve decisive victory, all with lower casualties—projecting and concentrating "force, not forces."

The day could come when standoff firepower is so effective that the battlefield will consist of only enemy forces at the receiving end of withering long-range bombardment from unseen weapons platforms. Tactical operations could be fought from strategic distances. Mechanized aggression could go the way of the cavalry charge. In the case of the United States, not only will its homeland enjoy sanctuary, but so will its forces. This asymmetry will improve the credibility of the threat to use force by those with this capacity and give pause to those without it, thus improving deterrence.

The networking of forces does not eliminate the need for ground forces in all instances. However, it can revolutionize the way they too are organized and employed. With information technology, they can disperse and "swarm," executing extremely fast maneuvers and lethal attacks without massing. An enemy force without such C^4ISR, deployed in large formations, will find it difficult both to attack such networked ground forces and to survive their attacks.

Information technology has also brought within reach the elusive goal of joint warfare, which provides enormous combat advantages over those that lack it. Instead of waging segregated warfare among ground-, sea-, and air-based components, "jointness" unifies forces to carry out decisive operations. Theoretically, any capability from the entire integrated force, depending on priorities, can be brought to bear on any component of the enemy's force, but not vice versa. As options multiply, the adversary's hope of defending its disjointed forces and its infrastructure fades. The effects of concentrating forces can be

delivered without the risks and costs of spatially concentrating them—not unlike the way global corporations can now achieve scale while being distributed.

Using private-sector information technology and practices, defense logistics are becoming leaner and quicker. American military leaders still lament the difficulty of restructuring and shrinking their huge support establishment and inventories. But they have at last begun to scale the foothills of this mountain chain. Most other militaries, far behind, remain cursed with sluggish support establishments that drain resources and hamper operations as much as support them. Information technology also offers the possibility of streamlining procurement, improving resource management, sharpening training (e.g., with simulations), and enhancing productivity throughout the defense establishment.

As the military procurement system is made business-like, the cost of the information technology content of military equipment and communications should begin to fall as steeply (by double digits annually) as have the costs of comparably complex civilian systems and the root information technologies. Those defense establishments that have the technology and the brains to exploit it will then enjoy a compounding cost-performance advantage over those that do not. Like every new generation of computer and communications system, tomorrow's long-range precision-strike weapons, being chock-full of information technology, will be both superior and cheaper. In addition, reliance on target-location data from distant sensors (e.g., the Global Positioning System), thanks to data communications, enables weapons systems to achieve pinpoint accuracy without expensive onboard guidance systems.

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While less thrilling—expect no Tom Clancy novels about it—this "revolution in military business affairs" will have *strategic* importance.

A clanky, information-challenged, defense establishment can rob a nation of the resources needed to field strong forces, and then rob the forces of agility—perhaps even victory—when they are used. Information technology, in hands of determined reformers, can slay this monster. A state-dominated, industrial-age political system might be able to make, buy and use this or that weapon, but it is condemned to make do with a calcified industrial-age military establishment, which will severely limit its power.

In sum, dramatic enhancements in all key military "bilities"—mobility, penetrability invulnerability, supportability and affordability—are available to defense establishments that can transform themselves. Both "tooth" and "tail" are exploiting the information revolution. Compared to commercial sectors, the military is getting a late start, even in the United States. But it will have a running start in countries with robust private sectors.

Such change depends vitally on whether a much larger information revolution is underway. The U.S. experience shows that the applications, techniques, and principles that permit such reform are mostly imported from the surrounding economy and society. The fundamental concept and technology—networking—has been and will continue to be honed by the private corporations tying together distributed operations. Moreover, the research needed to carry forward all the information technologies of military value far exceeds the capacity of any military establishment, whether the U.S. Defense Department or China's Peoples Liberation Army (PLA). The Pentagon's annual R&D budget (roughly $30 billion) is only a fraction of the total R&D from which U.S. forces benefit. The more a military utilizes information technology, the more nourishment it can get from the private economy.

States that shun free markets might nevertheless be able to acquire particular information technologies for military purposes. Of course, the more ambitious those purposes, the more technology they need. The fear that an unreformed, hostile China, will "leapfrog" the United States by acquiring an arsenal of cheap, easy-to-assemble, easy-to-use precision-guided munitions overlooks the fact that such munitions are vastly more potent when used within a larger and integrated network of sensors and forces. Moreover, as noted, the reason precision-guided munitions are getting cheaper is that guidance intelligence is no longer

on board each missile but in that wider network. Lacking the network, states buying "smart" weapons will find them dumber than they expected.

Information technology, physically defined—hardware and software, devices and systems—only partly accounts for U.S. military superiority and for the inherent advantages of open societies. The quality of American military personnel, on the rise since after Vietnam, is an equally towering strength. The importance of quality pervades the officer and enlisted ranks. If the superiority of American troops over Soviet troops (and of West German over East German troops) that became clear at the end of the Cold War is not evidence enough, just wait until we get a good look at the average North Korean soldier.

While personnel quality encompasses a bundle of aptitudes and education, more and more it emphasizes skill in "knowledge" tasks and technologies. An ample supply of high-quality information-oriented people has become a critical ingredient for military excellence, and it is more readily found in free-market economies and open societies with ubiquitous information technology. Democracies are more capable of providing both the "machine" and "man" halves of information power in military affairs.

Even though the United States is transforming its forces, structures, and doctrine to exploit information technology, it does not automatically follow that other states must mimic this approach in order to pose military challenges. North Vietnam, for example, understood the weaknesses of U.S. strategy and tactics—not to mention will—and did just the opposite, fighting on foot beneath U.S. airpower. In the future, reliance on massed platforms in open territory, skies, and waters will guarantee defeat against information-rich forces like those of the United States. But low-intensity conflict, the use of dispersed infantry, and hiding are promising tactics against such forces, and they do not require information technology.

Does the prospect of low-tech asymmetric strategies contradict the idea that nations must excel in information technology if they are to avoid being at a military disadvantage? The revolution in military affairs is in its infancy. As the application of information technology improves, a growing assortment of counter-strategies will fall victim to it. Stationary troops and exposed tank columns are the easiest but

not the only targets that can be detected and destroyed by increasingly precise, quick, and affordable munitions of a joint, networked force.

This does not exclude that some hostile state might be able to buck the trend, shun the dominant technology, and still present a military threat. But any state that aspires to be a "great power"—the subject of this essay—or is headed for a strategic showdown with the United States, will have to incorporate information technology increasingly into its military capabilities. In time, as it steps onto a field of competition defined, preferred, and dominated by the free-market democracies, it will be able to advance only by exposing itself to the pressures for reform and freedom that create modern knowledge-based power.

Not surprisingly, this is what China is doing, not because it is bent on confrontation with the United States, but because the Chinese appreciate that projecting power effectively requires information technology. The more ambitiously they attempt to buy or make information technology, and the more widely they apply it, including for military capabilities, the more they will find themselves sucked into a larger revolution.

Freedom as Vulnerability

Yet pessimists warn that the information revolution is posing new security problems that could prove more severe for open than for closed societies. Because the United States and its democratic partners are more economically dependent than other countries on connectivity and computing, they could become more vulnerable to information warfare. This threat could eventually end the sanctuary from hostile attack the United States now enjoys. Integration in the world economy, with its crisscrossing networks, enlarges the risk.

Threats to the democracies' cyberspace could endanger not only their citizens' quality of life but also their resolve. As it is, Americans are ambivalent about projecting power. The prospect of a disruption of the national economy due to network attacks could tilt that ambivalence distinctly negative, thus emboldening a militarily inferior enemy to challenge U.S. interests.

Moreover, as the United States and other advanced nations become more dependent on information technology in their military

systems, they will become more susceptible to information warfare attacks during operations. The revolution in military affairs places a bull's eye on the C^4ISR that is critical to it. In the extreme, the ability of the United States to project power and to strike at will could be undermined if an otherwise weaker enemy interfered with the links that fuse U.S. sensors, permit joint warfare, and connect small, potentially vulnerable units to stand-off firepower. Even if the military establishment secures its own dedicated links and nodes for combat operations, effective information warfare attacks on the U.S. public telecommunications network, on which 95 percent of military traffic flows, could create havoc in a crisis and hamstring a major power projection campaign.

Worrisome enough in the hands of a small rogue state, information warfare could present a major challenge if a large and technically capable country like China, India, or Russia chose to develop it. Perhaps the PLA or what is left of the Red Army will conclude that chasing the United States into the revolution in military affairs would, for now, be futile. Instead, concentrating on techniques to disrupt U.S. computer networks could yield interesting results with modest investment—and without waiting for the larger information revolution to occur.

In view of such vulnerabilities, could the economic and political openness of the United States and other advanced democracies become more of a strategic liability than asset as the information revolution unfolds? Probably not. Recall fears during the Cold War about perceived Soviet "advantages"—a submissive populace, no free press or public opinion pressure, a well-oiled propaganda machine, inherent secrecy, more spies, no consumer demands to compete with state needs. They turned out to be Soviet handicaps. If openness helped decide the struggle with a closed superpower before the information age, it should be even more advantageous in the future, despite some pitfalls.

More concretely, free-market democracies should be able to fashion sufficient security, resilience, and redundancy into their civil and military information systems to avoid being hobbled by hostile information warriors. Private enterprises, especially large providers and users of information systems and services, are already working to

improve security, for their own profit-and-loss reasons. The national effort to combat information warfare, measured in dollars and genius, will far exceed what the Pentagon budgets. Moreover, the United States does not need absolute security from cyberspace invasions, as it does from nuclear attack. A certain tolerance and toughness should be possible for an open society that frequently experiences blackouts, stock market dips, cable cuts, and traffic jams.

Yes, the combination of societal freedom and global integration might seem to increase the likelihood and consequences of cyberspace attacks, conceivably producing a finite risk of multi-system failure. But it is also possible that the irregular, unregimented, decentralized, and adaptive patterns of open societies will make them more able than rigid, closed systems to withstand disruptions. After all, it was the more structured and inert Chinese and Arab civilizations that could not keep up with the tumultuous West after the Middle Ages. The image of democracies as fragile does not track with McNeill's description of their rugged origins and rough ride through history.

Some vulnerability will be a fact of life for democracies in the information age, if only because they will make greater use of information technology. Yet countries that are superior in the military application of information technology will also have the greater potential to conduct offensive information warfare—which is the case today (led by the United States). They will hardly be defenseless. Moreover, the democratic powers are unlikely to confine themselves to responding in kind to damaging information warfare attacks. If they can find the source, which improved "track-back" technology will help them do, they can settle scores with their superior conventional military strength.

In addition, the skill needed to wage information warfare could carry a "political virus" that might lead to the weakening of the perpetrator's own position. Whatever the application, information-age warfare depends on skills that depend on or can contribute to openness, because of the technology's nature. Ultimately, this technology is bound to be a better offensive weapon against states that dread information than those that thrive on it.

A more fundamental question is whether we are experiencing no more than a bend in the endless, winding road of military power that

happens now to favor democracies. If so, the next turn could benefit despots. With the relentless spread of virtually all technologies, what faith have we that states and non-state actors hostile to the interests of the democratic core will not get weapons, perhaps cheap high-tech ones, that neutralize the superior capabilities of the United States and its friends?[3] After all, integration rapidly propagates innovation throughout the world economy. Arguably, this will flatten out technological strength, which could in turn lead to the equalization of military power, or at least trouble ahead for any country that relies mainly on an edge in technology for its power.

Even though the democracies might retain military superiority because of their lead in information technology, their ability and will to use their power could be undermined by improved missiles, mines, and of course chemical and biological weapons in the hands of hostile states. It might not take a very high forecast of casualties to deter the United States from taking military action even against an inferior enemy, especially if no vital U.S. interests were at stake. Perhaps the military importance of information technology will wane in the next cycle, supplanted by weapons of mass destruction or swarms of guerilla fighters (this time, mujahideen instead of Vietcong). Democracies would then have no advantage and certain major disadvantages, including the higher value they place on human life.

Then too, even if democracies can more easily achieve military superiority in the information age, it is important not to overrate the importance of superiority per se. If the United States is held at bay by its own fear that weapons of mass destruction could be used against its forces or even its territory, nominal U.S. superiority will be of little military value, and U.S. strategic standing will suffer.

Yet these reservations do not nullify two fundamental advantages of knowledge-based military power: it is more usable than less discriminating weapons, including those of mass destruction; and it reduces the human role in—though never the responsibility for—international violence. The information revolution in military affairs makes the use of force easier, quicker, more surgical, more refined, and safer (if war could ever be considered safe, let alone refined). The combination of accurate long-range weapons and data networks can improve the ability to project and use power over great

distance, in any direction, at low risk. Information technology can reduce its possessors' reliance on placing human beings on battlefields, whether to fire weapons, man sensors, halt an enemy army, or mount a counteroffensive.

Even if revolutionary military technology finds its way into the hands of rogues, and even if those rogues master its use— which is problematic because they are rogues—its greatest value will not be to them but to those who need to project power without heavy losses. Because of their global interests and public aversion to casualties, the United States and other democracies have the strongest incentive to exploit the technology and stand to benefit the most.

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Hostile states will surely develop countervailing capabilities and tactics. But the essential point remains: superior information can provide a transcending military advantage, which the countries strongest in the essential technology will enjoy. While old forms of conventional military power are ultimately enclosed by finite limits in physics, time, space, and velocity, the exploitation of knowledge presents an open field to those who command it.

This century's history (e.g., the 1930s) provides painful examples—Manchuria, Abyssinia, Czechoslovakia—of the failure of Western democracies to use their military might or to convert their economic and technological superiority into military might when, as it turned out, they should have. Information technology cannot instill the wisdom to recognize dangers or the courage to confront them. So why assume free-market democracies will in fact exploit whatever potential superiority they have?

Obviously, we should not so assume. However, it should be noted that the free-market democracies will have the essential materials in abundance: information technology; intelligence capabilities; superior knowledge-based human resources; and greater economic strength. Democracies may not always seem to have superior

power because theirs is, by definition, distributed. Consider, for example, the West European members of NATO: their defense budgets have been shrinking, yet they have the world's second strongest collection of modern military power. Japan has the potential quickly to jump to number three despite having eschewed military power.

Democracies might not always make the right, tough choice when faced with a threat. But they will have important advantages when they do. The mobilization of military power in the information age, more so than in the industrial age, will depend on the technological vitality of the civilian economy and the ability of the military to be able to absorb that technology and draw on that vitality quickly. It will thus depend on the degree of economic and political openness of the society and the extent to which those ways have been introduced into the military establishment. There is more power inherent in a democracy—not in the state but in the nation. Information technology is key to harnessing it.

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While blind confidence would be foolish, the rise in the relative power and mobilization potential of open societies will not easily be reversed. This rise is due not only to a knack for making better gadgetry, but to a superior ability to gather, share, and digest information for the purpose of enhancing knowledge and performance. The information revolution is not a cycle but a threshold in human advancement. Having been introduced to warfare, as it has been to other spheres of human endeavor, it will be crucial from here on—as defining and permanent as, say, energy is to machines and seeds are to agriculture. Hereafter, the weapons and tactics that appear along that road of military development will be shaped by the dramatic

increase in the availability of information and the expanded role of knowledge that we have just begun to witness.

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New Power

Since the end of the Cold War—perhaps earlier—military power has been overtaken in importance by other, "softer" forms of power in world politics.[4] Take Japan, which must now be regarded as the world's second most powerful nation (replacing the defunct USSR, whose sole claim was its military strength). Or, more generally, consider the rise of Asia, a region with less military capacity and sophistication than the Atlantic democracies. Yet the connection of freedom and power still applies. Any explanation of the enhanced importance of Japan and the rest of Asia, even without great military strength, must recognize the central role of information technology and the openness that both nurtures and flows from it.

Other than military capabilities, national power includes economic strength and stability, industrial output, technological output, savings and investment levels, market size, infrastructure, exploitable but renewable resources, education, management competence, and scientific capacity. Every one of these sources of power depends increasingly on human knowledge, not commanded by the state but arising from the freedom to create, profit, adapt, and challenge the status quo. Free-market democracies do not monopolize these categories of non-military power, but they are superior in using information technology and human talent to develop them. Therefore, a continued decline in the relative importance of military power will not reduce the importance of information technology, nor the overall democratic advantage.

There is yet another, subtle but increasingly important aspect of power in the new era: the ability of a system, or society, to sense the need for change and to adapt.[5] The Soviet Union and what became of it illustrate the lack of this power, as well as the consequences. In a world of complexity and flux, with the future unpredictable but surely quite different than the present, the race will be not only to the swift but also to the adaptable.

The capacity to change has many components: technology, systems, institutions, practices, legitimacy, and of course freedom. In any "complex adaptive system," the ability to assimilate, share, and act on information is indispensable for success. This requires excellent communications and openness, internally and externally. While the intelligence and policy-making organs of the state have a role to play, decentralization and privatization of economic and technological decision-making are key, as is the extent of participation in the world economy. Democratic systems, awash with information, in touch with the world, and communicating freely within, tend to adapt better than others.

It has been observed by Brian Arthur that standing among leading information technology firms is not just about product design, cost, and quality but also about "cognizing" the interaction of ideas, market, and competition. The cycle of taste, innovation, production, distribution, maturation, and redefinition is so compressed and demanding that those who can out-fox, out-plan, and out-flank all others can define not only the standards but the rules, indeed the very nature, of the game—as the point of departure for yet another round, or a new game.[6]

So it is, increasingly, with nations. Power will come from opportunism, from having confidence in one's strengths yet being able to perceive and act on the need for change. It will come from the capacity and daring to shape the environment.[7] Although President Clinton's appeal to his G-7 counterparts to be more like America was off-putting, many Europeans and Asians—particularly from the business world—would agree that the United States, a "complex system" to be sure, has been making the right moves, though not by government dictate.

The more insightful renderings of the revolution in military affairs illuminate more or less the same phenomenon: the importance of perceiving and acting on the need for change, getting "inside the decision loop" of the adversary, not in reaction to a crisis, when it could be too late, but by a continuous feel for what is happening, irrespective of complexity.[8] In a way, the idea of cognizing power and war is ancient. But the speed with which technology can change, itself as well as its objects, has made adaptability more important than ever. And for those with superior information technology and the open-mindedness to make use of it, outsmarting adversaries is a realistic strategic advantage.

To illustrate, no sooner had the advantages of precision strike been demonstrated in the Gulf War, than rogue nations intensified their acquisition of weapons of mass destruction in an effort to neutralize the American advantage. Even before its adversaries have fielded many of these weapons, the United States is shifting toward greater reliance on stand-off attack and the streamlined battlefield forces such reliance permits. But since this revolutionary move depends vitally on information networks, as noted above, it has already prompted U.S. initiatives to counter the anticipated threat of information warfare against C^4ISR. And so on.

Is the United States the Microsoft of power in the new era, or merely the AT&T—the market shaper or just the market leader? Does the same openness that fosters superior inventiveness of devices, systems, and applications also apply at the level where strategy is crafted? Or will American thinkers—officers, strategists, stateswomen—succumb to conservatism absent a war, a new global challenger, or some other crisis? The answer depends on how well, individually and institutionally, they can act on information, which the rest of this open society does quite well. With the alchemist's gift to turn data into knowledge, the United States and other free-market democracies should have superior abilities to adapt.

Information technology is generally weakening all forms of vertical authority and strengthening networked communities of interest. One of the human institutions being weakened is the nation-state itself. National governments, including democratic ones, are losing some of their economic, political, and practical importance. So even as nation-state power is concentrating among the free-market democracies, they

too will experience losses to non-state actors, some of which could in turn exploit national vulnerabilities.

While this is true, the general erosion of state power will be most dramatic for those nations in which that power has been dominant. The American economy, society, and technology depend relatively little on central government. American pluralism is accustomed to nongovernmental communities of interest. So nations like the United States are less likely to be undermined by information technology than those decrepit states that rely on control rather than legitimacy and where economic and technological performance depend on that control.

Richard Ullman has recently argued that one of the main goals of U.S. foreign policy should be to foster "strong states" in order to help the United States deal with growing transnational dangers. It is his sense of what makes a state strong that is most insightful. It is not state power, based on the control of resources, information, and peoples' lives, but strength from legitimacy. Democratic states are inherently stronger. But we are beginning to notice this only now that the information revolution is revealing the economic and political weakness of illegitimate states.[9]

In sum, the information revolution is strengthening both the link between freedom and knowledge and the link between knowledge and power. It has thus created a link between freedom and power—between openness and strength. In the case of the United States, this is already evident in the combination of military superiority, leadership in information technology, and the withdrawal of government from the economy. But the United States has not cornered these attributes. The formula seems universally valid.

Notes

1. U.S. Department of Defense, *Report of the Quadrennial Defense Review*, May 1997; and, *Joint Vision 2010*, 1997.

2. A series of RAND studies in recent years, exploring very large numbers of operational scenarios, shows that U.S. forces should prevail easily against today's rogues provided the forces have at least modest warning time, can gain access to the theater, and can count on local allied support. (See for example: Paul Davis et al., *Access Constraints and Persian Gulf Contingencies: Potential Problems and Measures to Mitigate Them*, 1997). This concern about

warning time, access, and local support—e.g., if there is a threat of the use of weapons of mass destruction—is contributing to U.S. interest in networking and streamlining forces, as well as developing better stand-off capabilities.

3. James Stavardis, "The Second Revolution," *Joint Force Quarterly* 15 (Spring 1997): 8-13.

4. Joseph Nye, *Bound to Lead: The Changing Nature of American Power* (New York: Basic Books, 1990).

5. Any discussion of adaptive planning and complex adaptive systems should acknowledge the roles of RAND and the Santa Fe Institute in pioneering the applied and theoretical work on this new way of thinking about and planning for change and the future.

6. Brian Arthur remarks to the Highlands Group, Santa Fe Institute, December 3-4, 1995.

7. Emphasis on "environment shaping" in the recent Quadrennial Defense Review suggests confidence that the United States can affect and not simply react to international developments.

8. Samuel B. Gardiner and Daniel Fox, *Understanding Revolutions in Military Affairs* (Santa Monica, CA: RAND, 1996).

9. Richard H. Ullman, *Strong States, Strong Hopes: Guidelines for Post-Cold War United States Foreign Policy and the Role of Foreign Assistance* (Washington: The Aspen Institute, 1997).

4.
Powers as Partners

The Chinese are a great and vital people who should not be isolated from the international community.

—Richard M. Nixon, 1970

Power, Convergence, and Common Success

The congruence of freedom, knowledge, and power is no guarantee of a peaceful world. But it does point toward greater security insofar as democratic powers are not hostile toward each other and have military superiority over undemocratic states that are hostile to them. At a minimum, the risk of great power conflict—the sort that made the 20th century so violent—would be reduced. As the democratic powers become more integrated economically, they will become even less inclined toward confrontation, having little to gain and much to jeopardize, and more inclined toward joint pursuit of their common interests.

Rising powers should come to see the world in much the same light. In the information age, they must integrate in order to rise; and integration reduces conflict and increases collaboration. As national success depends less and less on relative power, hegemonic rivalry will be regarded as pointless and even inimical to success. The standing among the principal nations will become less important in world politics.

The claim that economic integration dampens conflict invariably evokes the reminder that the nations of Europe were interdependent prior to the outbreak of World War I. True, but the relevance of that history to the future begs examination. An important difference between then and now is that the old European powers were engaged

mainly in commodity trade, whereas today's integration encompasses vital, high-value-added products and services, including information technology.[1] Commodity trade can be redirected if cut; dependence on common, crucial inputs cannot. In addition, the link between national success and relative power that characterized pre-WWI Europe has been called into question, if not obliterated, by the failure of Germany and Japan in 1945 and the Soviet Union in 1991. In sum, the old European powers were not truly integrated, and they saw each other's success as a threat to their own. Under these circumstances, their trade did not alter their strategic calculus.

In fact, colonialism—a major arena of economic interest among the powers of late-19th century Europe—far from discouraging conflict, stoked it. Industrial-age economies depended on the control of raw materials, valuable land, and trade routes. Britain's empire and Germany's continental preeminence were economically important and depended on strength—indeed, on relative strength. Every power's industrial capacity (shipbuilding, steel, etc.) could be seen as a potential threat, certainly not a benefit, to other powers, especially given the possibility of sudden realignments. Hegemony could yield real benefits; consequently, hegemonic rivalry had a certain (disastrous) rationality. The low-value trade taking place engendered no sense of common economic fate, common strategic interest, or trust. Add the turn-of-the-century's cocky brand of nationalism, and the result was a flammable mix of maneuvering, distrust, and miscalculation that ignited in 1914.

No such competition for colonies, land, or resources—not even scarce energy—pits the leading democracies against one another today. In the information age, the existing powers have no interest in conquest, for it leads nowhere they cannot get more directly through investment and cooperation. Globalization, the liquidity of economic value, and the creation of a transnational pool of information technology reduce the utility of power, especially relative power. How can territorial dominion, let alone aggression,

Nowadays, success produces power, not vice versa

help when the prize is information and ideas? Nowadays, success produces power, not vice versa.

Integration in the information age leaves the leading powers with no reason to wage war with one another and every reason not to do so. Countries that fought a war of annihilation just 50 years ago—Japan, the United States and the West Europeans—now have no differences large enough to merit any thought of conflict. As for rabid nationalism, it has not recovered from the bad name Germany and Japan gave it, nor where it delivered them. The 20th century history of these particular countries shows that the pursuit of power can lead to national failure, while the disregard of power can contribute to national success.

In the absence of a unifying external threat, the economic integration of the United States, Japan, and Western Europe increasingly accounts for their collaborative approach to the international problems they face. Integration makes the security of each a vital interest to the others. (In contrast, pre-WWI Germany and England hardly saw each other's security as a vital interest.) This above all explains why NATO and the U.S.-Japan alliance are essentially as cohesive now as they were when threatened by the Soviet Union and dominated by the United States. Increasingly, the great democracies are motivated by a shared interest in the economic health, security, and enlargement of their loose commonwealth.

More concretely, the United States, Western Europe, and Japan share interests in, inter alia: the stable growth of the core economy; the unimpeded flow of goods, services, resources, money, data, and know-how throughout the core; the integration of emerging states; the success of new democracies; the security of world energy supplies, which lie mainly beyond the core; the stability of the dangerous regions where most of those energy supplies lie, the Middle East and the former Soviet Union; denial of weapons of mass destruction to hostile states; and, the capacity to relieve human crises in failed states. Though each power in the core also has particular interests, these do not contradict the more basic common interests. As other countries become more open, robust, and integrated, they too should come to identify with these same core interests, provided outdated industrial-age notions of hegemonic competition do not interfere.

Is hegemony obsolete? The current situation might provide a clue, since one of the powerful democracies in the G-7 is clearly more powerful than the others. The United States has military and technological superiority; it has the fittest economy (though the EU's is larger); and it is the most adaptable. Despite this, the United States does not seek to dominate others; nor did it try to do so when they depended on it for their safety during the Cold War. America's triumphalism and its unilateralist lapses are criticized by its closest friends.[2] But there is a huge difference between insensitivity—not an unfair complaint—and an attempt, exploiting superior strength, to exert hegemonic control or to trample the interests of others in pursuit of one's own.

While this is a subjective matter—just ask a Gaullist!—part of the explanation for U.S. unilateralism and clumsiness is its heavy burden of international responsibilities, rather than any propensity to amass and employ power for exclusive gain. When a prescription for a velvet American hegemony was floated by conservative Republicans, it drew hoots of disapproval, even ridicule, from across the U.S. political spectrum.[3]

So the United States seeks no hegemony, even though it is not infeasible. And the other democratic powers accord it none. Simply put, they do not fear the United States. If the EU and Japan are disinclined to challenge U.S. leadership, it is because they are content to let the United States bear greater global burdens and have no worry that the United States would use such responsibilities to dominate them. Moreover, while they may agree with the United States on many matters, they are hardly deferential. Thus, the great democratic powers, with common interests, are functioning as an effective community of trustful partners, despite an imbalance of power and responsibility among them.

Existing power or powers need not dread and resist rising powers. This change in the "laws" of power politics is a consequence of the information revolution and the democratic revolution and globalization it is causing.

There is no balance of power among them—nor is one needed.

In sum, the most powerful state cannot easily gain by exploiting its position at the expense of others. Less powerful states need not distrust and oppose if for fear that it will. And the existing power or powers need not dread and resist rising powers. This change in the "laws" of power politics is a consequence of the information revolution and the democratic revolution and globalization it is causing.

Integrating Rising Powers

This essay has argued that, because of the new link between knowledge and power, no country (whatever its size by traditional measures) will be able to develop modern power without being competitive in the creation and use of information technology. Only by allowing economic and political freedom and participating in the core economy will a state be able to acquire the investment, know-how, and market access needed to take full advantage of what information technology has to offer. A rising power that offers such economic and political freedom will find the governments and firms of the core prepared not only to accept but also to facilitate its integration and success. Thus, in the information age, being a great power—in the league of Japan and the EU, if not quite that of the United States—means joining the core. How will that integration affect the new power's international outlook and conduct?

There are several ways a rising power like China might be induced by the United States and its partners to act in ways that are consistent with their interests and norms. They could try to constrain or coerce it by military power—as well they should if China is belligerent. But that will become a costlier, riskier strategy as China gains strength and confidence. Moreover, as China integrates and enacts reforms, the threat of using force against it, for any reason, will lose its appeal and credibility. Indeed, the use of force against China's increasingly vibrant and open cities and citizens will soon seem unthinkable. Finally, even if the United States is prepared to police Chinese behavior, Japan and Europe are not.

Alternatively, the democratic powers could pressure China to respect their interests and norms by linking further integration—trade, investment, access to technology—to Chinese behavior. Such

contingent integration is appealingly simple in theory but hard in practice. The lever can work both ways, as we have seen, because every economic interest and transaction between China and the core is valued roughly the same by each party. Moreover, short of sanctions or across-the-board restrictive policies on trade and investment—neither of which could be justified—it is exceedingly difficult for governments, including Washington, to manage an integration process that is determined mainly by private interests.

The surest, most feasible, and most durable way to get China to accept core interests is not through coercion or linkage but through the effects of integration. But wait. Where have we heard that before? Why believe this will work now with China when its antecedent, détente, failed with the Soviet Union?

The Soviet Union was, as we know now, not a rising power at all, but one whose economic system was starting to fail well before the collapse. It had no real hope of integrating into the world economy and was not really trying to do so. It made little that anyone—including most Soviet citizens—wanted to purchase. And of course, in the last of the great industrial-age hegemonic rivalries, détente could not be reconciled with the strong view in the United States that helping the Soviet Union meant imperiling the American way of life or at least vital U.S. interests.

China harbors no interest in transforming the world—rather its main interest is in transforming itself. It is eager to integrate and can realistically aspire to a major role in the world economy. Another important difference between it and the Soviet Union lies in the effects of information technology. Integration should soften Chinese internal politics and international behavior in ways détente never could have affected the Soviet system prior to the information revolution.

In order to achieve its goals, China must be able to acquire, create, and use information technology. Therefore, China must continue to reform and integrate. As it does, it will come to share the economic and security interests that motivate cooperation among the United States, Japan, and Europe.

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Like the current democratic powers, China will identify with the need for technology, products, money, energy, and information to flow freely throughout the world economy. It should also begin to sympathize with and eventually subscribe to the security concerns of the core democracies, particularly access to world petroleum reserves, for which China's future needs are great. Threats posed by the spread of weapons of mass destruction have already begun to outweigh whatever economic and political benefits the Chinese might see in trafficking with the likes of Iran, as evidenced by Beijing's recent decision to curtail such activity. With global trade increasingly vital to China, it will value the security of trade routes and thus the need to resolve peacefully territorial disputes, such as those in the South China Sea.

At the same time, despite its integration thus far, China's assertive behavior and growing power are being met with suspicion and concern by the democratic powers. Moreover, from the Chinese vantage point, exposure to the world in most of the 19th and 20th centuries has been a decidedly negative experience, what with European exploitation, Japanese atrocities, Soviet bullying, and American antipathy. It is therefore not hard to understand why Chinese nationalism is currently strong, not to mention the fact that the "Middle Kingdom" attitude survives and may even have been reawakened by Chinese success of late. The intensification of this nationalism is not incompatible with domestic reform and economic integration; and it is a concomitant of the growth of Chinese power. Although the ideal of self-sufficiency is being discarded, nationalist sentiment could make even a more democratic China suspicious of the existing powers, especially the superpower.

In this light, could a more open, economically integrated, technologically and militarily strong China be hostile to U.S. and core interests, in its region and the world? Perhaps; but probably not. Even if they seem justified by past exploitation and indignities, nationalism

and belligerence will not help China achieve its goals for the future—prosperity, stability, and greatness. Those goals are furthered by modernization, reform, and integration, as already argued, but also by supporting the same global interests that guide the current democratic powers: the economic health of the core, the free flow of economic values, energy security, and countering the spread of weapons of mass destruction.

Thus, while one does not dare to predict that China will become a democracy in a few years, Chinese self-interest will merge with core interests. If the Chinese understand that joining a community of powers in which the United States is strongest does not mean subjecting China to American hegemony, they need not hesitate to do so. Just as the United States is anxious to know that China will be a responsible power, so too is China watching whether the United States handles its superior power responsibly.

This all presupposes that China will complete its economic reform, proceed with political reform, and become an open society in every respect. If the leadership wants to acquire, create, and use information technology successfully, it has no choice. If it wants China to be an information-age power, it has no choice. And as China masters the technology and becomes more open, it will enhance the contributions, living standards, and hopes of the Chinese people—its greatest asset by far.

The alternative for China—slowing reform, suppressing dissent, resisting openness and democracy, challenging the interests of the democratic powers, cozying up to rogue states, refusing to play by the rules of the global economy—seems unlikely because it would damage China's rise, prosperity and, in the end, stability. If the older generation of Chinese leaders does not fully grasp this, the younger one must. If traditional centers of state power do not, new centers of economic and technological power will.

There will likely be continued friction between China and the United States and its partners over human rights, trade policy, and regional questions. Indeed, one dispute, Taiwan, could produce a nasty head-on collision. But the safety net beneath such difficulties, even if Chinese nationalism persists, will be the convergence of China's fundamental economic and strategic interests with those of the United States, Japan, and Europe. Even the Taiwan problem should

become more soluble, despite China's growing military power, as China itself becomes open and as the idea of war between China and the United States begins to look unacceptable to both.

The decoupling of relative power and national success, as the industrial age gives way to the information age, makes confrontation between leading power and the rising power unnecessary and reckless. The leading power need not be committed to the status quo, because progress, not power, produces success. So the rising power has nothing to assault. The world's great powers can function in lasting concert rather than in precarious balance, even if their relative power is somewhat out of balance.

If, ignoring this possibility, China chooses to regard the United States as a hegemonic power that it must challenge, or the United States chooses to regard China as a usurper that it must block or defeat, both will be the worse, and the promise of globalization will go unfulfilled.

The Future of the Core

Barring such strategic folly, globalization can thus come to extend the circle of great and cooperative powers from three to at least four. India, too, can modernize and integrate, especially since it is already democratic, has a potentially important role in the world economy, and is discovering how to capitalize on its enormous human talent. Like China, India most likely will increase its power while also opening its economy and beginning to identify with the interests that motivate the world's present democratic powers. If, however, India gets detoured by ambitions to dominate South Asia, by fear of China, or by aversion to perceived U.S. hegemony, its prospects will fade.

The new multipolar world of three, four, or more powers need not, and from this standpoint will not, resemble the old variety: ever maneuvering to rebalance power; ultimately distrustful of each other because of the maneuvering; preoccupied with stability yet dangerously precarious. Globalization and its prime mover, information technology, are producing a growing commonwealth of great powers—compatible in outlook and ideals, unafraid of one another, eager for all to succeed, and confident enough to welcome change and other powers.

The last two decades have been encouraging: and relations among the United States, Japan, and Europe are reassuring. The prospect of China and India joining this stream of progress is good. So the question naturally arises: Does the information revolution have the strength to convert the entire planet (but for the odd rogue) to openness, responsibility, cooperation, and peace?

Globalization and its prime mover, information technology, are producing a growing commonwealth of great powers—compatible in outlook and ideals, unafraid of one another, eager for all to succeed, and confident enough to welcome change and other powers.

Since the end of World War II, the expansion of the core from North America outward has had a pacifying effect: Western Europe and Northeast Asia, two of the world's most dangerous regions in the first half of the 20th century, are now at peace. More recently, Eastern Europe and Southeast Asia, also notorious for violence, have begun to enjoy security as a consequence of their transformation and integration. The locations of conflict since the end of the Cold War have been beyond the democratic pale: Somalia, Haiti, Bosnia, Kurdistan, Afghanistan, and Central Africa. It is reasonable to believe that the wider the democratic core the greater the expanse of security.

But globalization might be in for a slow-down. Beyond East and South Asia (i.e., China and India), other regions—the greater Middle East, the former Soviet Union, and Africa—are showing less promising signs. Ancient feuds persist among states and tribes. Reform is at best uneven. Most governments lack legitimacy. Cynicism and corruption among elites are unabated if not rising. Human capital is not being developed and used to the fullest; education and science are weak. With all the options available to core firms in search of new locations in which to produce for global markets, now including vast pools of Chinese and Indian talent, they are not likely to choose these three regions. For all these reasons, investors are wary, except when it comes to extracting raw materials. The bountiful energy deposits of the greater Middle East and the former Soviet Union, instead of a blessing that will facilitate progress, could make these regions of

interest to the world economy primarily for their fossils—hardly a way to elevate human potential.

The fundamental problem for these regions is that they are on the outskirts of the information revolution and, generally speaking, might not be willing or able to do what it takes to move toward the center of it. True, Internet terminals, satellite dishes, and cell phones are proliferating in the Middle East and the former Soviet Union. But such participation is superficial. The deeper problem is that the human capital of these regions is not engaged in the creative enterprises of the information revolution. Their knowledge is not being utilized or enhanced in the same way, or to the same degree, as in America, Europe, and Asia.

Notes

1. Raymond Vernon and Ethan B. Kapstein, "National Needs, Global Resources," *Daedalus—Searching for Security in a Global Economy* 120, no. 4 (Fall 1991): 1-22.

2. William Drozdiak, "Even Allies Resent U.S. Dominance: America Accused of Bullying World," *The Washington Post,* November 4, 1997, A1.

3. William Kristol and Robert Kagan, "Toward a Neo-Reaganite Foreign Policy," *Foreign Affairs* 75, no. 4 (July/August 1996): 18-32.

5.
Coda on U.S. Policy

The United States need not fear a cold war with China. China's own priorities—economic growth and stability—propel it toward the core, toward legitimacy that can only come through reform, and toward the dominant technology. The Chinese know that their greatest asset is their human capital and that this potential cannot be tapped without information technology, openness, and integration. China's continued ascent should be accompanied by a growing commitment to economic and political freedom, which is needed to sustain success in the new era. China should be sought as a powerful partner-to-be. As an adversary, China will not be powerful enough to challenge the United States strategically. As a great power, it will have no reason to do so.

The policy of "constructive engagement" of China should not—and currently does not—feature coercion or linkage. At the same time, there is no reason to compromise American principles or interests in the face of Chinese misconduct—no reason to contemplate appeasing China. As its power grows, so too will its acceptance of the principles and interests of the United States and its current partners. Besides, China's options are severely constrained by China's goals.

As for Japan and the European Union, it is important for the United States to share with them the responsibilities of leadership—the prerogatives as well as the burdens. Clinging to the belief that only the United States can meet every international challenge overlooks the fact that it has neither the resources nor the popular support to do so. Moreover, as economic success and power spread, thanks to the information revolution, the United States should expect others of means, starting with the Europeans and Japanese, then China, to pull their weight. U.S. power, which will in any case remain unmatched

in most respects, will not be diminished if the United States shifts more of its burden to European and Japanese shoulders.

Finally, the American policy elite should jettison its attachment to unipolarity; not because it is infeasible but because it is unnecessary and counterproductive to seek. Simply put, other powers will most likely be friends, and adversaries will most likely not be powerful. No hostile peer will emerge. So when Washington asserts how indispensable its superiority and leadership are, it is in relation to its current and future friends that this message really applies, and it is not being well received.

American power is intrinsic and safe, more so in the information age than ever. The success, liberty, and happiness of Americans are not assured by American supremacy but by the creation of a peaceful, and powerful, community of democracies.

> *It has been of the world's history hitherto that might makes right. It is for us and for our time to reverse the maxim.*
>
> —Abraham Lincoln

About the Author

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From 1990 to 1993, Mr. Gompert served on the National Security Council staff as Special Assistant to the President and Senior Director for European and Eurasian Affairs. He has held a number of positions within the Department of State, including Deputy Under Secretary for Political Affairs (1982-83), Deputy Assistant Secretary for European Affairs (1981-82), Deputy Assistant Secretary for Politico-Military Affairs (1977-81), and Special Assistant to the Secretary (1973-75).

Mr. Gompert worked in the private sector from 1983 to 1990. At UNISYS (1989-90), he was President of the Systems Management Group and Vice President, Corporate Development. At AT&T (1983-88), he was Vice President, Civil Agency Sales and Programs, and Director, International Market Planning.

Mr. Gompert holds a baccalaureate degree in engineering from the U.S. Naval Academy and a master of public affairs degree from the Woodrow Wilson School at Princeton University.

The McNair Papers are published at Fort Lesley J. McNair, home of National Defense University. An Army installation since 1794, the post was named in honor of Lieutenant General Lesley James McNair in 1948. McNair, known as "Educator of the Army" and trainer of some three million troops, was about to take command of Allied Ground Forces in Europe under General Eisenhower, when he was killed in combat in Normandy on July 25, 1944.

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