A MILITARY AND ECONOMIC HISTORY

The communications satellite is a product of the Cold War, during which 94% of all federal research-and-development funds went to military and aerospace projects. The first worldwide satellite system, consequently, was the Pentagon's Defense Satellite Communications System, composed of 26 satellites in sub-synchronous equatorial orbit and supplemented by mobile transmitters that can be placed in virtually any terrain. This system has been used chiefly for what the Pentagon calls "tactical, or intratheater, communications" (i.e., support for its various counter-insurgency campaigns). The system's application in Vietnam, where satellites direct napalm strikes and artillery barrages, provides one footnote to the human use of modern technology.

A corollary to the military's interest in satellite facilities is its impact on the growth of the communications and aerospace industries. The Department of Defense, together with the National Aeronautics and Space Agency, has subsidized what today is the world's largest and most advanced aerospace, electronics, and communications enterprise by providing these industries with a guaranteed market for their product: in 1971, 32 electronics and communications corporations were among the top 50 industrial contractors. These are the firms now authorized by the FCC to establish domestic satellite facilities.

The firms seeking to establish domestic satellite facilities rank among the nation's leading defense contractors. Below is listed their defense rank and funds received, as well as the total assets of each company:

Company	[a] Rank	[a] DOD Contracts	[b] Total Assets
Lockheed Aircraft	1	$1.5 billion	$1.3 billion
AT&T	3	1.2 billion	55 billion
Hughes Aircraft	12	516 million	N.A.
North American Rockwell	13	478 million	1.5 billion
RCA	21	251 million	3 billion
GTE	42	106 million	8.6 billion
Collins Radio	60	72 million	417 million
Western Union Telegraph	65	66 million	1.1 billion
Fairchild Industries	76	49 million	188 million

a/ Aviation Week and Space Technology, November 22, 1971, p. 16.
b/ Moody's Industrial Manual, 1972.

The dominance of American aerospace and communications corporations has also been felt internationally in the area of commercial satellite communications. Prompted both by the military's achievements with this new space technology and the eagerness of the country's leading telecommunications firms to exploit its economic potential, Congress created the Communications Satellite Corporation (Comsat) in 1962; the Corporation's mandate was to establish a commercial satellite system that would improve inernational communications.

Comsat's contribution to the improvement of world communications is questionable; its service to the economic interests of its principal owners and users is not. The corporation's earliest success resulted in the establishment of an international satellite system (Intelsat) made up of foreign telecommunications entities (83 countries are currently represented in Intelsat) that would share in the development of the system. An international partnership was hardly the point, however, with Comsat controlling 61% (now 52%) of the system and assuming its management. It has used its managerial position to divert the major portion of the system's contracts to American firms (98% in 1969)[1] and to expand the Intelsat structure at a rate profitable to the U.S. aerospace and communications firms. Whereas the Hughes Aircraft Company, which developed the first, second, and fourth generations of Intelsat satellites, has been Comsat's largest contractor, other manufacturers, including RCA's Globcom, AT&T's Western Electric, General Electric, ITT, GTE, Fairchild Industries, Lockheed Aircraft, etc. have benefited from Comsat's management of international satellites.

THE CORPORATE INTEREST

It is not surprising, nor was it unexpected, that the communications satellite would become little more than a tool for increasing corporate profits. Those who foresaw this danger inherent in a privately owned global communications satellite system fought to preserve some form of public control over this technology[2]. But these voices were far outnumbered by those of the aerospace and communications equipment manufacturers attracted to a satellite system offering high profits and expanded international services. These interests have once again won a major political victory by obtaining from the FCC the exclusive rights to the ownership and control of domestic satellites.

There is no denying that domestic satellites will make money for their owners. The Stanford Research Institute[3], in its detailed market feasibility study, conservatively estimates first-year satellite revenues (for 1975-6) of more than $250 million, with each satellite entrepreneur anticipating revenues of between $16 and $69 million. This initial income is expected to come from the demand for a variety of new and old telecommunications services, including telephone, telegraph, radio, television, cable television, and private-line voice and computer data transmission. The Stanford study calculates that between 7 and 10 satellites (each costing from $30-$40 million) in synchronous orbit and about 240 earth stations (at $1 million per facility) will be required to accommodate this traffic—a projected total investment of $450 million for the first year of operations. By 1979, the system should be making more than $800 million a year, with the greatest increase in service and income generated from the rapidly growing computer (annual growth rate of 30%) and private longline (annual growth rate of 13%) markets, as well as AT&T's picturephone service, soon to be introduced on a mass scale.

Footnotes

1. O.W. Riegel, "Communications by Satellite: the Political Barriers," *The Quarterly Review of Economics and Business*, Vol. II, No. 4, Bureau of Economic and Business Resarch, University of Illinois, Winter, 1971.
2. See *Congressional Record* for 1962 as follows: July 26, pp. 13878-13879; July 22, pp. 13908-13909, 13911-13912; U.S. Congress, Senate Committee on Foreign Relations hearings on the Communications Satellite Act of 1962, Sen. Rep. No. 1973, August 10, 1962, 87th Congress, 2nd sess., Washington, D.C., 1962.
3. Stanford Research Institute, "Economic Viability of the Proposed U.S. Communications Satellite Systems," (contract No. OTP-SE-72-103), Palo Alto, Calif., 1971.