

## THE TWILIGHT OF SOVEREIGNTY

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It has been said that when Adam and Eve were expelled from the Garden of Eden, Adam took Eve's hand and said, "Eve, my dear, we live in an age of transition." This is a common perception by people in any age who are upset by change. The great historian Paul Johnson identified the birth of the modern world society as having taken place in the period from 1815 to 1830, even though the effects of all that happened during that period were delayed by the long disruptive period which was the result of the Napoleonic Wars. As he wrote: "The age abounded in great personalities; warriors, statesmen and tyrants; outstanding inventors and technologists; and writers and musicians of the highest genius ..."<sup>1</sup> It was during this time period that the railway, the Erie Canal, and the steam packet began to change the way people thought about distance. Whatever the merits of Johnson's arguments as to time frames, there is no doubt that the world order was changed immensely in the 19th century. I would argue that we are once again at a watershed in the history of nations. Information technology has demolished time and distance. Yet, instead of validating Orwell's vision of Big Brother watching the citizen, just the reverse has happened: the citizen is watching Big Brother and so the virus of freedom, for which there is no antidote, is spread by myriad electronic networks to the four corners of the world. This information technology is changing the way we think about sovereignty, the way we work, and indeed the nature of the work we do.

While historians rarely identify these sea changes when they are living through them, I would argue that there are clear signs that we are now in the midst of a new revolution at least as dramatic as that described by Paul Johnson. The evidence of change is all around us. Different people see different talismans, and each constructs his or her own scenario as we are all the product of the velocity of our own experience. Social analysts observe political and social change, while scientists recite advances in their own specialties. Peter Drucker

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1. Paul Johnson, *The Birth of the Modern World Society 1815—1830* (New York: Harper Collins, 1991): xviii.

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summed up his perception of this sea change now engulfing us as follows: "We passed out," he wrote "of creeds, commitment, and alignments that had shaped politics for a century or two. We are in political *terra incognita* with few familiar landmarks to guide us. No one except a mere handful of Stalinists believes any more in salvation by society — the faith which since the eighteenth century's Enlightenment had been the dominant force and the main engine of politics ..." and "after three hundred or more years in which armaments were 'productive' and worked as instruments of policy, they have become 'counterproductive': an economic drain if not economically crippling; treacherous as a tool of politics ..."<sup>2</sup>

Other perceptive observers of our time concentrated on what they considered to be changes in technology which are driving political change throughout the world. George Gilder has written that: "The central event of the twentieth century is the overthrow of matter. In technology, economics, and the politics of nations, wealth in the form of physical resources is steadily declining in value and significance. The powers of mind are everywhere ascendant over the brute force of things."<sup>3</sup>

All of these forces, each interacting with the other, is arguably changing how individuals and nation states live, work, and interact with their peers.

Conventional wisdom has held that the Western States System rested on three pillars: the concept of state sovereignty, the privileges of international law and the politics of the balance of power. These cornerstones of the way we think about the world have become the unseen framework of political discussion and most commentators' frame of reference. The concept of sovereignty means different things to different people, ranging from the relation of the state to individual citizens to the relations of one nation state to another. Whatever facet of sovereignty people discuss, in the end the central concept is that the actions of the sovereign are not subject to contradiction by any other power. Indeed, the *Dictionary of International Law* defines sovereignty as: "The supreme individual authority possessed by a state to enact and enforce its law with respect to all persons, property, and events within its borders."

The development of sovereignty as a political theory has a long history dating back at least to Roman Law which spoke of supreme power in the hands of one, or a few, or the many. Slowly the idea developed that sovereignty rested in the hands of the people who delegated their power to the king or emperor. The conflict between church and state, the dominance of divine law over secular, and the existence of feudalism within the state itself prevented the development of the theory for years until the French scholar, Jean Bodin, furnished the intellectual underpinnings for the absolutism of the 17th and 18th centuries. Bodin saw the power of the sovereign as unlimited in time and asserted that the people can "surrender their supreme power without any conditions whatsoever, so that it passes completely out of their control."<sup>4</sup>

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2. Peter F. Drucker, *The New Realities*, (New York : Harper and Row, 1989): 4.

3. George Gilder, *Microcosm*, (New York: Simon and Schuster, 1989): 17.

4. See Charles E. Merriam, *History of the Theory of Sovereignty since Rousseau*, (New York: The

It remained for Johannes Althusius in 1609 to assert that the supreme power remains permanently with the people, despite a temporary delegation to a ruler. Other powerful thinkers including Thomas Hobbes went so far as to state in *Leviathan* that sovereignty had no limitation imposed on it by God or nature; the ecclesiastical was subordinated to political authority. Then came the German, Samuel Pufendorf, followed by the champion of the English Revolution of 1688 John Locke who argued sovereignty resided in the legislature as long as the government lasts, but on dissolution of that body returns to the people. Indeed, Locke's concept of the social contract and the theory of checks and balances on the power of the sovereign greatly influenced the men who drafted the Constitution of the United States. Jean Jacques Rousseau postulated that the sovereignty of the people was "absolute, infallible, indivisible, inalienable." In the words of Charles Merriam, Rousseau "accomplished for the people what Hobbes had done for the ruler."<sup>5</sup> Some modern scholars such as C. W. Jenks have argued that: "The world has outgrown sovereignty."<sup>6</sup>

The paradox is that as more and more nations are formed, and as assertions of what Jenks called "red-blooded sovereignty ... impatient of restraint" appear, that type of sovereignty is fading away. While the ruler, in whatever era, could always find a political philosopher to validate his assertion of power, all of these iterations had a common theme in that sovereignty, however defined, has always been based in part on the idea of territoriality. The extent of the sovereign's reach has usually been defined by geographical borders. Even the immunities enjoyed by a foreign embassy are expressed in part geographically, by defining an area into which the host country cannot intrude.

The control of territory remains one of the most important elements of sovereignty. But the information revolution makes the assertion of territorial control more difficult in certain ways and less relevant in others. Not long ago, armies fought and men died for control of the iron and steel in the Ruhr basin because ownership of those assets conferred real economic and political power. Today these once fought over assets may be a liability. To the extent that new technology replaces once essential commodities with plastics or other synthetic materials, the relative importance of these areas to the vital interest of nations is bound to change.

A few years ago conventional wisdom told us that the lights would go out all over the world if the Suez Canal were ever closed. The power of a sovereign state, Egypt, to block the flow of oil to Europe was believed to be absolute. The conventional wisdom did not take into account the technology that would allow the building of supertankers that could economically carry oil around the Cape of Good Hope. This feat was achieved by relatively simple technology, but it decisively altered the geopolitics of the Middle East. Similarly, advances in military technology are making once vital strategic "choke points" steadily less

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Columbia University Press, 1900): 15.

5. *Ibid.*, 5.

6. C.W. Jenks, *Law in the World Community*, (1967): 32.

relevant. The velocity of change in economics, technology, science, and military capabilities is shifting the tectonic plates of national sovereignty and power.

While today's events are fresh in our mind, the interaction of technology and power is actually an old story. More often than not, technology has played an important role in the power shifts that occur throughout history, but this factor tends to be slighted because many historians display little interest in or appreciation of the cause and effect of the advent of new technology on the way nations behave. In ancient Greece, Plato tells us, the leading men of the city did not hold engineers in high regard: "You despise him and his art," he wrote, "and sneeringly call him an engine-maker, and you will not allow your daughter to marry his son or marry your son to his daughter."

Some prefer to explain history through the great person theory, men and women whose skill and dominant personality shape events, while others speak of vast historical tides that periodically wash over the world carrying all before them. These and many other theories of history have their champions, but since most of the scholars who study the past are trained in history and social sciences, they often have little interest in science and technology. Despite this, a case can be made that technology has had and will continue to have a profound impact on the course of events.

In thinking about the impact of technology on sovereign power, it is well to remember that although we are often fascinated by high-tech inventions, more mundane advances have often had profound effects on the power of governments. The ability of the sovereign to keep information he or she possessed from being disseminated to the population at large formed the basis for much political power. Indeed good intelligence is still a key element in warfare. This monopoly of information was the foundation of many power bases. For example, once information about rudimentary medical information became generally known, the once formidable power of the witch doctor declined, and eventually disappeared.

Lack of the means to transmit information once helped protect the sovereign. For centuries news of any kind could travel only as fast as a horse could run. Roads were poor and usually in bad repair. Paul Valery has pointed out that Napoleon could move his troops no faster than could Julius Caesar. And yet it was a road system that helped tie together what came to be thought of as a nation and permit the military power of the sovereign to be brought to bear in areas of trouble. The building of roads did not involve technology of a high order, but nevertheless had a profound impact on society. A man by the name of John Loudon McAdams got the full attention of a Parliamentary Select Committee in 1811 when he proposed a simple solution to improve the road system, prevent the constant breakdown of coaches and speed up overland travel. Having walked behind coaches and wagons for miles he observed "That the point of contact between the wheel and the road was no more than an inch longitudinally."<sup>7</sup> By building roads with small stones or gravel instead of larger rocks and

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7. Paul Johnson, 178.

dirt, the speed and comfort of travel was greatly increased. In some areas of the world, commerce moved by sea and inland waterways. The Chinese were especially adept at the use of rivers and waterways in the 18th century. News and gossip, fact and legend moved slowly by land and sea but usually was communicated by one person speaking to another. Richard Brown has observed: "When the diffusion of public information moved from face-to-face networks to the newspaper page, public life and the society in which politics operated shifted from a communal discipline to a market-oriented competitive regimen in which the foundations of influence changed.... By the middle decades of the 19th century so much of public affairs were being conducted through the press that where extra-local public information was concerned, word-of-mouth networks had been largely delegated to a subordinate role."<sup>8</sup>

One clear example — and one of the first — of the use of information not only to attenuate the power of a sovereign, but to overthrow him, occurred in the political mobilization of the thirteen British colonies on the American continent. The establishment of Committees of Correspondence, Patriot Alarms networks, and loose associations of lawyers and preachers spread the news of the Revolution. Messengers carrying news of battles from one place to another told their story at every stop where they changed horses, and it was picked up and printed by local newspapers. The tendency of Americans to be joiners and indeed to have a volunteer society hastened the proliferation of information. Preachers, lawyers, camp meetings and town meetings all served as conveyor belts of information about the conduct of the war.

The rudimentary technology of the paved road, the optical telegraph, the science of navigation and the printing press all contributed to the spread of information. As the news spread about the way others lived, gradually there was slippage of sovereign authority. The old power structure which was based on birth was questioned more and more as other power centers appeared. Kings and monarchs gradually succumbed to the popular pressure created by the spread of information and granted constitutions which attenuated their powers. Often they put what we now call "a spin" on the story by saying that the grant of these powers to others was in and of itself the act of an absolute ruler. Barbara Tuchman has observed that since most serfs and peasants were illiterate, we usually can only read the sovereign's side of the story. The growth of government gave rise to the concept of bureaucrats to handle all the administrative problems created by the new governments. As every ruler learned to his or her sorrow, bureaucrats grew strong and flourished and created a further dilution of the power of the throne.

Barbara Ward has written that revolutions do not occur until people learn that there is an alternative to their way of life. In the middle of the 19th century this learning process started with improvements in the technology of transferring news and people from one place to another. News of events in other countries was beginning to be carried in Europe by railroads, canals, steam-

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8. Richard D. Brown, *Knowledge is Power* (Oxford: Oxford University Press, 1989): 279.

ships, the electrical telegraph, and the organization of postal services for the common man.

Sovereigns were aware even then of the danger posed by improved communications and tried to stay the march of progress lest their own power be attenuated. In 1835 Emperor Francis I of Austria turned down a request for permission to build a steam railroad lest it carry revolution to his throne. He was more right than he knew. Meanwhile scientists of many nations weighed in to explain not the political effects of the railroads, but the practical problems of their construction. The railroads, we were told, would not much improve communication, because as Dr. Lardner of University College, London explained, "Rail travel at high speed is not possible because passengers, unable to breathe, would die of asphyxia."<sup>9</sup> Despite opposition from many sources, the tracks were laid and the trains were built which gave the common man mobility — he or she could move away from repressive local regimes, a feat heretofore much more difficult.

Even more important, the railroads threw together people of all classes who up until then had no chance or occasion to be in the same place at the same time. The introduction of reduced fare excursions permitted working people to travel for the first time and showed them how others lived. Years later, with the advent of the telephone another sovereign saw the danger. "Leon Trotsky reportedly proposed to Stalin that a modern telephone system be built in the new Soviet State. Stalin brushed off the idea, saying I can imagine no greater instrument of counter-revolution in our time."<sup>10</sup>

Still, the means of communication by mail tended to be reserved for the well-to-do and governments as they were the only ones able to pay the costs which varied with the distance and size of the letter or package being sent. Generally, the recipient paid the postage on a letter rather than charging the sender, which created a nightmarish bookkeeping system. As usual, the politicians took care of themselves, their letters being "franked" if addressed in their own handwriting. The cost was not inconsiderable. It is said that Sir Walter Scott complained that his fan mail cost him 150 pounds a year. It was left to Rowland Hill, an Englishman, to come up with the idea of the penny-post, the system whereby postage would be prepaid by pre-stamped envelopes or adhesive stamps. The government headed by Lord Melbourne was dead set against Hill's scheme — perhaps fearing this new power in the hands of the people. Popular pressure forced the bill through Parliament, and Queen Victoria gave her approval in 1840. This simple low-tech idea of uniform rates and adhesive stamps spread quickly through the world, and loosened the sovereign's control over the spread of information one more notch.

Today national borders have ceased to be boundaries. Data of all kinds move over and through them as if they did not exist. Arthur C. Clarke who first postulated the viability of a geosynchronous satellite put it this way: "Radio

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9. Cerf and Navasky, *The Experts Speak*, (New York: Pantheon Books, 1984): 232.

10. Wilson P. Dizard and S. Blake Svensrud, *Gorbachev's Information Revolution*, (Boulder, CO: Westview Press, 1987).

waves have never respected frontiers, and from an altitude of 36,000 kilometers, national boundaries are singularly inconspicuous." Satellites peer down into every corner of a nation state, data and news are received by people within national borders on every device ranging from a hand-held transistor radio to personal computers at home and at work tied in to huge data networks. The sovereign has totally lost control of what people can see and hear. The first protesters in Prague in 1988 knew what they were about when they chanted at the riot police: "The world sees you." And indeed it did. It is an anomaly of history that the people of Eastern Europe watched the revolution on CNN relayed to them by a Russian satellite and took courage to make their own rebellion against the sovereign.

Another traditional aspect of sovereignty has been the power to issue currency, and to control its value. From the earliest times governments have wished to monopolize this powerful medium, and control its value in the markets in which it is traded. Of course, the claims kings made for the worth of their currency did not always square with the facts. In the 17th century the Amsterdam bankers made themselves unpopular in the royal chambers by weighing coins and announcing their true metallic value. But those bankers spoke to a small audience and their voices were not heard very far beyond the city limits. Until very recently, governments retained substantial power to manipulate the value of their currencies. But as the information revolution has rendered borders porous to huge volumes of high-speed information, the task becomes difficult if not impossible. The control of currency has always given a government great leverage over the most crucial material endeavors of its citizens. The regulation of money markets is the regulation of a society's resources in their most convenient and fungible form. In ancient Sparta the government forbade citizens any medium of exchange other than heavy bars of iron of relatively little worth. The sons of Lycurgus correctly surmised that with such an inconvenient currency complex commerce would be nearly impossible. The citizenry, free from the temptations of commerce, would stick to the manly art of war.

The more usual temptation, however, has been for governments to make the currency lighter not heavier. Clipping coin so as to make them worth less than face value is an ancient tradition. And when governments learned the wonders that could be worked by printing money a whole new era opened up. Since paper money has no intrinsic value, only scarcity value, it was both easier (or so it seemed) and more imperative for governments to control its value.

China was the first nation to issue paper currency, having done so in the eleventh century, but soon had to abandon the practice as its currency was nowhere acceptable. Since that time almost every sovereign in the world has experimented with fiat money, often with disastrous effects. Despite a record of continually eroding value of all the world's currency, the right to issue and control the value of money is one of the most cherished of sovereign rights and onerous political duties.

The Nobel laureate, F. A. Hayek, has pointed out that "... government's exclusive right to issue and regulate money has certainly not helped to give us a better money than we would otherwise have had, and probably a very much

worse one, it has of course become a chief instrument for prevailing governmental policies and profoundly assisted the general growth of governmental power. Much of contemporary politics is based on the assumption that government has the power to create and make people accept any amount of additional money it wishes. Governments will for this reason strongly defend their traditional rights."<sup>11</sup>

Until recently what we call money, be it a piece of paper, a bookkeeping entry, or a physical object, had been linked to a commodity which put some limit on the sovereign's ability to inflate the currency. The nature of that commodity has varied with the interests of the people using it. The early American colonists used tobacco money, the American Indians favored the cowrie shells or wampum, and of course people everywhere have used the more familiar copper, silver, and gold in the form of coins circulated throughout the world. The link between commodities and money became slowly attenuated over a long period of time. On March 6, 1933 a decisive event occurred which put the world on the road to fiat money. President Franklin D. Roosevelt issued a proclamation prohibiting American citizens from holding gold. The link was further severed on June 5, 1933 when, by a Joint Resolution of the United States Congress, the gold clause was repudiated in all private and government contracts. While various other acts were taken to weaken the tie to gold, the final blow was administered on August 15, 1971 when President Richard Nixon terminated the convertability of the dollar into gold and the era of floating exchange rates began. Two years later, the International Monetary Fund recognized reality and endorsed floating exchange rates.

In today's world, the value of any currency is determined by the price that the market will pay for it in exchange for some other currency. Whatever the price, it is almost constantly being condemned by someone somewhere as too high and by someone somewhere else as too low. Few governments are entirely satisfied with the value the market places on their currency. Someone is always demanding that government do something to push the value of its currency up or down, depending on how one's interests are affected.

The power to control the price others will pay in their currency to obtain yours is now severely limited. Sovereign control over the value and trade of money has been irrevocably compromised and continues gradually to erode. The market is a harsh disciplinarian. When Francois Mitterrand became President of France in 1981, he was elected as a committed Socialist, and almost immediately money began to flow out of the country, foreign exchange reserves were rapidly depleted, and within six months Mitterrand had to reverse course and become pro-capitalist. That is not to say that governments can no longer influence, for better or for worse, the value of their currencies. They can and do, but their ability to readily manipulate that value in world markets is declining. Increasingly currency values will be experienced less as a power and privilege

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11. F.A. Hayek, "Denationalisation of Money" (Institute of Economic Affairs): 28.



of sovereignty than as a discipline on the economic policies of imprudent sovereigns.

This new discipline is being administered by a completely new system of international finance. Unlike all prior arrangements, this new system was not built by politicians, economists, central bankers or finance ministers. No high level international conference produced a master plan. The new system was built by technology.

The new world financial system is partly the accidental by-product of communication satellites and engineers learning how to use the electromagnetic spectrum up to 500 gigahertz. Just as Edison failed to foresee that his phonograph would have any commercial value, the men and women who tied the world together with telecommunications did not fully realize they were building the infrastructure of a global marketplace. Yet the money traders of the world understood immediately and drove their trades over the new global infrastructure.

The convergence of computers and telecommunications has created a new international monetary system, and even a new monetary standard by which the value of currencies is determined. The Information Standard has replaced the Gold Standard. We sit at home and watch a live broadcast of riots in a country on the other side of the earth, and a currency falls, in minutes. We hear by satellite that a leadership crisis has been resolved and a currency rises. Ten minutes after the news of the disaster at Chernobyl was received, market data showed that stocks of agricultural companies began to move up in all world markets. For the first time in history, countless investors, merchants and ordinary citizens can know almost instantly of breaking events all over the earth. And depending on how they interpret these events, their desire to hold more or less of a given currency will be inescapably translated into a rise or fall of the exchange value.

The natural first response to this claim is, it has ever been so. The pressure of events has always been a major factor in determining the value of currencies. But the speed and volume of this new global market makes it something different in kind and not just in degree. Cherished political, regulatory, and economic levers routinely used by sovereigns in the past are losing some of their power because, the new Information Standard is not subject to effective political tinkering. It used to be that political and economic follies played to a local audience and their results could be in part contained. A relatively small club of central bankers and politicians representing their sovereign governments believed it could control the value of a given currency. This is no longer true, the global market makes and publishes judgments about each currency in the world every minute and every hour of the day. The forces are so powerful that government intervention can only result in expensive failure over time.

When the volume of trading in anything is small, prices can be influenced dramatically by placing relatively large buy or sell orders. As the size of a market grows, the amount of orders that have to be placed to move the price either up or down becomes correspondingly larger. In the relatively small postwar money markets, central banks had enough resources to place orders large enough to

influence the price of a currency. Today, with almost two trillion dollars changing hands each day in New York alone, there is not enough money in the reserves of the world's central banks to significantly influence exchange rates on more than a momentary basis.

The new world financial market is not a geographical location to be found on a map, but rather more than two hundred thousand electronic monitors in trading rooms all over the world, which are linked together. With the new technology no one is in control. Or rather everyone is in control through collective valuations.

Technology has made us a global community in the literal sense of the word. Capital will go where it is wanted and stay where it is well treated. It will flee from manipulation or onerous regulation of its value or use and no sovereign power can restrain it for long.

The Eurocurrency markets are a perfect example. No one designed them, no one authorized them, and no one controls them. They were fathered by interest rate controls, raised by technology and today they are refugees, if you will, from national attempts to allocate credit and capital for reasons that have little or nothing to do with finance and economics. Though they got their start some years before the global telecom network became the essential medium of a global financial market, their power, size, and independence were greatly augmented by that network. The two in fact matured together, demonstrating along the way that information technology makes money far more difficult to regulate than ever before.

Governments do not welcome this Information Standard any more than absolute monarchs embraced universal suffrage. Politicians who wish to evade responsibility for imprudent fiscal and monetary policies correctly perceive that the Information Standard will punish them. Moreover, in contrast to former international monetary systems, there is no way for a sovereign to resign from the Information Standard. No matter what political leaders do or say the screens will continue to light up, traders will trade, and currency values will continue to be set not by sovereign governments but by global plebiscite.

The new global market is not limited to trade in financial instruments. The world can no longer be understood as a collection of national economies. The electronic infrastructure that now ties the world together, as well as great advances in the efficiency of conventional transportation, are creating a single global economy.

The very phrase "international trade" has begun to sound obsolete. Commerce and production are increasingly transnational. More and more products have value added in several different countries. The dress a customer purchases at a smart store in New York may have originated with cloth woven in Korea, finished in Taiwan, and cut and sewed in India according to an American design. Of course a brief stop in Milan, to pick up a "Made in Italy" label, and leave off a substantial licensing fee, is de rigeur before the final journey to New York. Former Secretary of State George Shultz recently remarked in a speech: "A few months ago I saw a snapshot of a shipping label for some integrated circuits produced by an American firm. It said, 'Made in one or more of the following

countries: Korea, Hong Kong, Malaysia, Singapore, Taiwan, Mauritius, Thailand, Indonesia, Mexico, Philippines. The exact country of origin is unknown.' That label says a lot about where current trends are taking us."

Whatever the correct word for these phenomena, "trade" certainly seems an inadequate description. How does one account in the monthly trade figures for products whose "exact country of origin is unknown?" How are national governments to regulate the complexities of transnational production with anything like the firmness with which they once regulated international trade? How are politicians to whip up nationalist fervor against foreign goods when American car companies build cars in Mexico for export to Africa and pay the profits to pensioners in Chicago, and the Japanese build cars in Tennessee for export to Europe and use the income to refinance real estate in Texas?

The global market has moved from rhetoric to reality almost before we knew it. The old political boundaries of nation states are being made obsolete by an alliance of commerce and technology. Political borders, long the cause of wars, are becoming porous.

Within national borders, sovereignty has traditionally entailed the government's power to regulate the leading enterprises of society, from health care to heavy industry. In an economy dominated by products that consist largely of information this power erodes rapidly. As George Gilder has written, "a steel mill, the exemplary industry of the industrial age" lends itself to control by governments. "Its massive output is easily measured and regulated at every point by government. By contrast, the typical mean of production of the new epoch is a man at a computer work station, designing microchips comparable in complexity to the entire steel facility, to be manufactured from software programs comprising a coded sequence of electronic pulses that can elude every export control and run a production line anywhere on the globe."<sup>12</sup>

In the last few decades the information revolution has changed the very source of wealth, and even more dramatically than did the Industrial Revolution. The new source of wealth is not material, it is information, knowledge applied to work to create value. The pursuit of wealth is now largely the pursuit of information, and the application of information to the means of production. This shift in perception of what constitutes an asset, poses huge problems in expanding or even maintaining the power of government. Information resources are not bound to a particular geography, nor easily taxed and controlled by governments. A person with the skills to write a complex software system which can produce a billion dollars of revenue can walk past any customs officer in the world with nothing of "value" to declare. An information economy diminishes the rewards for control of territory and reduces the value of the resources that can be extracted through such control.

As a source of wealth information comes in various forms, from streams of electronic data briefly valuable, to years of accumulated research embedded in computer memories operating automated factories, to the intellectual capital

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12. George Gilder, "The Emancipation of the CEO," *Chief Executive*, (January/February 1988): 9.

carried in the brain of an engineer, a manager, or an investment banker. The world desperately needs a model of the economics of information that will schematize its forms and functions. But even without such a model one thing will be clear. When the world's most precious resource is immaterial, the economic doctrines, social structures, and political systems that evolved in a world devoted to the service of matter, become rapidly ill-suited to cope with the new situation. The rules and customs, skills and talents necessary to uncover, capture, produce, preserve, and exploit information are now mankind's most important rules, customs, skills, and talents.

The information economy changes the very definition of an asset, transforms the nature of wealth, cuts a new path to prosperity. The information economy changes everything from how we make a living to how and by whom the world is run. The competition for the best information is vastly different from the competition for the best bottom lands or the best coal fields. Companies or nations competing for information will be vastly different from those that once competed primarily for material resources. The nature of information, how it is traded and produced, the scope, shape, and protocols of information markets, and the other institutions of an information economy will impact government policy, set the limits of government power, and redefine sovereignty.

The information revolution not only makes the microeconomy more difficult to regulate, it makes the macroeconomy — the world of GNP, aggregate demand, and seasonally adjusted statistics — harder to measure and therefore harder to control. Many of the terms we use today to describe the economy no longer reflect reality. Everyone knows, for example, that all the lights would go out, all the airplanes would stop flying, and all the financial institutions and many of the factories would shut down if the computer software that runs their systems suddenly disappeared. Yet these crucial intellectual assets do not appear in any substantial way on the balance sheets of the world. Those balance sheets, however, are chock full of what in the industrial age were called tangible assets — buildings and machinery — things that can be seen and touched.

How does a national government measure capital formation, when much new capital is intellectual? How does it measure the productivity of knowledge workers whose product cannot be counted on our fingers? If it cannot do that, how can it track productivity growth? How does it track or control the money supply when the financial markets create new financial instruments faster than the regulators can keep track of them? And if it cannot do any of these things with the relative precision of simpler times what becomes of the great mission of modern governments: controlling and manipulating the national economy? Even if some of these measurement problems are solved, as some surely will be, the phenomena they measure will be far more complete and difficult to manipulate than industrial economies of old.

The marriage of the computer with telecommunications, resulting in movement of information at the speed of light and to enormous audiences, tends to decentralize power as it decentralizes knowledge. When a system of national currencies run by central banks is transformed into a global electronic marketplace driven by private currency traders, power changes hands. When a system

of national economies linked by government regulated trade is replaced — at least in part — by an increasingly integrated global economy beyond the reach of much national regulation, power changes hands. When an international telecommunications system, incorporating technologies from mobile phones to communications satellites, deprives governments of the ability to keep secrets from the world, or from their own people, power changes hands. When a microchip the size of a fingernail can turn a relatively simple and inexpensive weapon into a “Stinger” missile, enabling an illiterate tribesman to destroy a multi-million dollar armored helicopter and its highly trained crew, power changes hands.

The challenge to national sovereignty posed by the information revolution is being replayed in various ways throughout most of the institutions of the modern world. In the business organization the person who truly understands the impact of technology has become a vital part of the whole strategic business process. We see new corporate structures developing to manage new manufacturing methods, products, and delivery systems. Management structures are already changing dramatically. Layers of management that used to do nothing but relay information from one level to another are beginning to disappear. Business is learning that these positions are no longer needed now that information technology allows the rapid transmission of vital information to all levels of management without human intervention. Instead the old military model of hierarchical organization is giving way to flatter structures designed for the faster response times needed to serve dynamic global markets.

This is not to say that sovereign power will disappear — it will not. But what it does mean is that no government, over time, can act alone not subject to contradiction. The protesters in Prague were right — the world is watching, and the power of world opinion is transmitted and focused and reported by the telecommunications network. The world looks and reacts and brings pressure on everything from the destruction of the rain forest, the allegations of global warming, the disposal of toxic waste, to the violation of human rights anywhere on the planet. The transition of economic thinking as to what creates wealth, which has moved from land, to materials, to labor and now to knowledge, make it harder for a sovereign to exercise control since the old Keynesian national markets have given way to truly global markets. Investment no longer follows trade or the flag — it moves to the most hospitable climate. What Keynes called the “symbol economy” of money and credit is now global, not national, and knowledge applied to work to create value is now more important than the traditional factors of production. Indeed, it can be argued that the symbol economy is what drives markets, and money goes where it is wanted and stays where it is well treated. The sovereign can create a hostile or a hospitable economic climate, but can no longer control the flow of capital by fiat.

As the dispersal of information of all kinds moves over and through national borders, we are in need of a new philosophy to redefine the powers of national governments to reflect the reality of the twilight of what C. W. Jenks called “red-blooded sovereignty.”

All of this is good news for freedom. Ronald Reagan’s powerful speech on

May 31, 1988, delivered at Moscow State University, was literally heard around the world. He spoke of the power of freedom in a land that had seen little of it; he spoke of economic freedom to release the innovations of entrepreneurs; he spoke of the information revolution "quietly sweeping the globe, without bloodshed or conflict." Few realized at the time how this message carried on the global electronic network, was working on the hearts and minds of people. "The rush to freedom and competitive economic institutions in Eastern Europe in late 1989," Henry Nau has written, "left the world breathless and caught much of the intellectual community in the United States and the West, which only recently celebrated the decline of American and Western influence, without an adequate explanation for this dramatic turn of events."<sup>13</sup>

The triumph of freedom and the demise of communism is occurring literally before our eyes on the TV screen but freedom is never won easily or smoothly as Tiananmen Square proved. President Kennedy never got to deliver a speech in Dallas the day he was assassinated, but he planned to say the following: "We in this country, in this generation, are — by destiny rather than choice — the watchmen on the walls of world freedom." What the watchmen have witnessed is almost unprecedented in history. In the last few years, the virus of freedom — a virus for which there is no antidote — has been carried over and through the borders which divide us by the global electronic network.

As the news spreads across the electronic network, the relative balance between the sovereign and the citizen, and between an individual sovereign and world opinion is altered. Today, indeed the ability of any sovereign to act without fear of contradiction has been sharply limited, and in some cases destroyed, by the way the world works in this age of information.

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13. Henry R. Nau, *The Myth of America's Decline* (Oxford: Oxford University Press, 1990): 1.

