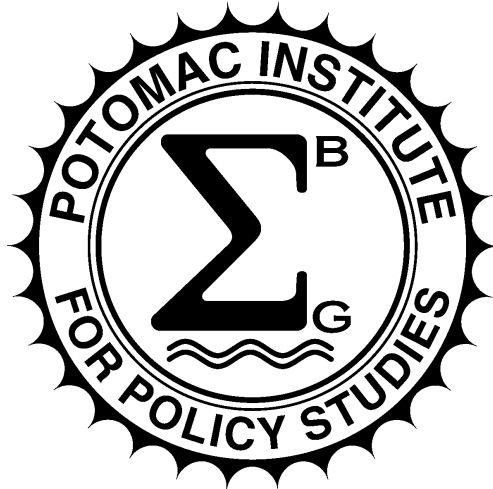


**POTOMAC INSTITUTE
FOR POLICY STUDIES**



TREATISE ON THE INFORMATION INFRASTRUCTURE

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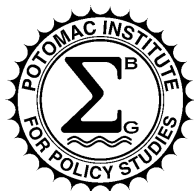
TREATISE ON THE INFORMATION INFRASTRUCTURE

It is the Information Age: so many vital functions in our society are conducted and managed almost entirely electronically, from air travel to telecommunications to banking. These functions are pervasive; direct deposits are making paychecks obsolete, filing taxes with the IRS can now be accomplished digitally, Christmas shopping can be done over the Internet. That the United States has become a nation absolutely dependent on information technology is a situation that is, although undisputed, fraught with unprecedented dilemmas and implications. Hence, we have little base of comparable experience from which to draw to manage and resolve those challenges -- industrial espionage, computer viruses, cryptography in the hands of terrorists and criminals -- and we are recognizing the need to develop a novel approach.

Our nation is vulnerable to attacks on our information infrastructure and the functions it serves -- made more so by our inability to reach either a political or technical consensus. It is generally agreed that the established information infrastructure must be protected, that enormous business interests are at stake, that users have a right to private and secure transmissions, and that the government has a legitimate responsibility to maintain national security and enforce the law. The core of the issue, then, becomes how to reconcile these seemingly antithetical interests. Key encryption has been seized on as the most appropriate system to accommodate all of those objectives, however, if the use of keys or some other method becomes the norm, the issues of their management and the extent of government involvement become paramount.

The Potomac Institute for Policy Studies is a not-for-profit organization concerned with the niches that technology and technology policy occupy in our society today, and in this respect is well suited to address the subject of the information infrastructure and its potential impact. However, it is the opinion of the Institute that this topic has already been studied to excess, and with the notable exception of the study published by the National Research Council in May of this year, most of the literature produced is more accurately classified as *descriptive* rather than *prescriptive*. In keeping with this observation, the Institute has decided to forgo yet another analysis of the issue in favor of making a suggestion for the development of both a resolution and an appropriate process to reach that resolution.

It appears that in the same manner that the government was compelled to regulate technical fields in the past, e.g. aviation, medicine, telecommunications,

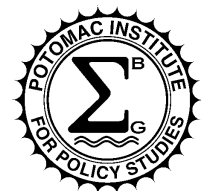


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and banking through, respectively, the Federal Aviation Administration (FAA), the Food and Drug Administration (FDA), the Federal Communications Commission (FCC), and the Federal Reserve Board, the need for oversight in the arena of an information infrastructure manifests itself. Similarly, it has become apparent that the government's current stance on encryption, analogous to attempting to shove the genie back in the bottle, cannot be successfully pursued. The technology for strong cryptography has become too extensive and pervasive for measures that attempt to prevent the spread of encryption products to be fortuitous. Another approach, from a distinct direction, must be devised.

The need for privacy, and standards regarding integrity, authenticity, and confidentiality, merit recognition as the hallmarks for *any* proposed system -- publicly or privately managed. The basis for this system should be a coherent, systematic process that incorporates these criteria *and* engages each of the involved constituencies in a balanced, even-handed manner. As envisioned by the Potomac Institute, the mechanism to accomplish these goals is the appointment of a senior panel that will bring to bear, *on neutral ground*, all of the competing factions' interests. Conceivably, this group would be a permanent entity populated with distinguished personages from industry, senior officials in government, and spokespersons for the civil liberties movement. It would be led by an individual of national stature and repute, and entrusted with the duty of forging a consensus on the issue of managing and protecting the nation's information infrastructure that can be translated into germane legislation. The new body would benefit from both secretariat and research support, and the Potomac Institute could fulfill this role given the appropriate sanction and resources.

One of the basic tenets of this new forum should be that greater latitude be given to industry and to private individuals to pursue their legitimate interests, while conversely, government should be encouraged to change its philosophy from that of total control to one of "enlightened, selective engagement". Also vital to the success of any new proposal is the amendment of the current export control legislation regarding encryption, which has certainly reached the apex of its utility and now only hinders the development of a practical global infrastructure. The advantage of the advisory body proposed here is that inherent in its design is the ability to invent a new, more suitable solution to the problem of encryption if key escrow becomes unacceptable or obsolete.



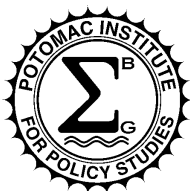
The Potomac Institute for Policy Studies is a not-for-profit organization formed in 1994 to develop and supply non-partisan analyses of technology and technology policy to leaders in government, business, and academia. As our logo suggests, the Institute reflects the summation of the effects of technology on society, from business to governing. The Institute is committed to providing an environment of analytic excellence to serve as a forum for debate regarding tomorrow's technology and security needs. By gathering noted and emerging experts in policy, economic, scientific and defense related areas, the Institute strives to go beyond analysis of critical areas to development of options responsive to future challenges.

Lieutenant General James R. Clapper, Jr. (Ret., USAF) is the Vice President for Special Programs for the Institute and formerly was the 10th Director of the Defense Intelligence Agency. General Clapper is a highly decorated retired Air Force officer who also holds the Korea Order of National Security of Merit (Chosu Medal), and the French Order of National Merit (Commander). In addition to numerous Air Force and Joint Senior Service Schools, General Clapper holds a Masters Degree in Political Science from St. Mary's University and completed the Harvard Program for Senior Executives in National and International Security and the Harvard Defense Policy Seminar in 1990.

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