Part I

Freedom of the Press in the Information Age

We should note the force, effect, and consequences of inventions which are nowhere more conspicuous than those three which were unknown to the ancients, namely, printing, gunpowder, and the compass. For these three have changed the appearance and state of the whole world . . .

—Francis Bacon, Novum Organum, Aphorism 129*

Networked computers will be the printing presses of the twenty-first century. If they are not free of public control, the continued application of constitutional immunities to the nonelectronic [press] . . . may become no more than a quaint archaism, a sort of Hyde Park Corner where a few eccentrics can gather while the major policy debates take place elsewhere.

–Ithiel de Sola Pool, Technologies *of Freedom (1983)*

*As quoted in Elizabeth L. Eisenstein, *Printing Press as* an *Agent of Change* (Cambridge, MA: Cambridge University Press, 1979), vol. 1, p. 43.

Chapter 1

New Technologies for Gathering News and Information

Despite its origins in the context of printing, "freedom of the press" has come to be interpreted as protecting communication to the public generally, regardless of the medium. Print media, motion pictures, broadcasting, cable television, and even the mails have come to be considered as the "press" for purposes of the First Amendment. As the Supreme Court has said, "[press] comprehends every sort of publication which affords a vehicle of information and opinion."[1] Moreover, while some have argued that freedom of the press was only intended to shield the dissemination of news and opinion, the protections of the First Amendment have been extended to protect scientific, literary, and artistic messages as well. It is this broad notion of the press as a vehicle for every kind of public expression that is used in this report.

The printing press provided, for the first time, a capability for mass communication, whereby one individual or organization could inform, entertain, or persuade many others. At the time the Constitution was written, publishing in the United States had not yet become the "mass medium" it is today.[2] A craftsman printer produced one page at a time, and could produce about 2000 copies of it in a 10-hour day. The technology was inherently egalitarian; it took neither political power nor large sums of money for an individual to publish a work. The "freedom of the press" had a more or less literal meaning; government was prohibited from licensing or otherwise controlling the use of the technology.[3]

In the two centuries that have passed since the ratification of the First Amendment, innovations in technology have added to the variety and power of the press, and have, as a consequence, changed the social, economic, and political impact that the press has had.[4] Thanks in large measure to technologies such as the communications satellite, for example, global television is now a reality; over 500 million people watched the moon landing in 1969, and over 2 billion may have seen the Los Angeles Olympics in 1984.[5]

Changes to the legal environment in which the press operates have accompanied these technological changes.[6] "Freedom of the

[1] *Lovell v. Griffin*, 303 U.S. 444, 452 (1938).

[2] The press as a mass medium awaited the industrial revolution; with its steam-driven power (and later rotary) presses, which increased production tenfold, and its new modes of distribution, its assembly line methods, and division of entrepreneurial functions. Ithiel de Sola Pool, *Technologies of Freedom* (Cambridge, MA: Belknap Press, 1983). (Hereafter referred to as *Technologies of Freedom)* and *Encyclopedia Britannica, "Publishing*, 1986.

[3] The importance of this concept must be understood in the context of the English law that preceded it, which granted the Stationers Company monopoly rights over printing and required government licensing to own and operate a printing press. Even after the ratification of the First Amendment in America in 1791, however, the exercise of this freedom could be *severely* curtailed and punished.

[4] The new capability for rapid, accurate, and mass publication provided by the printing press facilitated the speed with which the Protestant Reformation spread through Europe: "heralded on all sides as a 'peaceful art,' Gutenberg's invention probably contributed more to destroying Christian concord and inflaming religious warfare than any of the so-called arts of war ever did." *Printing Press* as an *Agent of Change* (Cambridge, MA: Cambridge University Press, 1979), p. 319. Four centuries later, with live coverage of the civil rights movement in the American south, and riots in the north, east, and west, radio and television thrust the issue of racial equality before the American public in the 1960s. Television has also been credited with a major role in ending the United States' involvement in the Vietnam War. Michael Mandelbaum, "Vietnam: The Television War," Daedalus, fall 1982, p. 157.

[5] Joseph Pelton, "The Technological Environment," *Toward a Law of Global Communications Networks*, Anne Branscomb (cd.), by the Science and Technology Section of the American Bar Association (New York: Longman, 1986), pp. 37, 43.

[6] The inherent differences in the technology of print and that of broadcast, for example, led the Supreme Court to uphold the FCC's regulation of "indecent" speech over broadcasting, because of broadcasting's "uniquely pervasive presence on the lives of all Americans," and the fact that "prior warnings cannot completely protect the listener or viewer from unexpected program content," *FCC v. Pacifica Foundation, 438* U.S. *726*, reh. denied, 439 U.S. 883 (1978).

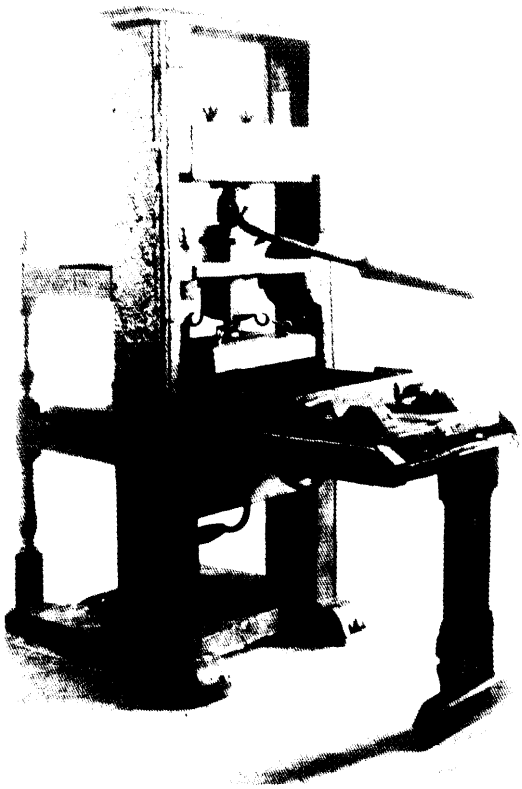

Photo credit: Smithsonian Institution, Photo No. 17539B

Franklin Press

Photo credit: National Aeronautics and Space Administration

Communications satellite SBS-3 being deployed from Space Shuttle Columbia

Today communication satellites distribute staggering amounts of information over thousands of miles in a fraction of the time needed for Ben Franklin's press to print one page.

press" has been extended to all forms of publishing, but real or perceived limitations on the technology-most notably, in the case of broadcasting-have nevertheless resulted in a patchwork of exceptions to the freedoms originally granted the printing press.

However, even broadcasting, with its national and now global audience, and its compelling use of images from all over the world, did not change the "one-to-many" nature of journalism that has characterized the press since the first era of printing. Although the number of broadcast organizations now far exceeds that of newspapers, legal and economic barriers to entering and successfully competing as a broadcaster have perpetuated this one-to-many character.

New technologies will not only augment the capabilities of the press they may give rise to new forms of press, alien to the last 200 years of First Amendment jurisprudence.

Observers argue that we are now entering an era that is variously referred to as an information age, an information society, or a post-industrial economy. These phrases conjure images of new technologies-high-speed computers, global communications networks, "in-

elligent" machines, and low-cost storage media of astonishing capacity. But, more important for present purposes is what these technologies mean for the structure of communications, and consequently, for the way in which the press gathers and publishes information. In changing the way in which information is produced and disseminated, technology may change who and what is considered the press. " New technologies will not only augment the capabilities of the press as we know it today, they may give rise to new forms of press, alien to the last 200 years of First Amendment jurisprudence.

Taken together, current and anticipated advances in technology suggest a fundamental shift from the concept of "press" to the concept of "network. To some extent, the past mode of one organization publishing for many may give way to a *communications* mode in which many share knowledge among themselves. One-to-many publication will no doubt continue, but will be joined by new and unfamiliar forms. Gathering, editing, and disseminating news and information, which today is commonly integrated in one organization, may eventually be fragmented between many specialized entities. The electronic publisher of the future may act more as a clearinghouse for the exchange of news and information than as a gatherer. Global electronic networks may eventually allow the gathering, writing, filming, editing, and publishing of news to be decentralized among many organizations, which may sell one another specialized services.

One-to-many publishing will also coexist with one-to-one publishing, such as electronic mail, and many-to-many publishing, such as computer conferencing. Each of these permutations may merge into the other under given circumstances—what started out as an electronic mail message may be integrated into a broadcast, which individuals may then store in a database, to be redistributed in different forms to different audiences. Specialized, individualized reports may be generated by one organization for a few subscribers or patrons, and distributed over electronic mail. Pieces of one message may be integrated into a whole and distributed to an audience larger or smaller than the original.

New forms of publishing will grow up alongside the "mass" communication that we are familiar with today. Individuals will be able to select the subject matter of the information they receive, and determine its format and manner of presentation. This processing may be done by consumers at intelligent terminals in their home or business, or it may be done further "up the line, " by the local telephone or cable company.

As a consequence of this shift from a centralized press with a uniform product to a decentralized network selling diverse services, the courts and Congress may face new questions of constitutional interpretation not presented when the press was a more or less distinct, identifiable institution. Even today, with the convergence of information processing with telecommunications, questions of categorization for purposes of the First Amendment–beyond those of common carrier, broadcaster, and print publisher-are emerging.

Like the **underground press that flourished** in the 1960s, **the electronic** underground press may become the crucible of cultural change.

Technology will further challenge distinctions between the freedoms of speech and press, "nonmedia" and "media" that were already difficult to make. Whether there is a difference between First Amendment rights of speech and press is a matter of disagreement among scholars,[7] but practical consequences

[7] Scholars disagree over whether the distinction between the freedom of speech and the freedom of the press is of constitutional or legal significance. Former Supreme Court Justice Potter Stewart, for example, adheres to the view that freedom of speech, worship, assembly, and other liberties guaranteed by the Bill of Rights are substantive and individual in nature, while the freedom of the press is ' 'structural, and extends freedom of expression to an institution. "The publishing business is, in short, the only organized private business that is given explicit constitutional protection. Potter Stewart, "Or of the Press, "

flow from it. Many of our 20th century assumptions about freedom of the press depend on notions of the press as a business, located in a community, dependent on the support of readers and viewers, committed to a regular cycle of publication and broadcast, managed by responsible persons, and striving—to some degree-for objectivity, balance, and a fair presentation of the facts. What if those elements change?

The Colonial press was characterized by irregular appearance, pseudonymous invective, and a boisterous lack of respect for any form of government. Modern, high-technology international versions of this may flourish in parallel with the established press. New interactive communications technologies can make producing and disseminating underground "newspapers' as economical as a phone call, and as egalitarian as a New England town meeting. Like the underground press that flourished in the decades before and after the First World War, and again in the 1960s, the electronic underground press may become the crucible of cultural change.[8] The first simple experiments of this sort are already underway on many computer bulletin boards.

New questions of liability and potential for harm will also be raised. Distinctions between primary publishers, secondary publishers, and republishers-which served to allocate responsibility for defamatory publications-will be more difficult to make.[9] Locating the "source" of inaccurate or false information that causes harm may prove elusive on electronic networks. The press' use of remote sensing systems

Limitations on the liberty of the press may come from a failure to reconcile private ownership interests in the physical media with public interest in the message carried over these media.

aboard orbital satellites, or "mediasats," together with an unprecedented ability to search, store, and process large amounts of information on individuals may give rise to new concerns over the ongoing conflict between privacy and freedom of the press.

The continuing debate over the deleterious effects of barriers to entry on the diversity of news and information available, and the role of government in mitigating them, will intensify. The assumption of Classical Liberalism that the principal threat to individual liberty is from large public organizations-such as the Federal Government-may no longer hold. Instead, limitations on the liberty of the press may come from a failure to reconcile private ownership interests in the physical media with public interest in the message carried over these media.

Courts and First Amendment scholars have developed a variety of ways of classifying and organizing the functions of the press for purposes of analyzing First Amendment issues.[1]

26 Hastings *Law Journal* 631 (1975). Former Chief Justice Burger disagrees, arguing that "the First Amendment does not 'belong' to any definable category of persons or entities: it belongs to all who exercise its freedoms. " *First National Bank of Boston v. Bellotti*, 435 U.S. 765, (1978), Burger, J. concurring.

[8]The "cultural revolution" of the 1960s found expression and momentum in a thriving underground press-' '[o]nly on the pages of the underground press, with its melange of stories, articles, events, hunches, graphics, fantasies, exposés and theories can one find the Movement. Laurence Learner, *The Paper Revolutionaries: The Rise of the Underground Press (New* York: Simon & Shuster, 1972) p. 14.

[9]W Keeton, D. Dobbs, R. Keeton, and D. Owen, *Prosser and Keeton on Torts* (St. Paul, MN: West Publishing Company, 1984), pp. 799-811.

[10]For purposes of assessing the press' regulatory status an shielding from Liability under the First Amendment, a distinction is commonly made between the press as printed medium as broadcaster, and as common carriers (which are not considered press). OTA Workshop on "The Future of the Press and the First Amendment," Mar, 26, 1987, Washington, DC. See also: Richard Neustadt, *The Birth of Electronic Publishing* (White Plains, NY: Knowledge Industry Publications, Inc. 1982); and Lynn Becker "Electronic Publishing: First Amendment Issues in the Twenty First Century, " 13 *Fordham Urban Law Journal 801 (1984).* With regard to defamation, one textbook organizes constitutional privileges around notions of the press as the originator of speech, as commentator, or as repeater Marc Franklin, *Cases and Materials on Mass Media Law* (Mineola, NY: Foundation Press, Inc., 1987), In analyzing First Amendment tensions between rights of access and exclusion another author distinguishes between the press as editor (making decisions about the content of messages, which decisions are protected by the First Amendment) and the press as owner (making decisions about the use of the medium, which decisions are protected by the Fifth Amendment). Mark Nadel, "A Unified Theory of the First Amendment: Divorcing the Medium from the Message, " 11 *Fordham Urban Law Journal 163 (1983).*

Familiar constitutional issues—pitting freedom of the press against privacy rights and national security interests —will be placed in unfamiliar contexts.

Because this report is concerned with the impact of technological innovation on the press, however, press functions will be organized along lines that reflect more or less discrete types of capabilities offered by new technologies. These capabilities and press functions can be most usefully grouped as follows:

- New technologies for gathering news and information: databases and satellites
- New technologies for editing news and information: electronic publishing
- New technologies for publishing and disseminating news and information: the convergence of computers and communications.

The rest of this chapter will deal with the first of these broad topics; new technologies for editing and publishing are covered in chapters 2 and 3 respectively.

NEWSGATHERING

In order to publish news and information, he press must have an ability to gather it in he first place. The Supreme Court has yet to decide, however, whether newsgathering is itself a protected First Amendment activity, separate from speaking and publishing.[11] The Supreme Court said in *Branzburg v. Hayes* that "it is not suggested that news gathering does not qualify for First Amendment Protection; without some protection for seeking out the news, freedom of the press could be eviscerated.[12]. . ." However, the Court has declined to say that government has a positive duty to allow journalists special access to information. The press has access to government proceedings, records, or other information that is available to members of the public generally.[13] Presumably, the converse is also true; access denied to the general public may also be denied to the press,[14] but the government may not close down avenues for gathering and acquiring news that are generally available to the public, without a compelling reason.

Mediasat would supply a stream of timely information—peering where repressive governments or dangerous natural environments had formerly kept the press at bay.

Although the press may not, as a constitutional matter, have any greater rights to gather information than the general public, they may, as a practical matter, have a greater and more concerted ability to gather information than most individuals. In the coming years, technology will greatly amplify the information-gathering resources of the press. As a result, familiar constitutional issues–pitting freedom of the press against privacy rights and national security interests—will be placed in unfamiliar contexts. Technology is likely to blur distinctions between gathering information and publishing it, and the Court will eventually have to confront the question of whether the press

[11] *Branzburg v. Hayes*, 408 U.S. 665 (1972)

[12] Ibid., p. 681.

[13] *"Pen v. Procunier, 417* U.S. 817 (1974); *Saxbe v. Washington Post Co., 417* U.S. 843 (1974); cf., *Houchins v. KQED, 438* U.S. 1 (1978). See also, Rita Ann Reimer, *Legal and Constitutional Issues Involved in Mediasat Activities* (Washington, DC: Congressional Research Service, The Library of Congress, 1987), Report No. 86-823A, pp. 6-8.

[14] When, in 1983, the United States invaded Grenada, the government imposed a total news blackout and prohibited members of the public and the press from traveling to Grenada. The press sought prospectively to enjoin the Executive from imposing any such future ban. The case was dismissed as moot, but the court went on to say that "[the] decision whether or not to impose a press ban during military operations and the nature and extent of such a ban if imposed are matters that necessarily must be left to the discretion of the commander in the field." *Flynt v. Weinberger, 588* F. Supp. 57,61 (D.D.C. 1984), affirmed (on the basis of mootness), 762 F.2d 134 (D.C. Cir. 1985).

interests in gathering news merit constitutional protection under the First Amendment. Among the new tools that the press will have at its disposal for gathering information are computer databases and remote sensing satellites. The use of these technologies may raise a number of constitutional questions concerning, for example, individual privacy rights, national security, and the expungement of records.

COMPUTER DATABASES

Databases are records of information stored in machine readable form, and are typically accessible by personal computer over packet-switched data networks (e.g., Telenet, Tymnet, or a variety of privately owned communications networks). Information in electronic databases is usually searched and retrieved by software provided by the vendor of the database service.

For purposes of this report, the concept of computer databases is kept separate from that of electronic publishing, which is discussed in chapter 3. In reality, database vendors are, by definition, also electronic publishers, since they publish information in an electronic, machine-readable form. However, electronic publishing is a broader concept, which includes transactional services (i.e., banking and merchandising) and messaging services that are beyond those available from database vendors. Perhaps the distinction is easiest to make in the following way: database vendors provide information; electronic publishers provide information *services,* which may include database access. [15]

The database industry is growing at a rate of 15 to 18 percent a year. Total revenues were estimated to be $2.2 billion in 1986, and are projected to be more than $4.2 billion by 1990.[16] In 1986, there were 3,200 online database services available worldwide compared with 400 in 1979.[17]

In principle, anything that can be represented in digital form can be stored and retrieved from a database. Today, this includes the full text of newspapers, magazines, journals, and publications from any major scientific or professional discipline. In the future, computer software, motion or still pictures, and high fidelity music and voice will be stored on computer and shipped over telephone or cable television lines. Existing database services are categorized as bibliographic and abstractive (e.g. the Library of Congress' SCORPIO); full text (e.g. Mead Data Central's LEXIS); or numeric (e.g. Data Resources, Inc. 's DRI-Securities and Exchange, Current Economic Indicators, Bank Analysis Service, and Financial and Credit Statistics).[18]

Optical disk storage (principally, Compact Disk Read-Only-Memory, or CD-ROM), with its extremely high capacity, low cost, and durability, is likely to change both the economics of online databases, and the type of information sought on them. Optical disks offer much more powerful searching software, and avoid rising telecommunications costs. In the future,

[15] Terminology for these new forms of publishing is still unsettled. In the "Huber Report," the author distinguishes between *"information service providers,"* who offer call and network management services, timeshared computing, access and retrieval systems, messaging systems, and transactional services, and "computerized databases and electronic *publishers,* who offer retrieval of documents, data and text from magnetic or other storage media. *The Geodesic Network: 1987 Report on Competition in the Telephone Industry,* prepared by Peter Huber as a consultant to the Department of Justice, Antitrust Division, January 1987, chs. 6 and 7. Other authors make the distinction between *online databases* and ***videotex***. *See, e.g.,* Hugh E. Look, *Electronic Publishing—A Snapshot of the Early 1980s* (Oxford, England: Learned Information, 1983).

[16] *Online Database Systems Market in the U.S. (#1517),* Frost and Sullivan, Inc. 1986, as quoted in *Information Hotline* vol. 19, No. 2, February 1987, p. 3.

[17] From Information Industry Association estimates.

[18] This taxonomy was put forth by Martha Williams, ' 'Electronic Databases," *Science,* vol. 228, Apr. 26, 1985, pp. 445-456.

news organizations might make extensive use of optical disks instead of the online services employed in the past. [19]

Today, there are many "gateway" services, in which one database vendor sells the information services of another. A possible scenario for the future database industry is the emergence of a "meta-library" or "virtual database," which would interconnect many or all of the now separate database services. Such a system might allow a user to enter a query in everyday English on any given subject, conduct a search for the location of the information, and retrieve it. Achieving this goal depends on, among other things, considerable technical progress on computer memory, transmission, and processing speeds; advances in computer software; and the development of standards controlling how computers and networks "talk' to one another. Current technological trends suggest that this scenario is obtainable.[20] Much depends on the establishment of standards.[21]

Databases–whether online or on disk–are powerful tools for the press. Researching stories, investigating the background of subjects and sources, corroborating information, drawing out latent connections between people and events, and constructing "mosaics" of information from disparate sources, will all become more practicable, and in some cases, possible for the first time.

It is safe to say that, by the end of this decade, every recent news story, news picture, wire service report, and major press release will be commercially searchable from the reporter's workstation, subject only to the cost his newspaper is willing to incur. The press will have a long and comprehensive memory.

[19] *Optical/Electronic Publishing Directory 1986,* Learned Information. Online databases are likely to remain valuable for time-sensitive, transient information, while CD-ROM will be favored for archival information. See also, Bradford Dixon, "The Impact of CD-ROM on On-Line Data Bases, *CD-ROM Review*, vol. 1, October 1986, p. 52.

[20] Great progress is being made in the ability to transmit large quantities of information very rapidly. INTELSAT satellites can now transmit the equivalent of 20 copies of the *Encyclopedia Britannica every* minute. J. Pelton, M. Perras, and A. Sinha, *INTELSAT, The Global Telecommunications Network* (Honolulu, HI: Pacific Telecommunications Conference, 1983), p. 17. Depending on bandwith required, fiber optic communication cables can now transmit the entire contents of a CD-ROM disk–the equivalent of 200,000 pages of text–in about 1 second. Science *and Technology in Japan*, October-December 1986, p. 8.

[21] These standards concern the way in which information and instructions are communicated to and within a network. The FCC, in its Computer Inquiry III, Phase I Decision, mandated the adoption of an "Open Network Architecture" standard, with the goal of facilitating a total free market in telecommunications and information services. See: A.M. Rutkowski, "Open Network Architectures: An Introduction," *Telecommunications*, February 1987, p. 29. Voluntary communications standards, called Open Systems Interconnect, have already been established by the International Standards Organization.

MEDIA SATELLITES'*

The news media are increasing the use of satellite imagery in reporting world events. This leads some to believe that the press will soon wish to own and operate their own remote sensing systems dedicated to newsgathering—

[22] The issues concerning media satellites are examined in depth in U.S. Congress, Office of Technology Assessment, *Commercial Newsgathering From Space—A Technical Memorandum*, OTA-TM-ISC-40 (Washington, DC: United States Government Printing Office, May 1987). This section draws solely on the analysis of that publication, hereafter referred to as *Newsgathering from Space,*

termed "mediasat." Mediasat would supply a stream of timely information—peering where repressive governments or dangerous natural environments had formerly kept the press at bay.

Many nations will have their own remote **sensing systems within a decade, and the press might purchase data from, or invest in, these foreign systems.**

Today's press obtains data from two remote sensing systems, EOSAT—formerly the U.S. Government Landsat system–and SPOT, a French system.[23] Neither of these systems, however, is particularly well suited to the needs of the press; the resolution of these sensors may be too low (EOSAT yields a maximum of 30 meters resolution, and SPOT a maximum of 10)[24] and their coverage of a given point on the Earth too infrequent for them to be a timely, valuable, and reliable source of information for the press. In addition, the press' access to data cannot be assured because the satellites' owners currently depend on ground stations owned by other countries to collect certain data. It is likely, therefore, that the press would require a dedicated mediasat system to meet their needs.

[23] EOSAT (Earth Observation Satellite Co.) is a private company which now handles the operation and marketing of data for Landsat, which was formerly owned by NASA. For a history of the transfer of the Landsat system to the private sector, see: U.S. Congress, Office of Technology Assessment, *Remote Sensing and the Private Sector: Issues for Discussion—A Technical Memorandum, OTA-TM-ISC-20* (Springfield, VA: National Technical Information Service, March 1984). SPOT (System Probatoire d 'Observation de le Terre) is a French company responsible for marketing the data from the satellite owned by the Government of France.

[24] The greater the resolution of the sensing system, the more detail that can be discerned. The SPOT system, for example, allows one to see individual buildings and highways.

To be effective, a mediasat would need more than high resolution; it must also be able to sense news wherever and whenever it occurs and to transmit the news rapidly to the news agency. A mediasat system would need at least two satellites to ensure same day coverage of events around the globe. In order to receive data in near-real-time, a mediasat system would need to have access to ground stations all over the earth and use on-board tape recorders.

Satellite and database technologies may change the very meaning of "public" and "private."

Although the technology is available to create such a system, including very high resolution technology, the high cost and currently low demand for remotely sensed data will limit media efforts to own and operate a dedicated remote sensing satellite system. Moreover, the value of satellite imagery to the press is uncertain, and is likely to remain so until experience and a more robust remote sensing market combine to define a stable demand for these data. preliminary calculations indicate that the costs of a mediasat system might exceed its expected revenues.

Notwithstanding the considerable barriers to implementing a mediasat system, it may at some point in the future become a viable concept. The press might form a consortium to share the cost of a mediasat system, or it might resell the data collected by mediasat to subsidize its own use, or it may wait until technical advances reduce the cost of sensors, satellites, and launch vehicles. Moreover, many nations will have their own remote sensing systems within a decade, and the press might purchase data from, or invest in, these foreign systems.

IMPLICATIONS FOR PRIVACY

When the press gathers and publishes information about a person, or uses such information as source material, there is a potential for conflict between the individual's common law

right of privacy and the right of the press to gather and publish news and information. Databases store many pieces of personal information, and permit the creation of larger mosaic pictures of the individual from these pieces. Satellites allow information to be obtained without individuals' knowledge, and without physical intrusion or proximity. Because of the way in which these technologies enhance the newsgathering ability of the press, they create a potential for conflict between privacy and the First Amendment.

> Until recently one of the best barricades against breach of privacy was the difficulty and impracticability of integrating all of the public data about a person.

It was in fact the press, and reactions to the press, that first precipitated legal recognition of an individual right to privacy. [25] Privacy is a word that embraces a number of separate but similar values. It has been variously defined as "the right to control information about oneself; "[26] " the claim of individuals, groups or institutions to determine for themselves when, how and to what extent information about them is communicated to others;"[27] or simply, "the right to be let alone."[28] Although State statutes have recognized a panoply of privacy interests, the concept of privacy developed as common law is most often asserted against the press. [29]

Satellite and database technologies may change the very meaning of "public" and "private." As remote sensing satellites become more sophisticated, for example, it is possible that the average person's expectation of privacy could be eroded. Satellites are currently capable of spotting certain crimes, such as violations of environmental control laws. Eventually, satellites may be able to perform other functions, such as identifying and locating marijuana fields, or determining the inventories of manufacturers. In the far future, satellites may be able to monitor the activities of individuals.

Under current law, a person is protected against publicity given to facts about his or her private life. Although hard to define, the protections afforded by this right to privacy are clearly reduced when a person appears in public.[30] Mediasat could alter the current understanding of what the law regards as "appearing in public. " Recently in *California v. Ciraolo,*[31] the Supreme Court decided that aerial reconnaissance was an acceptable law enforcement technique and that activities taking place in the defendant backyard were in "plain view, " even though they were surrounded by a 10-foot-high fence. Applying *Ciarolo's logic* broadly, one could argue that citizen's have no right of privacy for any activity that might be seen from an airplane or satellite.

Computer databases may also change the meaning and expectations of privacy, The press may take advantage of the storage, re-

[25] The seminal article by Louis D. Brandeis and Samuel Warren, "The Right to Privacy, "4 *Harvard Law Review* 193(1890), which structured subsequent debate, litigation, and legislation on privacy in the United States, was a reaction to the editorial practices of the Boston newspapers: "The press is overstepping in every direction the obvious bounds of propriety and decency . . . To occupy the indolent, column upon column is filled with idle gossip. which can only be procured by intrusion into the domestic circle. ., ," When the Warren/Brandeis theory of privacy was rejected in the first major case to consider it, *Roberson v. Rochester Folding Box* [o., 171 N.Y. 538, 64 N.E. 442 (1902), the New York legislature reacted by creating a statutory right of privacy. New York Civil Rights Law, §§ 50 and51,

[26] This definition forms the basis for the Privacy Act of 1974, Public Law 93-579, 5 (J. S. C', §552(a).

[27] Alan West in, *Privacy and Freedom* (New York: Atheneum, 1967), p. 39.

[28] Brandeis and Warren. op cit

[29] Common law invasion of privacy is subdivided into four separately actionable torts: intrusion, disclosure, false light, and appropriation, William I.. Presser, " Privacy," 48 *California Law Review*, 383 *(1 960).* Of particular concern for the present discussion is the tort of 'public disclosure of private facts, which requires that the information made public by the press be in fact private, that the disclosure be highly offensive t oareasonable person, and that the subject matter of the disclosure not be of legitimate concern to the public.

[30] Hanson, *libel and Related Torts*, §260 (1969).

[31] 106 S. Ct. 1809 (1986). *Ciraolo* was a criminal case involving a warrantless search. As such, its reasoning may not be directly applicable to civil suits for invasion of privacy.

trieval, and processing capabilities of modem computer technology to construct comprehensive pictures of an individual from a myriad of transactional details-much as a mosaic painting is constructed from smaller pieces of no artistic significance in and of themselves. This capability was not practical in the world of print, where storing, retrieving and collating a mass of trivial detail was inefficient and wasteful, even when possible. Computer databases permit one person to fabricate whole new bodies of knowledge out of heretofore unconnected pieces of information. Much of the information about an individual's life is not, when taken in isolation, intimate or confidential. Purchasing merchandise at a department store, traveling on holiday, visiting the doctor, joining an association, reading a newspaper—these activities are often done in the open, and are available to anyone who cares to watch.

Although the press may, in certain instances, be liable for the collection or publication of personal information, this liability may conflict with the freedom of the press, especially when the information collected is available through public sources. In Cox Broadcasting *Corp. v. Cohn*,[32] the Supreme Court struck down a Georgia statute that barred publication of the names of rape victims. Although the Court recognized that "there *is* a zone of privacy surrounding every individual, a zone within which the State may protect him from intrusion by the press," it said that State may not censor "judicial records which are maintained in connection with a public prosecution and which themselves are open to public inspection."[33] The Court limited its ruling to court records,[34] but also said that:

> Public records by their very nature are of interest to those concerned with the administration of government, and a public benefit is performed by the reporting of the true contents of the records by the media. The freedom of the press to publish that information appears to us to be of critical importance to our type of government in which the citizenry is the final judge of the proper conduct of public business.[35]

Whether this First Amendment right of the press to publish court records also applies to other public records and publicly available information in general remains to be determined.[36] The problem has not been of widespread concern, in part because until recently one of the best barricades against breach of privacy was the difficulty and impracticability of integrating all of the public data about a person. Records such as arrest and prosecution data, credit status, purchases, mortgages and property records, hospital admissions, travel information, associational behavior, banking activity, and previous appearances in newspapers or on television were either uneconomical to keep for long periods of time, inaccessibly "buried" with thousands of other records, geographically dispersed, or not cross-referenced.[37]

The conflict between privacy and press freedoms may be most acute in cases where the government acts on behalf of the individual's privacy to foreclose the revelation of information that is normally public. In the case of sat-

[32] 420 U.S. 469 (1975).

[33] Ibid.

[34] The Court declined to decide the more general question whether "the State may ever define and protect an area of privacy free from unwanted publicity in the press," and instead focused on the narrower question concerning publicly available judicial records.

[35] 420 U.S. 469 (1975) at 32.

[36] In *Virgil v. Time, Inc.*, 527 F.2d 1122 (9th Cir. 1975), cert. denied 425 U.S. 998 (1976), the Ninth Circuit Court rejected the notion that the press has a First Amendment right to publish all private facts that are publicly available (in this case, facts drawn from an interview of the plaintiff). Only if the facts are newsworthy or of legitimate public concern would the press' First Amendment defense obtain.

[37] The new power to aggregate information was illustrated last year when two prominent businessmen were competing publicly to buy a major U.S. newspaper company. An enterprising journalist ran a check on both their names in Mead Data Central's NEXIS database, and learned that one of them, who lived in Indiana, was married to the sister of the investment banker representing the target newspaper's interests. He also learned that the Indiana man had just returned from a weekend with his wife in Mexico City, where the competitor lived. The two men announced a few days later that they were joining forces to buy the newspaper together, leading the journalist to report that the businessmen were colluding, rather than competing. Christopher Bums, *"Freedom of the Press in the Information Age,"* OTA contract report, Apr. 21, 1987, p. 20.

State policy concerning the expungement of records on individuals maybe ineffectual, because it must yield to freedom of the press.

ellite surveillance, for example, government might forbid press acquisition of private or proprietary pictures through remote sensing. This would undoubtedly be assailed as a "prior restraint" on press freedoms. The doctrine of prior restraint[38] holds that advance limitations on protected speech may not be "predicated on surmise or conjecture that untoward consequences may result."[39] Constitutional issues concerning prior restraint arise most often where the government acts to protect national security.

The State or Federal Government may act on behalf of individuals' privacy rights in ways that conflict with press access to information held in public or private databases. Many States, for example, have "expungement statutes that apply to criminal or other records, which typically require that records be destroyed after a certain period of time, or when a defendant in a criminal case is acquitted. The theory behind the statutes is that an offender, once rehabilitated, deserves a chance to be free of his past and start anew.

If interactive electronic services are considered analogous to cable operators or newspapers, then they may, like cable and newspapers, claim First Amendment protection.

However, because more and more information is created or accessed in machine-readable form, and because the costs of storing it in that form are plummeting, newspaper morgues are growing in size and comprehensiveness. The question therefore arises whether the press will be required to expunge records that were once public and are now kept in its own files. Recent Supreme Court decisions suggest that no such requirement could be imposed on the press, especially if it carries a criminal penalty.[40] In some cases, State policy concerning the expungement of records on individuals may be ineffectual, because it must yield to freedom of the press."

When information is not only stored and accessed, but also *provided* by the press electronically, further complications ensue. In interactive electronic services which provide information and services to the home, the use of the service by the consumer/reader also generates information for the provider about reading, viewing, and consumption patterns. This information can in turn be used to target and tailor information, such as advertising, that is fed back to the consumer. According to one author:

> Every transaction which is executed, and every page of information or service which is delivered, will generate its own electronic (machine-readable) record. The return channel in an interactive system will perform double labor for the interactive services industry; not only will it facilitate consumer requests for services, and thereby stimulate consumption, it will also transmit back to industry much relevant information concerning the modalities of consumer demand and consumption. [42]

Early concerns about privacy pertaining to the collection and sale of transactional information generated by the electronic press were ad-

[38] A prior restraint *is* government censorship. Other forms of liability or punishment for speech are imposed after the harm caused by the speech has occurred. Prior restraint, in contrast, is a prohibition of speech or publication before it occurs. "Any system of prior restraints of expression comes to this Court bearing a heavy presumption against its constitutional validity." *Bantam* Books, *Inc. v. Sullivan*, 372 U.S. 58, 70 (1963); see also New *York Times Co. v. United* States, 403 U.S. 713 (1971), and Near *v.* Minnesota, 283 U.S. 697 (1931),

[39] *New York Times Co. v. United States, 403* U.S. 713 (1971), Justice Brennan concurring at 724.

[40] *See Landmark Communications v. Virginia. 435* U.S. 829 (1978); and *Smith v. Daily Mail Publishing Co., 443* U.S. 97 (1979).

[41] *Shifflet v. Thomson Newspapers, Inc., 431* N.E.2d1014,8 Med. L. Rptr. 1199 (1982).

[42] Kevin Wilson, "The Videotex Industry: Social Control and the Cybernetic Commodity of Home Networking," *Media, Culture, and Society*, vol. 8, 1986, pp. 7, 25. (Hereafter referred to as "Cybernetic Commodity.")

dressed in the Cable Communications Policy Act of 1984.[43] And, the Privacy Commission, whose recommendations were in large part adopted by Congress in the Privacy Act of 1974, suggested principles for the use of information gained through interactive electronic services. However, the Supreme Court has decided that individuals have no inherent legal interests in personal records owned by third parties."

But privacy may only be part of the problem. The use of interactive information systems to provide the press with a precise consumer stimulus/response mechanism suggests to some that "improved techniques of social management are on the technological horizon . . . creating a truly cybernetic[45] cycle of production and consumption."[46] The difference between such cybernetic control and the familiar television or newspaper advertisement may be simply a matter of the degree of precision and power that electronic systems provide. Moreover, a greater sensitivity to consumer preferences may be generally desirable. Limiting the cybernetic control of consumer preference is more likely to be a political decision than a judicial issue. However, a question could also arise as to whether the collection and feedback of information through interactive services in protected speech, and thus whether this "cybernetic cycle" is an activity protected by the First Amendment. If interactive electronic services are considered analogous to cable operators or newspapers, then they may, like cable and newspapers, claim First Amendment protection. What information to provide to which consumers may be a matter of editorial discretion protected by the First Amendment. [47]

[43] 47 U.S.C. §631.
[44] *U.S.* v. *Miller 425* U.S. 435 (1976).
[45] The term, "cybernetic, comes from control theory and refers to systems that are highly adaptive, responding to their environment by sensing changes and responding by altering the environment or their response or both. In this case, a cybernetic cycle is one in which the electronic media, by virtue of its individualized and rapid interaction, not only adapts itself to individual consumers wants, but also acts to influence those wants,
[46] "Cybernetic Commodity" at page 35. See also Deann Collingwood-Nash, and John Smith, *Interactive Home Medi and Privacy*, report prepared for the Office of Planning, U. S Federal Trade Commission, 1981.
[47] *Miami Herald v. Tornillo*, 418 U.S. 241 (1974).

IMPLICATIONS FOR NATIONAL SECURITY

Where the press seeks to gather information concerning national security, whether through satellite surveillance or computer databases, there is a potential for conflict between national security policies and the First Amendment. With satellite images, for example, the press could:

- disseminate information regarding U.S. military operations, thereby depriving U.S. troops of the critical element of surprise;
- reveal information considered sensitive by foreign governments, thereby prompting them to retaliate against U.S. Government activities, assets, or personnel;
- provide valuable intelligence to countries currently lacking their own reconnaissance satellites;

The Federal Government may attempt to limit access to or use of satellite imagery by the press.

- reveal facts about an unfolding crisis making it more difficult for government leaders to act calmly and responsibly; and
- misinterpret satellite data in such a ways as to precipitate a crisis.[48]

In response to these potentials, the Federal Government may attempt to limit access to or use of satellite imagery by the press. In the

[48] Taken from OTA, *,Vew'slathering From Space*, op. cit, p. 4.

case of a dedicated "Mediasat," it might do ɔ permanently, through the licensing procedres established in the 1984 Landsat Act,[49] or temporarily, during a crisis, by limiting the resolution of the satellite's sensors, the images the satellite is allowed to collect, or the images the press is allowed to disseminate. Any of these options may run afoul of the doctrine of prior restraint. Prior restraints are allowed only if necessary to prevent "direct, immediate, and irreparable damage to our Nation or ɜs people."[50] The outcome of such a challenge would turn on the exact nature of the Government limitations and the Supreme Court ultimate determination of the status of newsgathering under the Constitution.

Similar First Amendment difficulties may e encountered with attempts to suppress or limit access to information in computerized databases. The ability of electronic information systems to construct revealing mosaic pictres from many smaller pieces of information has many parallels to the situation underlying the case of *United States v. The Progressive, Inc.*[51] In that case, *The Progressive* magazine proposed to publish an article on 'The H-Bomb Secret: How We Got It, Why We're Telling It," which was derived entirely from public domain, unclassified sources. The Federal Government sought, and was granted, an injunction barring publication of the article under the Atomic Energy Act.[52] Notwithstanding the fact that the injunction constituted prior restraint--the most severe abrogation of First Amendment rights–and the fact that most of the research for the article was done in freely Accessible government libraries,[53] the court held that the various sources of information, "when *drawn together, synthesized and collated.* . . . acquires the character of presenting immediate, direct, and irreparable harm to the interests of the United States"[54] (emphasis added).

Although the *Progressive* case did not involve computer databases, the enhanced ability of computer systems to achieve the same "aggregation and synthesis" of unclassified materials was at the heart of a recent public debate concerning *National Security Decision Directive* 145 (NSDD-145).[55] The efficiency with which online databases can construct mosaic information was, in part, the rationale behind NSDD-145, which, among other things, established a' sensitive, but unclassified' category for information in government databases, and perhaps privately owned commercial databases as well.[56] NSDD-145's focus on electronic storage and retrieval systems recognized that databases store information that "even if unclassified in isolation, often can reveal highly classified and other sensitive information when taken in aggregate."[57]

The Federal Government proposed taking measures to protect sensitive information from hostile governments, including screening database entries, precluding the electronic publication of certain databases, providing database subscriber lists to the government, and/or limiting foreign subscriber access.[58] Some of these proposed measures may raise constitutional issues.[59]

[49]15 [J. S.C. §§420 1-4292.

[50]*New York Times Co. v. United States*, 403 U.S. 713 (1971), ustices Stewart and White, concurring

[51]467 F. Supp. 990 (W.D. Wisc. 1979). The *Progressive* case s discussed i n part 1. ch 2, of this report.

[52]68 stat. 919.42 U.S. **c. 2011-2296.**

See: Rita Ann Reimer, Legal *and Constit utional Issues Involved in Mediasat A ctivities* (Washington, 1)(': Congressional Research Service, The Library of Congress, 1987), Report No. 86-823 A, p 12

[54]467 F. Supp. 990, at 996.

NSDD-145, Sept. 17, 1984.

[56]As of January 1987, the status of NSDD-145 wit h respect to commercial databases had not been clarified. For a more detailed discussion of NSDD-145, and related executive and legislative actions, see part II, ch. 4 of this report,

[57]National Policy on Protection of Sensitive but (Unclassified Information in Federal Government Telecommunicate ions and Automated Information Systems, NTISSP No. 2, Oct. 29, 1986 (hereafter cited as ' 'National Policy' '). This perception was echoed in a CIA Report, *Soviet Acquisition of Militarily Significant Western Technology: An Update See* part 1, ch. 3 of this report,

[58]NASA has already implemented an access policy which restricts access with respect to foreigners, and members of the Air Force have visited several commercial database vendors asking for subscriber lists. See *Scientific Information.*

[59]For example, the Federal Government has a right to create conditions on access to, or publication of, governmentally funded information, so long as they do not conflict with the Freedom of Information Act., 5 U.S.C. §552(a). Moreover, as we have seen, the Supreme Court has not recognized a constitutional right of the press to *gather* information. so it is unlikely

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The Federal Government proposed taking measures to protect sensitive information from hostile governments, including screening database entries.

Prior restraint on commercial database publishers raises peculiar problems for the traditional theories under which prior restraint is permissible. Individual database entries do not necessarily pose a threat to national security that would justify restraining them. It is ostensibly the concatenation of individual database entries that raises national security concerns, but this concatenation may not be specifiable before a given database search. Yet judicial precedent with prior restraint has, without exception, concerned a single publication, the contents of which could be known ahead of time.

Prior restraint issues normally arise when the government seeks an injunction prohibiting publication. But, even alternative approaches to national security problems of database mosaics may pose constitutional issues. In the case of NSDD-145, for example, sensitive but unclassified information is defined as "information the disclosure, loss, misuse, alteration, or destruction of which could adversely affect national security or other Federal Government interests."[60] But database vendors may have little clue as to whether the data that they sell could "adversely affect national security" until it is conjoined with other data; the "sensitivity" of information in a database will depend on its combination with other information. Attempts to control disaggregated data may therefore run afoul of the "vagueness " doctrine, which is based on the due process clause of the 14th Amendment, and which requires that a statute "neither forbid nor require the doing of an act in terms so vague that men of common intelligence must necessarily guess at its meaning and differ as to its application."[61] Vague laws may also infringe upon the First Amendment rights of the press by "chilling" protected expression.

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that the press, as database *users,* would be able to assert a constitutional interest in access to sensitive information.

[60] From "Nat,ion~ Policy,„ Section U, Definition.
[61] *Zweiker v. Koota*, 389 U.S. 241 (1967).