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BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D. C. 20268-0001

COMPLAINT OF TIME WARNER INC. ET AL.
CONCERNING PERIODICALS RATES Docket No. C2004-1

DIRECT TESTIMONY OF JOHN STEELE GORDON ON BEHALF OF TIME WARNER INC., CONDÉ NAST PUBLICATIONS, A DIVISION OF ADVANCE MAGAZINE PUBLISHERS INC., NEWSWEEK, INC., THE READER'S DIGEST ASSOCIATION, INC. AND TV GUIDE MAGAZINE GROUP, INC. CONCERNING COMMUNICATIONS IN THE TWENTIETH CENTURY

April 26, 2004

DIRECT TESTIMONY OF

JOHN STEELE GORDON

CONCERNING

COMMUNICATIONS IN THE TWENTIETH CENTURY

Biographical Sketch

John Steele Gordon was born in New York City in 1944 into a family long associated with the city and its financial community. Both his grandfathers held seats on the New York Stock Exchange. He was educated at Millbrook School and Vanderbilt University, graduating with a B.A. in history in 1966.

After college he worked as a production editor for Harper & Row (now HarperCollins) for six years before leaving to travel, driving a Land-Rover from New York to Tierra del Fuego, a nine-month journey of 39,000 miles. This resulted in his first book, *Overlanding*. Altogether he has driven through forty-seven countries on five continents.

After returning to New York he served on the staffs of Congressmen Herman Badillo and Robert Garcia. He has been a full-time writer for the last twenty years. His second book, *The Scarlet Woman of Wall Street,* a history of Wall Street in the 1860's, was published in 1988. His third book, *Hamilton's Blessing: the Extraordinary Life and Times of Our National Debt*, was published in 1997. *The Great Game: The Emergence of Wall Street as a World Power, 1653-2000*, was published by Scribner, a Simon and Schuster imprint, in November, 1999. A two-hour special based on *The Great Game* aired on CNBC on April 24th, 2000. His fourth book, a collection of his columns from *American Heritage* magazine, entitled *The Business of America*, was published in July, 2001, by Walker. His history of the laying of the Atlantic Cable, *A Thread Across the Ocean*, was published in June, 2002. His next book, *An Empire of Wealth: The Epic Story of American Economic*

Power, will be published by HarperCollins in October, 2004.

He specializes in business and financial history. He has had articles published in, among others, *Forbes*, *Forbes ASAP*, *Worth*, the *New York Times* and *The Wall Street Journal* Op-Ed pages, the *Washington Post*'s "Book World" and "Outlook." He is a contributing editor at American Heritage, where he has written the "Business of America" column since 1989.

In 1991 he traveled to Europe, Africa, North and South America, and Japan with the photographer Bruce Davidson for Schlumberger, Ltd., to create a photo essay called "Schlumberger People," for the company's annual report.

In 1992 he was the co-writer, with Timothy C. Forbes and Steve Forbes, of *Happily Ever After?*, a video produced by Forbes in honor of the seventy-fifth anniversary of the magazine.

He is a frequent commentator on *Marketplace*, the daily Public Radio business-news program heard on more than two hundred stations throughout the country. He has appeared on numerous other radio and television shows, including *New York: A Documentary Film* by Ric Burns, *Business Center* and *Squawk Box* on CNBC, and *The News Hour with Jim Lehrer* on PBS. He was a guest in 2001 on a live, two-hour edition of *Booknotes* with Brian Lamb on C-SPAN.

Mr. Gordon lives in North Salem, New York.

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Nothing so characterized twentieth-century America as technological progress. Humankind first lifted off the ground under power in 1903. Only sixty-six years later we landed on the moon. In 1954 no manmade object had reached more than 272 miles above the earth. Today, the space craft voyager II is more than six billion miles from earth and still returning data. In 1900 life expectancy was forty-five

years, in 2000 it was seventy-six years and climbing rapidly.

But no aspect of this vast and on-going technological revolution has been more dramatic than communications. To be sure, the nineteenth century had seen a great improvement in communications. In 1800, most communities were isolated from each other and even the most electrifying news traveled very slowly. The Battles of Lexington and Concord in Massachusetts, which marked the beginning of the American Revolution, occurred on April 19th, 1775, but the news reached New York only on the 23rd. Williamsburg, Virginia, didn't hear it until April 28th, and London learned of the battles only on May 28th.

Two technological developments changed matters profoundly. The invention of rotary presses powered by steam in the 1820's allowed many more newspapers and magazines to be quickly printed at much lower cost. Much reduced in price, they became the daily habit of millions. As early as 1866, only thirty years after the first modern newspaper, the *New York Herald*, began publication, the *North American Review* had noted that "The daily newspaper is one of those things which are rooted in the necessities of modern civilization. The steam engine is not more essential to us. The newspaper is that which connects each individual with the general life of mankind."

The other nineteenth-century development was the first practical use of electricity when in 1844 Samuel Morse tapped out the famous words "What hath God Wrought!" in the Capitol Building in Washington and his partner Alfred Vail, in Baltimore, repeated them.

The telegraph spread with lightning speed, often using the pathways forged by the equally fast-spreading railroads. Only seventeen years after the first telegraph message, a line reached all the way to San Francisco. Five years after that, Cyrus Field had succeeded in laying the Atlantic Cable and Europe came within reach of instant communication for the first time. By the time Morse died in

1872, a message that would have taken six months a few decades earlier could be sent from San Francisco to India in a few hours.

In 1876 Alexander Graham Bell invented the telephone, which, unlike the telegraph, did not require skilled operators at each end. The telephone quickly spread through the business districts of major cities. It became possible to call between New York and Chicago in 1892, and by 1915 it was possible to call across the continent.

But the telegraph and telephone remained very expensive. When the Atlantic Cable opened for business in 1866, the price was a dollar a word with a fifteen word minimum, well over a week's wage for the average worker. Domestic telegraphy, while cheaper, was beyond the reach of most families except for the most important messages. The telephone, more expensive still, was found only in the more affluent private houses until after World War I, when about thirty-five percent of households had private telephones. In 1919 a long-distance call from New York to San Francisco cost $16.50 for three minutes, more than $150 in today's money. It would be 1946 before half the households in the United States had a phone.

Despite the development of the telegraph and telephone, by the early years of the twentieth century, the situation had not changed much since 1866. It was still newspapers (none of which circulated nationally) and, especially, magazines that bound the nation together by providing a common culture and a common source of information.

And because of the printing technology then available, publications had to be produced in one place. The linotype had been invented in 1884 by Ottman Merganthaler. By setting one line, rather than one letter, at a time, it allowed much faster typesetting. But it was still a cumbersome process, and newspapers and magazines had to be printed from metal type.

Thus it made sense for the Congress, in formulating the Post Office's

mandate to hold this vast, sprawling country together by facilitating the distribution of printed matter, to set uniform postal rates for magazines, regardless of where they were printed or where they were sent, in 1876 and to maintain uniform rates for editorial matter when it zoned the rates for advertising matter in 1917.

But in the eighty-seven years since that decision, the technology of communications has changed more than it had in the previous eighty-seven. Indeed it has changed more than in the whole previous history of communications by means other than the human voice, a history that dates back to the dawn of the written word five thousand years ago.

The technology of printing, the oldest means of communication beyond the human voice and hand, has changed radically in the years since 1917. The teletypewriter, invented in 1913, came into widespread use in the years after the First World War. Attached to a linotype machine, it used a paper tape to control the composition, instead of linotype operators reading copy. A tape reader translated the punched code on the tape into electrical signals and these could be transmitted by wire to other linotype machines in other cities. For the first time this allowed newspapers to be printed in more than one city simultaneously.

Photo-composition machines dispensed with hot metal altogether and allowed type to be set by means of film, which was then used to make plates, from which the printing was done. As the cathode ray tube was developed for television, it was soon adapted for composing type. Coupled with a computer, the cathode ray tube allowed unprecedented ease in such matters as font selection, justification, and hyphenation–a great savings in labor.

Non-printing forms of communications technology advanced even more radically, introducing new means that were undreamed of in 1917. These new forms transformed the entertainment industry as well as the means by which the nation's politics are conducted. This, in turn, had profound effects on the printed

forms.

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The first major change in non-printing technology was the radio. Transmitting voice (and, of course, music) by wireless had become possible by World War I, but it was only in the immediate post-war years that the technology became popular with more than technophiles. The first broadcast service was inaugurated in Pittsburgh in the fall of 1920 and carried the results of the presidential election that year.

The new service was an immediate hit and radio stations began to spring up all over the country. In 1925 the first radio advertising appeared, and in 1926 the first networks began to evolve. These new networks quickly developed national programming, heard simultaneously across the country. By 1929 there were more than six hundred stations in operation, radio signals reached nearly the entire country (today there are more than 10,700 radio stations in the United States), and nearly forty percent of all American households had radio sets, which were being manufactured at the rate of more than four million a year. A whole new group of celebrities emerged, such as Jack Benny and Fred Allen. Programs such as “The Shadow” and “Amos and Andy” became wildly popular and attendance at movie theaters dropped significantly on the nights when they were on.

More important, the new radio networks allowed the government to communicate directly and immediately with the citizenry when necessary. President Franklin Roosevelt’s “fireside chats” began on Sunday, March 13th, 1933, only a week after his inauguration. The first one, urging the public to put its money back in banks once they began reopening the next day after the federal bank holiday, was listened to by millions, who accepted the President's assurances that the reopened banks would be safe. It proved a key moment in the nation’s recovery from the

Great Depression.

The technology of radio was quickly pushed further and a workable television system was in place by the end of the 1930's, using a 525-line picture with thirty pictures per second, which was adopted as the American standard. The Second World War, of course, put television on hold, but restrictions on manufacturing sets were removed in 1946 and television quickly took off, thanks to such talent as Milton Berle.

In 1948, both major parties held their conventions in Philadelphia. The reason for that was simple enough: it lay in the middle of the coaxial cable that made simultaneous transmission throughout the northeast possible. Although there were still fewer than a million television sets in the country, the medium was already affecting American politics. Within a few years it would become the dominant medium in politics, which it has remained ever since. The country passed the million-set mark in 1949 and had ten million by 1951. By the end of that decade, over fifty million sets were in use, nearly one per household.

As with radio, television proved a powerful medium for binding the nation together. On March 31st, 1957, 107 million Americans–nearly two-thirds of the entire population–watched the premier of *Cinderella*, a musical written expressly for television by Rodgers and Hammerstein. It was, by far, the largest audience in history up to that time to watch a single event. But, six years later, a far larger audience, nearly the entire country not necessarily engaged in other matters, would watch the funeral of the assassinated President John F. Kennedy, providing a deeply needed national catharsis.

Emerging space technology quickly made even larger audiences possible. Communications satellites began operations in 1962, which allowed transmission of live television between Europe and the United States. In 1965, geosynchronous satellites, which hover over the same spot on the earth, were launched. This made

possible continuous live television throughout the world. The global village, first predicted by the philosopher Marshall McLuhan in 1960 but actually in development as far back as the Atlantic Cable, was now at hand. Today Americans can, and do, watch a war unfold in their living rooms.

With the spread of cable television, and, later, such satellite TV distributors as Direct-TV, the number of channels available has mushroomed. In the 1960's, most Americans had a choice of no more than three channels. Today, most markets are served by well over a hundred channels. This makes it possible for small groups interested in a particular subject, such as cooking, travel, sports, pets, nature, politics, history, and technology to find that subject treated on television on a dedicated channel. This is strikingly similar to the function that in 1917 was performed only by specialty magazines.

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After World War II, a wholly new technology, quite undreamed of in the nineteenth century, began to develop, the computer. It has proved the most powerful invention at least since the steam engine two hundred years ago, perhaps since the development of agriculture ten thousand years ago. The first digital computer, called ENIAC for Electronic Numerical Integrator and Computer, was developed at the University of Pennsylvania in 1946, after three years of effort. With 18,000 vacuum tubes and miles of wire, it was the size of forty filing cabinets and was, by modern standards, glacially slow.

With the invention of the transistor in 1948, the size and cost of computers shrank quickly, and their use spread to many industries that had large data processing needs, such as banks and insurance companies. But they remained large, expensive and mysterious to the general public. Most people had never seen

a computer as late as 1970, because they were kept in special rooms, tended by men in white coats who spoke an arcane language.

The microprocessor changed everything. Essentially a computer on a chip of silicon, the microprocessor caused the cost of computing to plummet, along with the size of computers. Today the average American teenager has on his desk computing power that the Pentagon would have been hard pressed to afford forty years ago. Today computers are found, often many of them, in such devices as automobiles, television sets, telephones, wrist watches, and most household appliances. The world we live in today would not be possible without the microprocessor.

The computer greatly lowered the cost of such communications technologies as the telephone by taking over such functions as switchboards. The breakup of the monopoly on long distance service long held by AT&T, of course, also helped powerfully to lower prices. Fifty years ago, a long-distance call was expensive and people minimized their usage. Today they are so cheap that the government no longer even keeps statistics about how many are made. Many people today just play a flat monthly rate for all calls within the US and Canada.

The rise in international calls, where statistics are still kept, has been staggering. In 1950, about one million overseas calls originated in the United States. By 1970 the number was 23 million and a decade later over 200 million overseas calls originated in the United States. Today the number is over six billion calls and climbing rapidly.

Almost anyone can call whomever they please wherever they please whenever they please and not worry about the cost. And these calls can even be placed not just from home but from nearly anywhere. Half the people walking down the urban streets of America, it seems, are now on their cell phones. This is a situation almost unimaginable in the world of 1917, when fewer than thirty percent of

American households had any phone service at all.

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This revolution in non-printing communications media, coupled with the revolution in printing technology, has had large effects on how printed material is created and distributed. In 1917 newspapers and magazines had to be printed where the type was set. But beginning with the teletypewriter, it became possible to set type and print simultaneously in more than one place. In 1917, there were no national newspapers. Today, it is possible—indeed it is commonplace—to have, the *New York Times* or the *Wall Street Journal* delivered to your doorstep in all the country's major cities and their suburbs.

Composition by computer and the distribution of digital images by electronic means allows magazines as well to be printed simultaneously in different cities and distributed from them. This has caused a major reduction in the transportation component in the cost of distributing Periodicals class mail, from over forty-four percent to less than fifteen percent.

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But by far the most important communications medium to come out of the computer has not been improved telephony, but the Internet. It came into being as a result of the Cold War, when it was devised as a means of protecting communications against a nuclear strike. The hub-and-spoke model of telephone and telegraph networks were very vulnerable to being disrupted by an attack, for hitting the hub wiped out the whole network. So Paul Baran of the RAND Corporation suggested a "distributed network" with no hubs at all. Instead there

would be just an endless number of nodes, such as crossings in an urban street grid, that would allow traffic between computers to flow even if some of the pathways were blocked.

The ARPANET (for Advanced Research Projects, an agency set up by the Pentagon in the late 1950's) became operative in 1968, connecting a grand total of four computers, three in California and one in Utah. In the next fifteen years, a program for e-mail was devised, the TCP/IP program was written that allowed computers using different languages to "talk" with one another, and the domain name system was put in place, making it much easier for one computer to find another. By 1983 there were 563 computers on the net, mostly in universities, think tanks, and government agencies.

By 1990 there were 300,000 computers on the net and the number was doubling every three years. In 1992, an Englishman named Tim Berners-Lee created the first web browser and released it without copyright. This allowed users to search the web for sites dedicated to different subjects. The Internet was now complete and the world changed. Over seventy million American households (and uncountable millions of households around the world) are now connected by the Internet.

Almost forty million Americans now have high-speed access. This makes it possible to download complex material, such as photographs and even movies, in very little time. Thus magazines that could once only be delivered by mail, can now be delivered electronically at very little cost.

In the last ten years, the Internet, in addition to being a rapidly growing avenue of commerce that is remaking the business world has become a communications medium of unprecedented power. E-mail is now indispensable to the operation of major corporations and ordinary households alike. Newsgroups, loose associations of people interested in a common subject united by e-mail, now

number more than twenty-five thousand and are growing at the rate of several hundred a month. Weblogs ("blogs") now number in the tens of thousands, allowing people to become part of the public discussion of news events. Some, such as www.Andrewsullivan.com and www.overlawyered.com have become powerful voices. Other blogs function as letters-to-the-editor columns, only not under the control of the editors, exposing biases and sins of both commission and omission in major newspapers and magazines.

For the first time since the 1830's, it has become cheap to enter the news business. All one needs is a personal computer, an Internet Service Provider, and a webpage design. Some blogs have broken major news. The Drudge Report was the first to bring the Monica Lewinsky scandal, perhaps the biggest story to come out of Washington in the 1990's, to public attention.

Thanks to the Internet, the communications industry is in a state of flux it has not seen since the dawn of the industrial age made modern newspapers and magazines possible, perhaps since Gutenberg invented moveable type more than five hundred years ago.

But while we cannot see how this will all play out in the next few decades, we can know that the changes will be profound, affecting all forms of modern media.

* * *

With the addition of Hawaii and Alaska, the United States, geographically, is far larger and more far-flung than it was in 1917. But in a different sense it is far, far smaller. In 1917 it took three and a half days to travel from New York to Los Angeles. Today it takes five hours and at far lower cost. In 1917, a phone call to San Francisco cost nearly a week's wages for the average household. Today it is essentially free. In 1917, while news could reach across the country in seconds,

images of great events could take days. Today, great events are broadcast live on dozens of TV channels. In 1917, people interested in an obscure topic had to rely on letters or small, expensive journals to communicate with others of similar interest. Today, no matter how obscure or arcane the topic, there is an Internet newsgroup devoted to it and everyone interested can learn of new developments in seconds.

Today the United States is tightly bound together by many forms of communications, many of them undreamed of in 1917. The United States, the third largest nation in the world in terms of geography, has become one vast neighborhood, where everyone can be “talked” to across the back fence. There is no longer the slightest chance that setting postal rates for editorial content in Periodicals class mail by zones to reflect actual costs would cause the country to be divided by these zones. That is a concern that belongs to an age long past.

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon all participants of record in this proceeding in accordance with § 12 of the rules of practice.

s/
Timothy L. Keegan

April 26, 2004
Washington, D.C.