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IT's Place in U.S. History: Information Technology As a Shaper of Society

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Contents

Chapter One

Introduction

According to the legend, if you were in the Carpathian mountains being stalked by a vampire, in order to kill it you would either have to risk getting close enough to drive a wooden stake through its heart or, more safely, shoot it from afar with a silver bullet. Thus from the occult folklore of middle Europe comes the notion of the silver bullet as a quick and magical solution to a difficult problem.

The silver bullet theme runs through many prophecies about technology. From the Promethean myths of ancient Greece to the visions emanating from Silicon Valley in more recent times, the promises of technology—especially technology that offers more efficient methods of person to person communication - often approach the utopian. But utopia is a paradoxical concept. As an inspiration for improvement it is indispensable, but when it is sought on a grand scale very often its disastrous opposite results. Perhaps that is why the term itself means "no place."[1] A look into the history of technology reveals that in most cases, predictions of the social effects of one technology or the other have been oversimplified, overstated, and usually wrong.

Even the renowned philosopher-scientist Buckminister Fuller was not immune to the lure of technological rhapsody. In a 1971 Life magazine profile, he envisioned that by the year 2000 "Technology would eliminate scarcity, and nations and classes will disappear as the new era of awareness creates a race of world men whose allegiance is universal."[2] Such optimism is evident in other mid-twentieth century predictions for the year 2000 as well, such as the predicted advent of advanced learning techniques using electronic brain control, (*Newsweek*, 1959), flying houses that would facilitate commuting and vacationing (Arthur C. Clarke, *Vogue*, 1966), and common use of domestic robots (M.W. Thring, *Man, Machines, and Tomorrow*, 1973).[3] There is, however, an interesting difference between commercial predictions of the businesses involved in developing the technology and the social commentators who attempt to gauge its meaning. From the advice offered David Sarnoff by his associates about investing in the radio during the 1920's that "The wireless box has no imaginable commercial value. Who would pay for a message sent to nobody in particular?" to the now infamous 1971 comment of Ken Olson, founder of Digital Equipment Corporation that "There is no reason anyone would want a computer in their home," [4], established businesses have more often than not been skeptical of the economic value of

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[1]Margaret Atwood, "God is in the Details," *The New York Times Magazine*, April 18, 1999, page 94.

[2] Laura Lee, *Bad Predictions*, www.elsewherepress.com/2000.

[3] "What the Year 2000 Could Have Been Like…", www.elsewherepress.comm/2000

[4] ibid.

emerging technology. Even the world's richest man does not escape this phenomenon. In 1981 Bill Gates was quoted as follows: "640K (of RAM) ought to be enough for anybody."[5]

Nevertheless, in spite of all the mistaken predictions and letdowns of the past, technological developments continue to inspire grandiose visions of the future. For better or worse, they remain the most popularly used milestones for measuring the course of human progress and there is never a shortage of glowing or terrifying social scenarios—from bringing an end to war to the sort of cataclysms found in the Quatraines of Nostradamus - for the effects of this or that new development. However, often ignored in these scenarios is the gravitational pull of the past, and often simplified are the incredibly complex crosscurrents of history that in blending over the ages have created societal structures that remain fundamentally resistant even to the most ingenious and revolutionary silver bullets of technology. The real social effects of such technologies are usually reduced to a question of subjective judgment.

For example, in the aftermath of the 2001 dot-com bubble burst, Malcolm Gladwell, author of *The Tipping Point: Little Things Can Make a Big Difference*[6], and James Surowiecki, financial columnist for *The New Yorker*, engaged in a friendly e-mail debate entitled "Was It All a Dream." The question at hand was whether there ever really was such a thing as the New Economy, and the debate wound up centering on the difference between the concepts of innovation, or better ways of doing what we already do, and progress, or movement into an entirely new order of activity.[7]

Gladwell's premise in "*The Tipping Point*" is that what appears at first to be a random scattering of ideas can in time, and almost without notice, accumulate into a critical mass of opinion, "tipping" society into a state that is qualitatively different than the one that existed prior to critical mass being achieved. But in spite of his enthusiasm for the transforming power of ideas, when considering the effects of the Internet Gladwell acknowledges the tremendous effects it has had on the efficiency with which activities - especially economic activities - can be carried out, but remains skeptical of the notion implicit in descriptions of the New Economy that these effects have caused a qualitative change in the nature of economic activities themselves. He claims this is especially so when compared to such past technological developments as railroads, electricity, and mass production, and for that reason considers the Internet an innovation but not progress. Surowiecki, on the other hand, believes drawing a distinction between innovation and progress is hairsplitting, giving the example of the telecommunications industry where innovation allowed new market players to overturn established dominant ones and, consequently, create more open, diverse markets which have fostered even more innovation. This, he claims, is what progress is all about, and as for his opinion of the internet he thinks it has indeed created a new

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[5] "Forecasting Technology," www.hwcn.org/ag68/forecast.html

[6] (New York: Little Brown & Co., 2000)

[7] *The New Yorker/On Line Only*, April 23, 2001.

economic order, one that is more global than national, and one that facilitates the ascendant post cold war idea that markets, not central government planning, are the best ways to organize an economy and promote the future well being of millions of oppressed people now mired in abject poverty.

Although the debate concluded without agreement, albeit amiably, it succeeded in raising several contentious issues. For one thing, it calls into question the real value of information technology and the importance of the role it has played and is playing in U.S. society. For another, it provokes thinking about how much of all that has been written and said about the internet launching a revolution and being the way of the future is hype. And most important, it once more demonstrates the futility of trying to predict with much reliability the future effects of information or any other technology.

Every definable historical era has embodied a pattern of conflict between inherited conditions and new ideas. The story of the information age will not be an exception, but most interpretations around today are deceptive in their orderliness: they propose that we are in a new and enduring global economic era, riding a tidal wave of aspiration and technology that will, in mostly beneficial ways, transform world society as we now know it. This is a familiar refrain, heard at the unveiling of just about every new “age.” For example, so was it said about the various technological marvels of the nineteenth century’s industrial age and, in a different vein, about the radical political philosophies of the eighteenth century’s age of enlightenment. Some of the predictions were accurate, of course, but most often the unpredictable churning of history led to entirely new and unexpected conditions rather than to those that were commonly anticipated. This phenomenon is evident as far back as the early seventeenth century, when a combination of new agrarian technologies, economic opportunism and nationalistic zeal led to an unprecedented expansion of northern European trade and colonization that launched the first global economy. The creation of a new diverse and nationless workforce that circulated around the Atlantic world on trade and slave ships served well the economic and social requirements of the ruling classes, but eventually gave rise to unanticipated ideas about freedom and equality that would first challenge and then disrupt the existing order, leading to the American Declaration of Independence and the French Declaration of the Rights of Man.

But it is not so difficult to look into history and, with the advantage of hindsight, discern patterns of cause and effect among the array of social and technological forces that were pitted against each other at different times. However, at ground level in our own time, at the dawning of the twenty first century and the beginnings of the information age, events often take on the appearance of randomness, a scattering of pieces from many different puzzles, myriad stories begun and interrupted without a middle or an ending. An observer can only speculate. What is holding it all together? What are the larger themes? Where is the trajectory leading? Why this

road and not that? How can so many different impulses and pursuits amount to anything as coherent as a national direction? [8]

When considering the possible effects of new information technology on U.S. social structures it is first necessary to acknowledge that, notwithstanding some contemporary observations, the modern American social mosaic is not of recent vintage. Rather, its roots reach deep into the nation's beginnings, and have been woven together by events over the several centuries since to create the society we see today. For example, notions of freedom and opportunity that run strongly among immigrants to America in the 2000's parallel those that took hold among the new mixtures of people who came to North America from the lower rungs of rigidly structured class societies in different parts of the world during the colonization period. Similarly, the humanistic ideals of the Enlightenment as well as the religious fervor of the Great Awakening provided the intellectual and emotional fuel for an independence movement that not only established democracy and new heights of individual freedom in America during the mid-eighteenth century but encouraged those in other nations to seek the same freedoms—a process that has survived wars and depressions, and continues as a basic U.S. policy into modern times. And finally the American political environment and economic class structure that persists into the twenty first century had its origins in the nation's reconfiguration from the largely rural society that prevailed up to the civil war to a heavily urbanized society that began to form during the economic upheavals of the industrial revolution. But what lies ahead? Will newly changed global political conditions and the transforming effects of advanced information technologies scramble established social patterns, creating new sets of factions and provoking new kinds of alliances? Will American society change? Will it become more divided, less divided, or just re-divided in new ways? And, why does it matter?

Irrespective of all the hopes, fears, and predictions the future remains indeterminable and we can only imagine where this most recent explosion of technology will lead us. In the context of that uncertainty, this paper explores a process of accommodation that may evolve between the inherited conditions which have combined to create extant societal structures in the United States and the new ideas associated with the emerging information society. Because they stress a new level of integration among economic, political and social activities long assumed to be largely independent of each other, these ideas may challenge inherited conditions at a fundamental level.

First, so as to provide some critical perspective, it reviews the three historical periods mentioned earlier that together have had seminal influence on the formation of contemporary U.S. society: Colonization, the Age of Enlightenment, and the Industrial Revolution. Acknowledgedly, historians, politicians, and other observers may debate the relative influence that each of these selected historical periods has had on the creation of modern America, and

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[8] A similar observation, but in an expanded and exclusively personal context, is found in George Packer, *Blood of the Liberals*, (New York: Farrar, Straus and Giroux, 2000), Chapter 14.

disagree with the way they are described and evaluated in this paper. However, these descriptions are not presented here as unequivocal determinants of the present, only as critically influential precursors. Regardless of the interpretations one applies to them, the fact of their bearing on the creation of modern American society is irrefutable.

Then, as a method of gaining special insight into the societal effects of information technology specifically, it will explore what is known as the digital divide—the contemporary gap between those who use computers and are connected to the internet, and those who are not. Not surprisingly, this gap falls largely along traditional age, race, and economic class lines, with younger, more affluent white households having substantially higher rates of computer usage and internet connectivity than the others. In discussing the societal effects of information technology from this perspective one can perhaps more clearly see the way the technology may, and may not, alter the shape of U.S. society. The paper has three sections:

- Paths to the Present: Where we are and how we got here.
- Visions of the Future: Varied and often competing scenarios.
- Critical Questions: Issues for consideration.

The purpose of this discussion is to help broaden the scope of consideration for those policy makers and others who must devise strategies and allocate resources to deal with the changes wrought on contemporary society by advances in information technology. By encouraging a deeper appreciation of the historical forces that have created current American social structures, a better understanding might be reached of the influence that information technology might truly have on those structures in the future.

Chapter Two

Paths to the Present

In 1908, during the largest wave of immigration the United States had ever seen, Israel Zangwill, a Jewish immigrant from England, wrote a play whose central theme became deeply rooted in the American imagination. Zangwill's production was called "The Melting Pot."

Around the beginning of the twentieth century, eighteen million or so new citizens, mostly Irish, Germans, Italians, and Eastern Europeans, Catholics, Protestants and Jews, streamed into America and were absorbed into American life. The absorption was not perfect, and was not without resistance and conflict, but the great sustaining promise of the time was that these diverse immigrants would transform America into a new kind of nation, one composed of diverse peoples forged into one nationality in a crucible of freedom, democracy and economic opportunity. For many of these immigrants and their descendents the promise was realized. However, the Melting Pot of Israel Zangwill's play did not materialize for everyone. A century later, America is a nation that pays devout homage to its immigrant roots, but one that nevertheless maintains a complex and deeply rooted pattern of ethnic and racial division within its society.

Today, as the twenty first century begins, the United States is in the midst of yet another great wave of immigration, this time mostly from the underdeveloped worlds of Asia, Latin America, and Africa. Like the earlier one, this wave is driving a demographic shift in American society that will have profound long term social, political and economic effects. But unlike its earlier counterpart, which basically added more Europeans to the already Euro-based American culture, today's shift involves a potential reconfiguration of the racial, religious and ethnic mosaic of a society that has been dominated by white Europeans from its inception. Moreover, the shift is occurring so rapidly that within the lifetimes of today's teenagers, no single ethnic group—white Americans of European descent included—is likely to comprise a majority of the nation's population.[1] This development is likely to complicate even further the idea that people of every color and background can be transformed into one America, an idea that has been at the same time so central to our articulated national tradition but also so contentious in its execution that even into the twenty first century it provokes sometimes brutal political struggles.

Will the United States balkanize itself in the future, dividing further into separate, competitive and disconnected communities? Or, will it keep to its ideal of a single people and create for itself a new form of pluralism held together in new ways by shared beliefs in such fundamentals as capitalism and responsible citizenship,[2] and by wisely employing the tools of modern technology? These are the great unknowns as the new, more open global political and

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[1] "One Nation, Indivisible: Is It History?," William Booth, The Washington Post,February22, 1998, page A1.

[2] Ibid.

economic conditions which flourished in the aftermath of the cold war result in the stirring of the fabled American Melting Pot. But the roots of American social structure lie deep, and before considering the future an examination of the major historical forces that shaped American society is instructive.

What follows is a summary of three historical periods - the seventeenth century's Colonization of the New World, the eighteenth century's philosophical Age of the Enlightenment, and the nineteenth and twentieth centuries' Industrialization. During those times ideas inherited from previous eras were set in conflict with such new and not well understood forces as economic globalization, transformed political and social thinking, realignment of economic power, and a redefinition of the individual's role in society. Although interpretations of the present day effects of those periods will no doubt differ among historians and others who have carefully studied them, there can be little doubt that the same brand of conflict, in modern form, is found in early twenty first century America as well. By considering its origins, the basic construction of contemporary American society may be traced.

2.1 Colonization of the New World

As important as modern immigration is to the development of contemporary American social structures, it is not the sole influence on them. In the early seventeenth century, long before the idea of modern America existed, the first global capitalist economy was launched as the English, French and Dutch joined the already underway efforts of the Portuguese and Spanish by stepping away from their subsistence agrarian economies and setting out to become dominant colonial powers. In the process, new connections were forged between Europe, Africa and the Americas that were to have profound effects on the development of western political, social and economic structures for centuries to come. The capitalism that drove these connections is reflected in a series of important changes that took place in England beginning in the early seventeenth century.[3]

2.1.1 Expropriation: Creation of a Proletariat

In 1606 a group of English investors formed the Virginia Company, described by its founders as "a business organization with large sums of capital invested by adventurers whose chief interest lay in the returns expected."[4] The purpose of the company was to establish England's role in the colonization of the new world, but the investors, all of whom were major landholders, had a problem; they had to find a way to obtain capital more liquid than land with which they could purchase ships and otherwise finance their global economic adventures. To that

[3] What follows borrows heavily from Peter Linebaugh and Marcus Rediker, *The Many Headed Hydra,* (Boston: Beacon Press, 2000) pages 8-35.

[4] Ibid.

end, facilitated by newly developed pumping technologies that could be used to drain fens and make them suitable for agriculture, they embarked on a program that expropriated from already arable land thousands of people whose families for generations had freely used it as commons for subsistence farming. The landholders then enclosed the land, forbidding free access to it, and converted it to commercial pasturage.

Expropriation of the "commoners," as they were known, proved to be a long and often violent process for England. But by 1700 over 25 percent of English land was enclosed for commercial use, and there were twelve times as many propertyless people as there had been a century earlier. Over time, these former agricultural laborers, now without land, credit or vocational skills, were cast upon the country sides and the towns, where they were subjected to the merciless cruelty of the labor and criminal codes of the time. This group of now rootless and masterless men and women were increasingly seen by religious leaders, politicians, and many in England's upper and growing middle classes as a threat to the English social order.[5] Thus, in seeking to gather public support for colonization and publicly defending expropriation as necessary to fulfilling the ruling class vision of England's destined dominion over the new world, Virginia Company advocates offered colonization not only as an evangelical obligation for the mixture of Protestantism and capitalism, but also, with some irony, as a solution to the troubling domestic social problem, euphemistically called overpopulation, created by expropriation itself. It would provide, they proclaimed, a public service by removing the newly created "swarmes (sic) of idle people" to the colonies. Expropriation eventually served the economic ends of the land owning adventurers of the new global economy as members of the expropriated classes, often willingly but usually as punishment, joined with others similarly dispossessed from Ireland, Africa, the Caribbean and North America to provide the labor needed to explore and cultivate the new world.

2.1.2 New Alternatives: A life of Plenty, Peace, and Ease

In his last play, *The Tempest*,[6] a story loosely based on the actual wreck of the Virginia Company vessel *Sea- Venture* during a hurricane near Bermuda in July 1609, William Shakespeare used alternative ways of life in the new world as his major theme. Gonzalo, the wise counselor in the play who along with the king and other aristocrats becomes marooned on Bermuda, muses about the new kind of society of "plenty, peace and ease" that he would establish had he owned "a plantation of this isle":

> All things in common Nature should produce
> Without sweat or endeavor: treason, felony,

[5] Richard D. Altick, *The English Common Reader, A Social History of the Mass Reading Public 1800-1900*, (Ohio State University 2000), page 77.

[6] G.B. Harrison, Editor, *Shakespeare: The Complete Works*, (New York: Harcourt, Brace & World, Inc. 1952) page 1471.

Sword, pike, knife, gun, or need of any engine,
Would I not have, but Nature should bring forth,
Of its own kind, all foison, all abundance,
To feed my innocent people.

Shakespeare himself was an investor in the Virginia Company, and had carefully studied the reports of the early seventeenth century explorers, traders, and colonizers who were so aggressively linking the continents of Europe, Africa and the Americas through world trade. Of particular interest to Europeans of all classes were the reports of a native society in the new world with little or no conception of private property or labor. *The Tempest* is heavily influenced by these reports, and the play displays native cultures in a disparaging manner (in the person of the predatory and deformed native Caliban) and promotes the growing interest of England's ruling class in the settlement and exploitation of the new world.

But tales from the new world offered a decidedly different vision to expropriated commoners. Reports of a classless, stateless, and egalitarian society in the Americas held great appeal to people who had known only a life of hard subsistence labor with little or no reward, of a rigid class structure that restricted opportunities and aspirations, and of a system of government hostile to their most fundamental rights and needs. Although many were encouraged by Virginia Company officials to believe that there would be a restoration of the commons system in the Americas, and that land would be available for the free use of all, others saw beyond that to an opportunity to seize a new kind of life altogether - the life of "plenty, peace, and ease" described not only in *The Tempest*, but in stories told in taverns by returning sailors. In that sense these very first immigrants shared with their later counterparts a hopeful idea of what life in the new world would be like.

2.1.3 New Alliances: The Motley Crew

Composed of an international mixture of sailors, laborers, craftsmen, commoners and slaves of various kinds, the expropriated "motley crew"[7]—depicted in *The Tempest* as the conspiracy of Caliban, Trinculo the jester and Stephano the drunken servant - combined to present a threat to the new world dominance of the English ruling class as represented by the Virginia Company. The prevailing Company view was that the strange bed-fellows who made up this new class of people were dangerous, and always close to insurrection. This view was driven home by stories that had reached both England and Virginia of the wreck of the *Sea-Venture*.

Passengers on the *Sea-Venture* and other ships of the period often ventured forth in the spirit of the Old Testament's third book of Moses, called Leviticus, which was a popular devotion of

[7] In Renaissance England, the "motley" was a multicolored garment worn by jesters who, though sanctioned by royalty to make jokes and even to tell the truth to power, nevertheless symbolized disorder and subversion. Although racial diversity is what is most often described by the word motley, it is really the subversion of power and, to a lesser extent, the poverty of appearance, that gives the word its original meaning.

the time among the dispossessed.[8] In it an end to bondage and a restoration of an entitlement to the fruits of one's land and labor are foretold, and some believers interpreted the opportunity to emigrate to the new world as a fulfillment of that prophesy. Accordingly, when the *Sea-Venture* wrecked at Bermuda the crew seized the opportunity to establish a new social order. There arose an immediate conflict between the officials of the Virginia Company, which included the new Governor of the Virginia colony Sir Thomas Gates, and the crew of sailors, laborers, craftsmen and commoners. Gates insisted that the group view its respite on Bermuda as temporary and that it plan to continue on to Virginia as soon as another ship arrived. The crew, however, who aboard ship and now marooned had forged new bonds of cooperation and adopted a spirit of resistance to the authority of the Virginia Company, was content to remain on the island. In *The Tempest*, Shakespeare presented the mutiny of Caliban, Trinculo and Stephano as comically misconceived, but in real life on Bermuda in 1609, the resistance to the top down authority of Virginia Company officials took the form of democratic and anti-capitalistic ideas conceived from below. It was a resistance more varied, complex, sustained, intelligent—and dangerous to the established order—than Shakespeare allowed.[9]

The saga of the *Sea-Venture* provides a metaphor for what was later to develop as the ideas underlying American society. The new forms of exigent cooperation aboard the ship to survive the hurricane that caused the wreck, and the subsequent contention over alternative ways of life that might be available to all on Bermuda had, despite the best efforts of Virginia Company officials to assert their assumed authority, worked to level class distinctions. The defiance of the authority of the sovereign Virginia Company aboard ship and after the wreck at Bermuda gives early insight to the course of colonization in the new world.

2.1.4 Class Discipline: The Rule of the Soldier

Faced with new resistance that proposed alternative ways of life, officials of the Virginia Company responded first by abandoning the idea of restoring the commons system and then by reasserting class discipline through new forms of forced labor and the implementation of coercive terror tactics primarily through the imposition of martial law.

At the time, martial law was a relatively new phenomenon, having been originated in the Netherlands by Maurice of Orange during the late sixteenth century as a way to reinforce the discipline of new military organizational schemes. Military work processes had been broken down into component parts and then recombined to form new patterns of cooperation, efficiency, and collective power. Enforcing this new way of organizing relied ultimately on fear of the whipping post and gallows.[10]

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[8] Linebaugh and Rediker, Op Cit.

[9] Ibid. Page 28-9.

[10] Ibid. Page 32-3.

Almost all of the leaders of the Virginia Company venture in the new world were officers bred in the Dutch military tradition. Thus, the second charter of the Virginia Company (1609), *Laws Divine, Moral, and Martial,* gave Governor Thomas Gates the power to declare martial law in order to bring discipline to the colony and, as a consequence, make money for Virginia Company investors. The body of laws drawn up by Gates the day after he arrived in Virginia after being marooned on Bermuda was the result of his experience on Bermuda with the survivors of the wreck of the *Sea-Venture.* These mostly martial laws established military discipline for work and allowed for harsh punishments, including execution, for resistance. So as not to allow colonial workers to be affected by the anti-capitalist culture of the native Americans that was of such concern to ruling class Europeans, one of the principal purposes of the laws was to keep the two groups segregated.

But either in spite of or because of such harsh military measures as drumbeats calling settlers to forced labor and the *Laws* that promised terror and death to any who resisted, anti-capitalist sentiments took strong hold among the laborers. The ideal of a world without work, private property, treason, or magistrate became the perfect antithesis to the transformation of the colony by military men from a promised place of liberty to one of bondage, war, scarcity, and famine. By 1613, colonists in Virginia were starving to death as they were worked beyond endurance to build fortifications that would make of the colony a strategic military outpost in this early phase of English colonization. In search of food as well as a better way of life, a steady stream of settlers and even many soldiers defected to the native Americans, despite the certainty of a cruel and painful death if recaptured.

2.1.5 Slavery : Human Capital for the New Economy

At the beginning of the seventeenth century the major concern of the English ruling class was the “overpopulation” created by expropriation from the commons. Colonization presented a remedy for that concern, but by the end of the century rulers were concerned about the opposite—a depleted source of labor for the cultivation of new world colonies. Thus, new policies, such as the mobilization of common sailors to form a navy, the attention to birth rates in the colonies, and expansion of the West African slave trade, were implemented for the creation of labor needed to support the mercantile ventures of the Virginia Company and others. Among these policies, expansion of the African slave trade soon became the main labor source for the new world economy.

The first African slaves arrived in Virginia in 1619, and by the 1680’s, with the tremendous growth of the tobacco plantations, became essential to the developing agrarian economy. But in spite of the obvious contention that slavery as an institution presented to the new egalitarian ideals of the commoners who had migrated to the new world, opposition to African slavery among white Americans was all but non-existent during the seventeenth century. Most commoners had arrived directly from strictly stratified societies where the rich savagely exploited

the lower classes as a matter of practice, and—having yet to be influenced by the emerging European philosophies that asserted the natural rights of man—saw no need to question the enslavement of Africans. Moreover, unique to the American version of slavery was its racial basis: all slaves were Africans, and almost all Africans were slaves.[11] Thus was established and institutionalized in America a state of moral and political tension between the enforced social, economic and legal repression of Africans and the broader ideals of freedom and individual rights that were taking hold in the new world colonies.

It is not necessary here to discuss the well documented enduring effects that several centuries of slavery and its descendant policies of racial segregation have had on the development of American social structures. Recognition that essentially economic decisions made by seventeenth century European rulers and merchants have wrought political and social consequences of mega-proportion is sufficient to recognize slavery as a principal formative influence on the America of the early twenty-first century.

2.2 The Age of the Enlightenment

During the eighteenth century medieval feudalism was in its last stage. The absolute divine right authority of monarchs began to be eroded a century earlier by challenges ranging from the demands of the aristocracy for more decentralized power to the ascension of parliamentarians such as Oliver Cromwell who denied the rights of monarchs altogether, and then finally by the establishment of constitutional monarchies in England, France and, in a way, Germany[12]. Then as the century turned, fresh currents of philosophical thought emerged which rejected the notion of man[13] as captive to innate circumstances, and instead advocated a belief in rationality, natural rights, and a human capability for independent progress. The period became known as the Age of the Enlightenment, and beliefs in the liberty of persons, the security of property, and the freedom of discussion that gained acceptance during that time were rooted less in the abstract reasoning of earlier philosophers such as Descartes than in common sense views of basic human needs and impulses. Although the Enlightenment was essentially a French movement, largely because most of its ideas were born or discussed in the salons of Paris, its effects quickly spread across Europe and into England, where by the mid-eighteenth century the mass reading movement had greatly

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[11] A distinction was made between servants and slaves in colonial America, with servants being largely European men and women held by a period of indenture and slaves, including their descendents, being by law in a status of servitude for life.

[12] Although the Holy Roman Empire lost most of its power after the thirty years war, it was still important in Germany. The Empire's Reichstag sat continuously from 1663 until 1806, and in addition to being a good forum for settling disputes-even voting occasionally to remove an incompetent or despotic ruler of one of the smaller states-it provided a measure of security for those smaller states from being overtaken by their larger neighbors. (*History of Germany,* Area Handbook of the U.S. Library of Congress, www.home.carolina.rr.com/wormold/Germany.)

[13] Using the gender parlance of the time.

increased literacy rates among the masses, enabling the popularity of inexpensive political pamphlets to soar. The stage was being prepared for revolutions to come.

Perhaps the seminal work of the Enlightenment was contributed by English aristocrat and scientist John Locke who, in 1679 and 1680, wrote his two Treatises on Government. In them he denied the validity of the theory of the divine right of monarchs and asserted that the origins of the state were rooted in a social contract between the people and their government. Locke, himself wealthy, believed strongly that private property, regardless of the equality of its distribution, comprised the most basic element of a just society, and saw the primary purpose of government as the protection of such property. He also maintained that the people were within their rights to remove or alter a government which betrayed their trust, and that revolution was their ultimate and legitimate recourse when tyranny had deprived them of their property rights. Considered too radical to be published at the time they were written, the Treatises finally appeared in 1690.[14]

Many of Locke's views on the state and on the nature of man became orthodox among such philosophers of the Enlightenment as Montesquieu, Bayle, Diderot, Voltaire and Rousseau, who, believing in the social function of knowledge and that only in society could man realize full potential, quickly introduced their beliefs into the realm of practical politics. There were, of course, differences of opinion among Enlightenment philosophers, and Rousseau in particular had a more utopian view of the just society than did Locke. Rousseau's vision of the social contract was not contingent on private property; instead it was based on the necessity of equal representation under the law, and submission only to that law which society, after free discussion and deliberation by its members, grants as necessary for the common good. Rousseau also believed that such political and intellectual freedom was worthless if man did not have moral freedom as well, and asserted that the overriding purpose of the state in enforcing law was to assure legal and moral equality.

The writings of Enlightenment philosophers, particularly Locke and Rousseau, heavily influenced the thinking of American political leaders of the eighteenth century. The experiences and expectations brought to America by its Virginia Company colonizers and the labor they imported combined after several generations into a culture that embodied a natural tension between rights of private property and individual liberty.

In eighteenth century republican thought, however, there was an intimate connection between property, virtue, and self-government. Thomas Jefferson, for example, believed that widespread ownership and individual cultivation of the land would create a citizenry communally tied to their country and committed to its liberty in the most lasting way. He envisioned a decentralized self-governing agrarian society, egalitarian in nature because of an equal distribution of property and requiring only limited central government.

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[14] David Cody, Hartwick College, England, The Victorian Web http://stg.brown.edu/victorian/religion/locke.html

Moreover, Jefferson and his allies, suspicious of hierarchical governmental power as a natural threat to the primary rights of common people, believed that if self-government were to work it must demand more from citizens than factional self interest: echoing Rousseau, they believed that citizens ultimately had to act out of a concern for the common good—a moral sense of duty to others which would do away with the distinctions between men. At the time, this idea was as revolutionary as the idea of democracy itself in that it replaced obedience to divine or worldly command with the dictates of individual conscience acting out of a sense of common humanity.

However, this Jeffersonian ideal did not survive the politics involved in the creation of the United States Constitution, losing out to a more hardheaded view of human nature put forth by James Madison and Alexander Hamilton: the more Lockean idea that people are mostly driven by private interests, which government, as the basis of its social contract with the people, must assertively control through a system of checks and balances. Madison agreed that the unequal distribution of property was the most common source of the factionalism that the Jeffersonians believed to be so destructive in a republic. But, believing that people naturally migrated into factions because they were more selfish than virtuous and more in competition with each other than joined by a sense of common good, as a solution did not advocate a more equal distribution but rather the imposition of regulation of these various competing interests.[15] (In Federalist 10 he went so far as to declare that the existence of factions meant freedom.) Thus the tension between property and individual rights was maintained in the American political system.

But Enlightenment philosophy was not the only influence on American political leaders of the time for this also was the period known as The Great Awakening, a time when many Americans were caught up in an evangelical religious fervor that challenged the authority of the state supported Anglican church and, in the process, the authority of any government that was based on hierarchies of deference and privilege. Some believe that in *Common Sense* Thomas Paine brilliantly exploited this fervor when he linked independence to the spirit of the Awakening by casting the cause of rebellion as a matter of emotion rather than logic, and by assaulting monarchs as blasphemous usurpers who claimed a sovereign authority over other human beings that rightfully belonged only to God. The Great Awakening was a period of religious enthusiasm that was characterized by often intense sectarian rivalry and at once revived older traditions of protestant dissent—especially to the divine right of monarchs—and gave impetus to popular and individualistic styles of worship that defied the claims of established authorities, first in churches and then in politics. Many see the Awakening of the 1760’s and 1770’s as a prelude to revolution, merging traditions of Protestantism and republicanism and priming a generation of colonials to

[15] Ibid., page 29.

support the American independence movement and ultimately revolution against the King of England.[16]

After the revolution, even as the political debate continued over whether it was in America's best interests to become a decentralized nation of small farmers (Jefferson) or one that relied on manufacturing and military might (Hamilton), independence stimulated the enterprising spirit of the American common people and the economy began to rapidly expand. Commerce soon overpowered the idealistic concern for the common good as the primary social glue of the new nation, and while property under the colonial system was what made a person presumptively virtuous and entitled to influence, in post- revolutionary America it was simply the commodity that made him rich. However, this fairly unrestrained capitalistic pursuit of property had effects beyond economic growth - it strengthened the individualistic and competitive political attitudes that shaped the nascent American government and launched the nation on the path to its economic, and factional, future.

2.3 Industrialization

It most decidedly was not the egalitarian agrarian republic of Jefferson's dreams - the society of entrenched classes and factional interests that was imported during colonization, and institutionalized by the new U.S. Constitution, persisted. But in the decades preceding the Civil War America was a country where, if you were white, many of the platitudes about hard work and opportunity were basically true. There was enough available land and wealth to create the most free and equal country the world had yet seen; it was the first nation in history where circumstances of birth did not unalterably determine one's future.

The lore of the self-made man contained enough truth for common people to believe that an unfettered market operated in their behalf, and that the role of government simply was to secure equal rights for all and to suppress special privilege. Reflecting this, Andrew Jackson, vetoing the re-chartering of the Bank of the United States in 1832, declared, "It is to be regretted that the rich and powerful too often bend the acts of government to their selfish purposes…If it would confine itself to equal protection, and…shower its favors alike on the high and the low, the rich and the poor, it would be an unqualified blessing."[17] In pre-industrial America, unrestrained capitalism had liberated the common people—Jackson's constituency—as never before or, perhaps, since, and was seen by them as the instrument of their new opportunities, endangered only by government policies that would restrain free market operation. Soon, however, that same brand of capitalism would lead to the development of labor-replacing technologies and then to the reformation of traditional concepts of work and freedom that were so valued by the common

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[16] Christine Leigh Heyrman, *"Religion and the American Revolution,"* National Humanities Center Home Page, www.nhc.rtp.nc.us.8080.

[17] Packer, Op.Cit. page 31

people who had prospered within free market workings. It would lead America into the era of fundamental economic and social change known as the industrial revolution.

Although the industrial revolution in Europe and America often is traced to specific technological events, such as the invention of the clock, the steam engine, or electricity, it also may be understood as a shift in the way society was organized—a shift from a rural land-based and handicraft economy to an urban manufacturing one. The revolution first manifested itself in the British textile industry early in the nineteenth century, when the steam engine enabled the rapidly growing cotton industry to move from its distributed home base, where production rates were self-paced at the discretion of the individual worker and small machines run by hand or natural wind or water power were used, to a factory system, where production rates became a function of large machines that replaced most human effort and were powered by coal or wood rather than humans or animals. The factory system provided new industrial capitalists with greater control over the lives of workers, who now had to report to a centralized facility where factory owners were then able to set longer and more uniform work hours that better utilized the machines' capacities and yielded substantial production increases.

This dramatic change in the relationship between workers and their work provided the impetus for many of the political upheavals which would follow as the industrial revolution quickly spread through Europe and across the Atlantic to North America. The costs of new production technologies for the factory system were substantial, and affordable only to those who already had large amounts of capital. The result was that those with money to invest became owners, while the rest—the vast majority—had to leave their rural roots to congregate in cities and become workers in an increasingly de-humanizing industrial system, breaking down the old structure built of families whose members were bound to each other by commonly held rights to a means of production. The tension produced by this new division of wealth created a polarization between worker and owner that resulted in political changes ranging from the formation of unions to the growth of communism.[18]

In America, as in England, the factory system began in the textile industry early in the nineteenth century. It spread to the metallurgy and chemical industries by the eighteen forties, and by the time of the Civil War had been adopted by almost all market-based industries in the United States. Although the American model of manufacturing was dominated by machine processes, there was little uniformity of factory layout between and among industry sectors. It was not until the century was drawing to a close that attention was focussed on the efficiency of factory design, leading to the development of the system known as Scientific Management, signaling the

[18] Rutherford, F.J. & Ahlgren, A., *Science for All Americans* (New York: Oxford: 1990).

beginning of the managerial era (and the end of the craft era) in the United States and dominating American work life for most of the twentieth century.[19]

The person most often associated with scientific management is Frederick Taylor, whose 1911 book, "The Principles of Scientific Management," is based on a rationalistic view of the world and discusses what he called the struggle for control of production between management and labor. Control would be won by management, Taylor held, only through the assertive application of scientific principles to the design of work that synchronized the simple-as-possible efforts of humans with the high speed operation of machines, reinforced with piece work pay, to achieve maximum efficiency in a production system. An immediate result of scientific management principles in wide use by the nineteen twenties was a drastic cut in the cost of manufactured goods—in some cases as much as 95 percent under the cost of the same goods manufactured in an "unscientific" system—which enabled more people to purchase more goods than ever before. Still, Taylor's methods met with active resistance from labor, which, though benefiting from the reduced prices of manufactured goods now available for their purchase, resented the displacement of craft knowledge held by workers with a systematized method of production controlled by management. Taylor himself acknowledged that workers did not readily accept his methods, noting that his attempts to redesign the work process started a war that only grew more bitter as time went on.[20]

Taylorism had larger social consequences as well. As the labor market shifted dramatically, skilled labor was replaced whenever possible with cheap, easily trained and disposable workers who increasingly came from the ranks of the new arrivals from Europe, eagerly encouraged in their immigration by the capitalists of the period. These unorganized and unskilled laborers bore much of the brunt of the advance of scientific management's demands that workers produce at higher speeds with increased subordination to management and little if any job security. This changed labor market gave management the added maneuvering space to introduce new wage structures and to select only workers who were most willing to accept them. John Dos Passos, a prominent American writer of the period between the World Wars, recognized that Taylor's methods led to the de-skilling of work, and, by devaluing workers in the process, had a distinct anti-working class character.[21] Scientific management's severest critics held Taylor responsible for giving rise to a system that subjugated workers to a kind of industrial slavery. In any case, a new class of American worker was created during the industrial revolution and its subsequent transformation in the era of scientific management, a class whose members were treated more or

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[19] Sullivan, B.G., *"The Challenge of Economic Transformation."* In S.E. Goldberg & C.R. Strain (Eds.), *Technological Change and the Transformation of America,* (Carbondale: Southern Illinois University Press: 1987) pages 91-103.

[20] Lasch, C., *"Technology and Its Critics: The Degradation of the Practical Arts,"* Goldberg & Strain, Op. Cit., pages 79-90.

[21] Dos Passos, J., *USA Book Three. Big Money,* (New York: Harcourt, Brace, & Company: 1936).

less as simple adjuncts to machines, and whose disposability was the main source of their market value.

Chapter Three

Visions of the Future

That a lot of technological prophesy never materializes might be attributable to its insufficient deference to humans and their inner motivations. In the genre of science fiction, for example, the best writers—from Mary Shelley (*Frankenstein)* to Frank Herbert (the *Dune* books)– always made the subtle case that science is really beside the point, that it can't, ultimately, solve the truly big problems because however sophisticated technology gets human nature tends to stay pretty much the same.[1] This point is reinforced in a 1976 essay on the nature of fallibility[2] by philosophers Samuel Gorovitz and Alasdair MacIntyre. They suggested three causes for the predictive errors of science: the first is ignorance brought about by incomplete scientific knowledge, the second is ineptitude on the part of practitioners of science, and the third is what they called "necessary fallibility, " or the acknowledgement that there may be some kinds of knowledge science and technology can never deliver, namely the kinds needed to go beyond explaining how and why living things behave as they do to predicting how certain changes will affect their behavior in the future. So while technophiles issue often rosy predictions about how science will affect society, seemingly fully convinced that its silver bullet qualities will surmount whatever inertia might stand in the way, unlike the writers of good science fiction they often seriously underestimate the immutability of human nature.

All this relates directly to discussions of the societal effects of information technology because there is much of the silver bullet mentality in the way one of its manifestations - the digital divide - has been approached in recent years. Take the basic question of why it even matters so much if there are groups of people who have limited familiarity with or access to the computers and the internet. Answers usually center on generalized concerns over the potential disadvantages that lack of such skill and access may impose in the future—all based on a set of often quite optimistic assumptions about the influence the internet and other information technologies are going to exert on individual lives during the years ahead. And as to questions of what to do about it, again answers usually end up advocating various institutional strategies for simply extending internet access to the people who lack it in the apparent belief that the technology itself will provide opportunity and motivate the behavior necessary to gain the advantages thought to naturally accrue from being connected. But the fact is that, although measurements of access are important data, so long as the problem of the digital divide is described in connectivity terms alone its solution will be not only deceptively simple but elusive. To be fully understood, the existence of the divide must be considered in the larger context of the

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[1] Daniel Mendelsohn's review of *Timeline* by Michael Crichton, New York Times Book Review, November 6, 1999, page 6.

[2] Referenced by Atul Gawande, "Final Cut", *The New Yorker,* March 19, 2001, page 98.

complex mosaic of historical and cultural influences that determine the structure of a society, and in considering its future importance the realistic limitations of technology as a silver bullet change agent for the human condition must be acknowledged.

The bottom line promise of most technology is that it will increase efficiency by reducing friction. The term friction is most literally used in physics and engineering to describe a calculable impediment to a rate of motion, but in a larger sense it also describes conflicts that create a drag on progress[3] toward the generally shared goals of a modern democratic society, such as greater equality of educational and economic opportunity, good and accessible health care, a high rate of employment, a less disparate distribution of income, etc. For example, while political and social factions serve a mostly constructive purpose in a free market democracy, at the same time there is little doubt that the friction generated by their competition for relative power usually creates large inefficiencies in governance and, in fact, may lead to conflicts that are destructive to the democratic process itself. Far and away the most frequent causes of serious social friction in American society have been centered around issues of race and economic class—the very same ones that are most commonly used to measure the Digital Divide. Therefore, assuming that the spread of information technology will have some kind of social effect, the central question when considering what that effect might be is not solely who or how many are users of the technology, but whether the technology itself is apt to lead to a lower friction society—one with a reduced probability of factional conflict, or a higher friction society—one where the probability of such conflict is heightened.

3.1 The Lower Friction Scenario

If one were to rely solely on the advertising campaigns of major telecommunication companies, it would appear that the hyper connectivity they advocate is leading to a place where historical conflicts tied to competing national interests are neutralized, people are freed from the mundane constraints on their aspirations insinuated to be endemic to the unconnected, language and cultural differences are reduced to irrelevance, and a higher, more peaceable, order of human relations awaits. The evident self interest of these companies notwithstanding, when it comes to predicting the effects of greater and greater connectivity most of its purveyors and prognosticators seem to believe that simple transactional efficiency is not reason enough for excitement. They seem to have to also believe that in addition to delivering a technological revolution, mass connectivity will bring with it an acceleration of human evolution as well.

Underlying this optimism is the assumption that the information technology revolution of the late twentieth century is unlike any that has come before, and, therefore, will have grander

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[3] Another broad application of the term “friction” can be found in *On War*, the classic treatise on military strategy by Carl Von Clausewitz, published in 1832. Although there may be some overlap between the way the term is used here and the way Clausewitz used it, *On War* was not a reference for this paper.

and more far reaching transforming effects. For example, in his 1997 book *What Will Be: How the New World of Information Will Change Our Lives*, Michael Dertouzos of the Laboratory for Computer Science at the Massachusetts Institute of Technology, echoing Buckminister Fuller, wrote of the prospect of "computer-aided peace" made possible by digital networks like the internet. "A common bond reached through electronic proximity may help stave off future flare ups of ethnic hatred and national breakups," he suggested. In a conference speech in November 1997, Nicholas Negroponte, head of the MIT Media Laboratory, explicitly declared that the internet would break down national borders and lead to world peace. In the future, he claimed, children "are not going to know what nationalism is."[4] But if students of history find these claims familiar it might be because they were also made about one hundred fifty years ago—about the telegraph.

As the first technology to link distant peoples, the telegraph was hailed as the silver bullet panacea of the Victorian era. Although it did not live up to its declared potential to cure the world's problems, it nevertheless encouraged an enduring belief in the transcendental effects of technologies that in one way or another brought people closer together. In the 1890's advocates of electricity claimed it would eliminate the drudgery of manual work and create a world of abundance and peace. In the early twentieth century it was suggested that airplanes and the more rapid international travel they made possible would not only erode international differences and misunderstandings, but would lead to an age of peace because armies, now vulnerable to air attack, would become obsolete. In mid-century, television was expected by many to improve education, reduce social isolation, and enliven democracy—these high expectations were revived as cable television came on the scene in the 1970's. So the optimistic claims now being made about the internet, while it is still much too early in its development for it to be fully judged, may be just the most recent examples in a tradition of information technology utopianism that goes back to the very first manually operated telegraph communication towers erected throughout Europe during the reign of Napoleon and, somewhat more recently, the first transatlantic cables of more than a century ago.[5] Still, there are some unique elements in the development of computing power and the internet over the last twenty years or so that may indeed foretell changes not realized by previous technological leaps forward.

The most apparent of these elements is the extraordinary speed with which new information technology has been integrated into daily life in the United States. It took electricity about fifty years to spread to just 25 percent of Americans; the telephone took thirty five years, the automobile fifty five years, the airplane sixty five years, and television twenty six years. The personal computer, on the other hand, took just sixteen years and the internet only seven.[6] Also

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[4] Tom Standage, *The Victorian Internet: The Remarkable Story of the Telegraph and the Nineteenth Century's On-Line Pioneers*, (New York: Berkley, 1998), page 207.

[5] Standage, Op Cit., pages 210, 211.

[6] "The Economy at the Speed of Light," *Federal Reserve Bank of Dallas 1996 Annual Report*, Exhibit D.

there is the unprecedentedly large knowledge pool that the internet offers to its users. Earlier technologies gave greater speed and ease, but none other has provided individuals with the range of freely available information that is to be found by navigating the internet—information that is extremely difficult if not altogether impossible for any government, corporation or other authority to effectively control. To the extent that knowledge does lower barriers, reduce the enmity of factionalism, and encourage new alliances, the internet can be a liberating force for countless individuals who, for one reason or another, are excluded from the larger economic and political communities around them.

So notwithstanding the often painful lessons of history, perennial optimism about the benefits of technology maintains a powerful influence on the expectations of most people. The term “connectivity” itself, suggesting a more collegial and less alienated society, carries with it a high social valence, and the temptation to believe that this time technology actually will deliver on its promise seems to be just too inviting for even the more objective prognosticators to resist.

3.2 The Higher Friction Scenario

In an observation often, and perhaps apocryphally, attributed to Mark Twain, it is said that history does not always repeat itself, but it rhymes. For example:

> big industry has brought all the people of the earth into contact with each other, has merged all local markets into one world market, has spread civilization and progress everywhere and has insured that whatever happens in (developed) countries will have repercussions in all other countries.

Although this sounds very twenty first century, perhaps a quote from globalist Thomas L. Friedman (author and *The New York Times* foreign affairs correspondent), it was actually written in 1847 by none other than Karl Marx.[7] Only instead of considering it as a force for good, Marx, writing just about fifty years after the industrial revolution began in England, viewed the growth of capitalism with foreboding. He envisioned rising tension between the owners of capital and those who worked for them, and saw communism as the way to abate it. It may be argued that no prognosticators ever were proven so wrong about the future as Marx and his associate Friedrich Engels, but still there are some useful parallels between the social frictions created by the mechanical marvels of the nineteenth century that begot both the economic efficiencies of the industrial revolution and the social and moral debacle of communism, and those of the scientific developments of the twentieth century that begot the information revolution and are said to be moving us all toward a global economic reordering known as the post-industrial economy. It would be a fairly safe bet, then, to expect that just as the gyrations of industrial capitalism

[7] Ernest Mandel, “The Formation of the Economic Thought of Karl Marx,” (New York: Monthly Review Press,1971) page 41.

generated violent challenges in the anti-hierarchy revolutions of 1848 and 1917, and in the rise of socialism during the 1930's global depression and in large areas of the post World War II world, so will post-industrial capitalism encounter at some point a radical and infectious new dialectic regarding its own new order.

The geo-political strategic aspects of this post-cold war friction between nations on the "fast" side of the global digital divide and those that are not have been comprehensively discussed by Mr. Friedman in his book, "The Lexus and the Olive Tree," where he points out that the causes of the friction are as new as the information technology that drives them, and as old as the cultures of the nations involved. This same pattern of conflict between new ideas and inherited conditions also can be discerned in the digital divide that exists within American society. Described in the newer language of the information revolution are the age old problems of unequal distribution of opportunities and resources among ethnic groups and economic classes, the ghettoizing of minorities, the marginalization of the under-skilled, the intransigence and debilitating effect of generational poverty, the consequences of inevitable economic downturns, and ethical and political struggles over the influence that technology (in this case computers that, according to scientist Ray Kurzweil[8], in the not too distant future will not only surpass the computing power of the human mind and be able to redesign human beings, but may themselves begin to seem sentient) should have on society. Extending connectivity to the internet may be a sound and necessary policy for improving the statistical measurements of the digital divide, but it touches only lightly on the broader and more deeply rooted societal conditions that underlie it—conditions that are as sure to cause friction in the future as they have in the past, and are not likely to be assuaged by the silver bullet of internet access.

[8] Ray Kurzweil, *The Age of Spiritual Machines: When Computers Exceed Human Intelligence (*New York: Viking, 1999*).*

Chapter Four

Critical Questions

Just as the positions of Gladwell and Surowiecki on the information age and the New Economy described in the Introduction are reasonable but contradictory, so too are the numerous measurements of the digital divide, with some authoritatively citing a widening of the gap between groups of Internet users and non-users while others, with equal integrity, cite a narrowing. Whichever is the case, however, the existence of some degree of divide is not disputed.

But the presence of divides is nothing new in American society - it has always been an amalgam of ethnic, economic, and religious factions that correlated well with the distribution of economic opportunity and political power. For example: based on 2000 census data, if the American population could be proportionately reduced to 100 its make up would look like this:

- 71 would be non-Hispanic white, 13 would be black, 13 would be Hispanic, 3 would be Asian and other.
- 61 would be Protestant, 28 would be Catholic, 2 would be Jewish.
- 10 would be foreign born.
- 14 would speak a language other than English at home.
- 88 would have graduated from high school, 39 would have completed college.
- 70 would live in urban centers.
- Non-Hispanic White median income would be $44,400, Hispanic median income would be $30, 800, Black median income would be $28,000.
- 44 would be homeowners.
- 51 between the ages of 35-44 and 24 over age 55 would own computers.
- 26 college graduates and 11 high school graduates would own a computer.
- 77 out of 100 adults with incomes over $75,000 and 17 out of 100 adults with incomes below $25,000 would own a computer.
- 22 would be regular internet users.
- 51 would use a computer at work.

If, using these and other data, one were to create an Internet connectivity and computer ownership matrix, with the vertical axis being divided into four degrees of connectivity—say <25 percent, <50 percent, <75, <100 percent—and the horizontal axis being divided into headings such as household income, age, gender, education, and four or five of the gross ethnic categories found on a census form, the array of users across the matrix cells would clearly indicate a distribution and ownership pattern skewed more or less toward the more affluent, educated ethnic

majorities. Hardly a surprising result, but beyond providing a useful moment-in-time snapshot of one effect of the way information technology has been distributed in the United States, what do such analyses really measure? The problem with them is, borrowing an observation from the poet Ovid, *Causa latet vis est notissima*[1] - The cause is hidden though the effect is clear. The quantitative facts of internet connectivity and computer use are important data points for policymakers and others who are considering this issue, but, before settling on a strategy, an examination should be undertaken of some key issues that extend beyond the "Who is connected?" genre.

4.1 What, if anything, makes the digital divide so different from the other kinds of material disparities which exist between social groups in American society that special efforts are merited to close it?

The answer to this question depends on whether one conceives of the gap between information technology "haves" and "have nots" as a glass that is filling, or one that is stuck at half empty. Those who see the glass filling like to compare the distribution pattern of information technology to that of other technologies of the past—electricity, automobiles, refrigerators, telephones, etc.—and believe it is natural in a market economy for it to be initially used most by the more affluent segments of society. Further, because they tend to think of the gap in terms of an entrepreneurial opportunity, they oppose any government involvement in closing it. Instead, they advise relying on natural market forces to eventually distribute the technology across social and economic class lines in the most efficient way by devising new product and service sets that will appeal to all segments of the market.[2] Those who see the glass as stuck at half empty, on the other hand, believe the fact that market forces have thus far skewed access to and use of the technology toward the more affluent, educated and socially entitled among us is proof of a market failure. Accordingly, In their view, in order to avoid the disempowering effects of widening the gap even further as technology develops, some form of public policy intervention is needed to assure that poorer and less educated Americans have opportunities to acquire the tools needed to function and prosper in an increasingly computer reliant world.[3] So just as in the debate over whether or not there is such a thing as a New Economy, distinguishing the digital divide from other material disparities in American society is a matter of subjective definition.

Although the various economic, ethnic and religious factions within American society remain fundamentally connected by the processes of capitalism and democracy, the unequal distribution of economic opportunity and political power among them creates a highly competitive field of sometimes mutually exclusive interests. The reasons for this competition

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[1] Quoted by Marco Da Cola, a character in, *An Instance of the Fingerpost,"* Iain Pears, (New York:Berkley:1998).

[2] "A Modern Philosophy of the Digital Divide," Solveig Singleton and Lucas Mast, (The Cato Institute), *Educause Review,"* November/December 2000, pages 30-36.

[3] "Losing Ground Bit by Bit," Susan Goslee and Chris Carter (Editor), Benton Foundation, June 1998, pages 3-13.

range from the legitimate factionalism that was institutionalized in the American constitution by James Madison and others to the endemic racism of American society and its derivative policies of exclusion. But even when the resulting conflicts are legally settled - such as in establishing a more or less progressive tax system, outlawing various forms of discrimination, establishing labor rights, liberalizing immigration laws, clarifying the line between church and state, etc.—a level of competitiveness remains that has major on-going economic and political effects, primary among which is the historical tilt of resources and opportunities of all kinds toward those identified with the dominating Euro-centric culture of the white Anglo majority. Simply put, there is a higher degree of economic and political impotence among those Americans not identified with the dominant culture, creating for them all sorts of disadvantages, of which lower computer literacy is only one. Whether it is among the most important, warranting either devising a stimulant to redirect market forces toward the now under utilizing segments or direct government intervention of the sort that brought electricity to rural areas during the depression of the 1930's, depends on which set of assumptions you adopt regarding the future importance of the technology. But, in any case, there is little doubt that those poorer and less educated Americans who do not acquire at least a minimum level of facility with the tools of modern information technology will be adding to their already long list of disadvantages and increasing their risk of further marginalization in the future. For this reason alone, the digital divide merits the attention of business and government leaders. More important, it merits leadership and activism among the people who themselves are most at risk.

4.2 What, if anything, can efforts to narrow the digital divide do to help promote social cohesion in the future given that the dramatic change to U.S. demographics likely to come about from contemporary immigration patterns may lead to an unprecedented realignment of political and economic influence within U.S. society?

America is not there yet, but based on the 2000 census it appears as if recent waves of immigration have put it well on its way to becoming a nation of minorities. If the forecasts are correct, somewhere around the middle of the twenty-first century Americans identifying themselves as non-Hispanic whites will slip below the 50 percent level, and new immigrants from Asia, Africa, and Latin America and their American born offspring will each comprise substantial pluralities of the U.S. population. This shift will be dramatic not only in numbers, but also in its effect on the U.S. economy, education system, and national politics. The centuries old cohesive domination of Euro-Christian culture is likely to face severe challenges, and new friction can be expected as influential forces within that culture endeavor to manipulate events in order to cling to power. More ominously, the greater religious, linguistic and cultural diversity of these new Americans, combined with the historical insular tendency of immigrant groups to live in enclaves for several generations, calls into serious question the future efficacy of the traditional U.S. melting pot approach of aiming to assimilate newcomers into the dominant culture.

To the extent that it has succeeded in the past, the process of assimilation among immigrants and resident Americans has been driven by the economy, the influence of a prevalent popular culture, and a belief in individual opportunity. While new arrivals retained their ethnic traditions and affections, assimilation was promoted by the common language of English, a pride in a new identity as an American, and a willingness to adopt the so-called protestant ethic of self- reliance, hard work, and moral uprightness. But assimilation has never been easy either for the immigrants or for Americans already here, and social cohesion in America has always been tenuous, especially so when it came to race and religion. Throughout history, particularly but not exclusively during difficult economic times, Americans of the majority have exhibited a prejudice and insecurity about minorities and new arrivals which, in addition to racism and religious alienation, has often lead to a backlash against immigration. Even during the American nation's earliest times, Benjamin Franklin voiced such concerns by once complaining about the rising number of German immigrants, saying they "will shortly be so numerous as to Germanize us instead of our Anglifying them."[4] Later examples include the anti-Irish catholic sentiments of the 1840's, the Chinese Exclusion Act of 1882, and the Immigration Act of 1924, which sought to limit Italian and Jewish immigration.[5] But in the nation of minorities that the U.S. may become in a matter of decades, there may, in fact, be no dominating culture upon which to base a concept of assimilation.

What, then, can take up the slack resulting from the possible decline of language, religion, and national identification as binding forces for the American society of the latter twenty first century? The most likely candidate will be the market economy, and the opportunities it can provide to connect individuals, distribute the tools of power, and afford civic influence for the masses. This likelihood returns us to the question, then, of whether a New "Information" Economy is in the making, requiring new ways of thinking about work as radical as those developed during the industrial revolution, or whether it will be pretty much the same economy, only bigger and requiring some new tools but still with the same baggage of endemic inequality of opportunity.[6]

Whatever the future of the U.S. economy, connectivity advocates maintain that computer literacy will be as critical to prosperity in it as the ability to read. If they are right, and there is no reason to think they are not, then such digital age issues as locating the public interest in various deregulation plans, ensuring equal access for all Americans to developing communication technologies, connecting classrooms, assuring the availability of non-commercial expression, and maintaining libraries and other public learning spaces are critical. But as has been the case with

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[4] "Can America Assimilate," Robert Samuelson, *Newsweek,* April 9, 2001, page 42.

[5] Ibid.

[6] As a measure of that inequality, a 1999 study by the Urban Institute, cited by Samuelson, reports that at the end of a decade of unprecedented economic expansion and heavy immigration, 30 percent of immigrant children lived in poverty and immigrant Hispanic males earned only 68 percent of the wages paid U.S. born workers.

every new technology, there are those who see only its potential to do good and there are others who see only opportunities to commit crime, cash in, or create chaos. So in considering down what path the information revolution will take us in an era of societal shifts, we should listen to this unmistakable message of history: Whether it winds up being a force for good or evil, whether it better distributes economic opportunity or further restricts it, whether it reduces the destructive frictions within society and encourages the creative ones or the opposite, and whether it promotes civic engagement and social cohesion or divides Americans even more than before will depend less on the innate nature of the technology than on the adaptable nature of the humans who will use it. In the twenty first century, simply wiring everybody up should not become a proxy for the far more difficult and crucial work of community building that probably lies ahead.

4.3 In the U.S. society of the future, will the best strategies for narrowing the digital divide be those devised and executed by institutions for business or public policy reasons, or those based on individual and community actions taken for empowerment reasons?

James Madison's view that equitable majority rule could be sustained in America only if the majorities themselves were unstable, temporary coalitions of minorities has worked only occasionally—such as during the civil rights movement of the 1950's and 1960's - regarding various minority racial and religious factions, which typically were culturally isolated and often legally excluded from the very democratic processes that could lead to a position of relative power. He and other framers realized that any majority has a tendency to become tyrannical, and this fear has been borne out by history. Since the nation's inception the white Christian majority manipulated the democratic process to restrict participation by others and reinforce the importance of their identity as the primary definition of an American. But as the twenty first century begins and the demographics of the United States appear to be on the forward edge of a dramatic realignment, Madison's vision of issue based coalitions comprising temporary majorities well may be the way of the future in American politics and the economy.

Coalitions are built through processes of negotiation. Confronted with limits on independent action, individuals or groups naturally seek empowerment by making alliances with those who have such complementary resources as connections, money, expertise, information, coercive power, and decision making authority. People assemble coalitions by negotiating cooperative agreements with potential allies, as well as preventing or disrupting the negotiation of such agreements among potential adversaries, and the ability to frame situations in ways that illuminate compatible interests is critical to enticing coalition partners.[7] It is in enhancing that ability that the communication and organizational prowess of the internet may have its greatest popular impact in the future.

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[7] "Sources of Power in Coalition Building," Michael Watkins and Susan Rosengrant, *Negotiation Journal*, January 1996, page 2.

Up until the dot-com bubble burst, expectations for the internet were pumped sky high by its promoters, and control of the internet's future seemed to rest in the hands of a relative few corporations. However, anti-trust action by the government and the implosion of a large number of new internet ventures has led post - bubble internet strategies to focus most on the economics of efficiency. In the foreseeable future, the real internet wars are not likely to be between exotic start-ups offering an array of niche services but well established corporations with real products and assets who seek to become leaner and more competitive by building out the internet to better manage inventories, customers, and, importantly, global operations[8]. Under business leadership, with government support, internet promoters portray it as the next big utility, as pervasive as electricity and able to deliver instant information any time, any place, and from a multitude of devices—some as traditional as refrigerators.[9]

But by also enabling connections between people who have not been connected before, the internet has the potential to put new power in non-institutional hands as well. Unlike such earlier technologies as the telegraph, the internet, because of its dispersion, may offer a genuine potential for coalition seekers to bypass the established hierarchies of power and work more directly to coalesce existing political and economic factions, or to form entirely new ones. Unfortunately, this also provides new opportunities for terrorists, criminals, and hate groups as well. But to focus on the more constructive possibilities, by equipping individuals, human rights groups, conservationists, and other special interest activists with new tools to tap into wider and wider pools of creativity and innovation, with much less effort these groups can utilize the internet to more effectively frame and communicate their issues, broadly organize, garner public support for their aims, and empower themselves to force the kind of transparency and responsiveness on governments and corporations that in their view will best serve their interests. Proof of the effectiveness of this approach can be seen among the achievements of groups as diverse as the Falun Gong in China, AIDS activists, and international pro-Kyoto Treaty lobbyists.

We have seen that the institutions of government measure the digital divide in terms of connectivity alone, and business tends to see the divide solely as an opportunity to expand its customer base. But to coalition-seeking activists it can be seen primarily as a barrier to empowerment as the demographic shift takes place within American society and traditional hierarchies of political and economic influence, based on the existence of a single dominating culture, become less secure. If the new cultural pluralism that may come to characterize the U.S. is to find a basis for cohesion in a common commitment to the market economy, and roughly equal opportunities to participate and prosper in it, then the creation of balanced factions that can

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[8] Gartner Group consultants estimate that by 2007 Chinese will be the most common language spoken on the internet, and by 2004 the European internet economy will grow twenty fold. In this vein, AOL has announced a $100 million investment in India. ("Hype and Anti-Hype," Thomas Friedman, *The New York Times on line,* February 23, 2001.)

[9] "Growing Invisibility is Internet's Utility," Leslie Walker, *The Washington Post,* May 16, 2001, page G1.

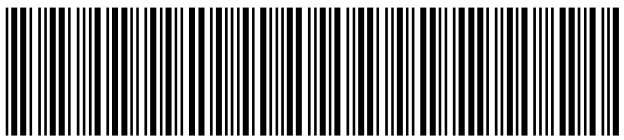
invite coalition partners is a crucial step toward avoiding serious social deterioration. The pragmatic interests of businesses, government, and the presently disenfranchised are not preordained to be uncomplementary in the more diverse society of the future. To the extent that the internet can facilitate the organization, mobilization and combination of such interests, particularly among those who are at highest risk of further disenfranchisement, promoting access to and facility with it among those groups within which internet use is lowest should be a major strategy for community leaders.

Chapter Five

Conclusion

Utopian or grandiose visions notwithstanding, there seems to be no such thing as a technological solution to complex social problems—problems with roots that usually reach deep into the most basic formative influences on the structure of a society. In that sense, the effect of information technology on the fundamental structure of U.S. society as indicated by the digital divide between Americans who have and use computers or the internet and those who do not is of little consequence, and the divide itself is little different from any other material disparity within U.S. society. Though it is a good idea for many reasons, efforts to narrow the divide as a strategy for correcting long standing societal inequities should not be mistaken for a solution to the complicated underlying problems of poverty, cultural exclusion, unequal economic opportunity, evolving demographic upheaval, and others.

Information technology, including the internet, is but a tool, albeit a very potent one. It is at the disposal of those who must decide whether it will be used to promote social cohesion, or to further concentrate political and economic power under the control of one faction or the other within the nation of minorities that the United States may become. This is a decision that will not be based on the capabilities of technology so much as the capabilities of humans to constructively adapt to the new social, political, and economic realities of the twenty first century.



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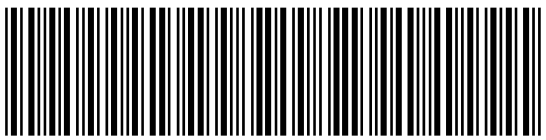

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