
Chapter VI

ALTERNATIVE INSTITUTIONAL ARRANGEMENTS FOR IMPLEMENTING THE INTEGRATED CAPABILITIES

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Institutional change is necessary if Congress and the President decide to provide the integrated capabilities. Such capabilities could be located and operated in many institutional settings, including locations within the private and public sectors and within the legislative and executive branches to support public policymaking.

Seven alternative institutional arrangements are identified to illustrate the range of feasible possibilities. Among these, the Federal executive branch seems the most appropriate location, although supporting or related materials information activities may be located in the private sector, State/local government, the Federal legislative branch, and/or quasi-governmental organizations.

A. INTRODUCTION

The need for establishing the integrated capabilities to support public policymaking on materials-related problems raises fundamental questions about the institutional arrangements of such a system.

- Where would it be located?
- How would it be structured?
- What powers would it have?
How would it operate?

The selection of appropriate institutional arrangements is critical to any option which Congress and/or the President may select for implementation.

This chapter will discuss institutional arrangements suitable for improving the existing

materials information systems according to the three systems approaches described in chapter V. Each institutional arrangement will be analyzed in terms of location, function, and institutional structure. Among the institutional variables considered are: (1) the organizational framework of laws, rules, regulations, charters, etc.; (2) the basic powers and responsibilities of the unit and its parent agency, if any; (3) its autonomy from political or program influences; (4) control over the directorship, budgetary, administrative, and legal policies of the system; (5) executive and legislative oversight; and (6) access to the system by potential users. Other variables are

the particular reputation, experience, and capability of possible institutional units or parent agencies: relationships with other governmental and private sector institutions; and possible disruptions or conflicts with ongoing programs.

Governmental institutions include executive branch departments and agencies including the Executive Office of the President, independent agencies, commissions, advisory bodies. Government corporations, legislative branch agencies, and other institutions which perform governmental functions, are funded by Federal revenues, or are under other direct Federal controls. Because the integrated capabilities are national in scope, the governmental institutions considered are Federal; however, State and local governments also may participate in their operations.

Private sector institutions include corporations and other business entities, whether for profit or nonprofit. trade associations and other special interest groups including public interest, environmental and other political or social associations, educational and research institutions, and other nongovernmental entities. Institutions which perform the integrated capabilities under Government contract are not considered to constitute private sector institutions because the primary responsibility for the system remains in a Government agency. However, a private sector institution which performs the integrated capabilities under its own control and management and supplies materials information to the Government as one of its customers is considered to be a private sector institution, even if some Government subsidies are received to support its activities

B. INSTITUTIONAL ARRANGEMENTS

1. Institutional Arrangements for Incremental Improvement of Existing Systems

As documented in the survey and interviews, many Federal agencies and private sector institutions are currently engaged in the collection and analysis of materials information. These activities can continue to develop through the incremental improvement of existing systems. Three possible institutional arrangements for incremental improvement are considered here. The first arrangement reflects increased Federal commitment to the many separate information systems under the individual control of existing Government agencies and private institutions. The second arrangement includes the establishment of a materials referral service in some Federal Government location to direct materials information inquiries to appropriate information sources. The third institutional arrangement provides for a coordinating board or committee to develop guidelines for the operation and incremental improvement of existing materials

information systems. Both the referral service and coordinating entity are compatible with systems approach A.

a. Increased Federal Commitment to Government and Private Sector Materials Information Systems. Under this arrangement, all existing institutions would continue to administer their separate data collection and analysis programs. Increased Federal commitment to the development of materials information, through some of the kinds of legislative/executive options discussed earlier, could help encourage Government agencies and private sector institutions to improve existing information systems and to establish new data bases and analytic methods where needed.

With support from the Congress and the President, Government agencies could seek expanded powers, including authority to gain access to critical materials information, and improve and expand their data bases and statistical and analytical programs. Where appropriate, the Congress and the President could allocate adequate funding and other

resources for automation of data bases and standardization of reports and measurements. Each agency would continue to set its own reporting and disclosure requirements. standards of confidentiality, and administrative policies. The costs of each system would be borne by the parent agency, with separate budgetary requests submitted to OMB and the appropriate congressional committees.

Private sector institutions which collect and analyze materials information—primarily corporations, trade associations, educational institutions and trade publications—might be encouraged in their activities by this increased (government interest in materials related information. (governmental interest could be expressed through voluntary exchanges of information with the private sector. subscription to materials publications and services. and Government contracts, as well as through direct subsidies and grants. Private sector institutions do not possess the authority to command access to materials information which Government agencies may exercise and so must rely upon voluntary arrangements. contractual relationships, published data, and their own research. Private sector institutions need not respond to requests for information by the President. [government agencies. or Congress except to the extent required by law, and they have no responsibility to reply to inquiries by the public.

This arrangement will require no new or substantially modified Government entity. will entail minimum disruption of existing systems. and will not threaten existing agency or private sector control. However. without the organization and integration possible through an improved institutional arrangement, increased Federal commitment may result in further duplication of programs, incompatible information produced by separate data bases, overlapping and conflicting agency jurisdictions. and will probably inhibit comprehensive analysis of materials life cycles. Thus it seems evident that evolution of existing systems through increased Federal commitment without improved institution;]

organization and integration will fall short of meeting the information needs discussed earlier.

b. Materials Information Referral Office.

In this institutional arrangement, some organization and integration is added to the decentralized systems through a materials referral office established to direct information seekers to the appropriate sources. All existing materials data systems and other information gathering and analysis activities would continue under the control of existing institutions.

Within the executive branch, the most likely locations for the referral office are the Department of Commerce or the Department of the Interior, because they are charged with broad jurisdiction over natural resources and industrial materials. In the legislative branch, the referral service might be located within the Library of Congress. perhaps as part of the National Referral Center. The referral office would be charged with the responsibility for monitoring available materials information sources in the Government. the private sector. and through publications, as well as directing inquiries to the appropriate location.

In addition to serving as a clearinghouse for materials information requests from the public. industry, and Government, the materials referral office would collect items of special relevance to the materials cycle and publish periodic guides to such items and to material information sources. All Federal agencies which collect information relevant to materials supply and demand could be directed to provide the referral office with a descriptive index of the data collected and any materials publications, the office or person to whom information requests should be addressed, and fees, if any. for such service. The referral office could also obtain, on a voluntary basis. similar information from State and local governments and major private sector materials information sources. and in return would facilitate the flow of federally collected information to these sources.

The possible advantages and disadvantages of a materials referral office for incremental improvement of existing systems are summarized in table VI-1. The referral office has the clear advantage of facilitating access to existing materials information sources, but does not go very far toward solving any of the more substantial problems of materials information, although it may lay the groundwork for future change.

c. **Materials Information Coordinating Board.** In this second institutional arrangement, a coordinating board or committee would be established to guide the operations and incremental improvement of separate information systems. This board or committee would monitor the performance of individual systems and suggest guidelines for system operation and improvements. Members of the board or committee could be appointed by the President and might include representatives of all materials information agencies, the Justice Department, OMB, materials regulatory agen-

cies, Congress, the Comptroller General, and other relevant legislative agencies. In addition, the board or committee could provide for the participation of representatives of the materials industry, trade associations, information management specialists, and members of the public through advisory committees.

A Government board or committee could be given appropriate authority to acquire from Government and private sources the information concerning materials and information systems management needed to propose uniform standards for improved operation of the existing materials information systems. These guidelines should cover such matters as the treatment of confidential information, standardization of measurements and reporting, public access policies, indexing of available materials information, and improvement of systems operations. The board's or committee's proposals would be advisory in nature and implementation of proposed standards would be left to each institution. **Board or**

Table VI-1.—Possible Advantages and Disadvantages of a Materials Information Referral Office

Advantages	Disadvantages
<p>Will not greatly disrupt the materials information systems of existing agencies.</p> <p>Will facilitate the development of a group to serve as a focus for later and more substantial change.</p> <p>Will provide a centralized location for referral to appropriate information sources, and thus may stimulate some improvement in existing information systems.</p>	<p>May to some extent duplicate activities of agency public information offices.</p> <p>Will probably require a new governmental unit.</p> <p>Will not solve most of the existing problems resulting from differing agency policies, nonuniform standards, multiple reporting requirements of separate information systems.</p>
Possible Advantages and Disadvantages of a Government Coordinating board	
Advantages	Disadvantages
<p>May promote more uniform and compatible operation of individual systems.</p> <p>May promote coordination of agency policies and activities on materials information</p> <p>Will not greatly disturb ongoing relationships between agencies and private sector data sources.</p>	<p>May not insure effective coordination of separate information systems if many agencies reject proposed guidelines</p> <p>Will require many potential users to seek information from multiple sources.</p> <p>Will not solve those problems which stem from the basic institutional alignments and perspectives of individual agencies.</p>

committee would not control any materials information bases—all decisions regarding data and information sources would remain within the jurisdiction of existing institutions.

The board or committee would have a small supporting staff and budget which could probably be associated with the Executive Office of the President or a line agency such as the Department of Commerce or the Department of the Interior. As part of its mandate, the board or committee would supply Congress and the President with periodic reports on the operations and policies of Government materials information systems. The materials referral service previously described could be included within the mandate of the board or committee.

Possible advantages and disadvantages of a coordinating board or committee located in the Federal Government are summarized in table VI-1. The board or committee may promote more uniform operation and better cooperation among existing institutions, without greatly disrupting the decentralized system. But the lack of binding authority and dependence on voluntary agency cooperation might well render the board ineffective.

2. Institutional Arrangements for Major Improvements in Existing Systems: An Executive Branch Location

Most proposals for establishing the integrated capabilities to support public policy-making have placed the improvements within an executive branch institution. For purposes of this study, executive branch institutions include executive departments and agencies (heads of which serve at the pleasure of the President), the Executive Office of the President, independent agencies and commissions (directors of which have fixed terms of appointment), and quasi-governmental institutions. This section assesses possible advantages and disadvantages of each of these executive branch institutions as the arrangement most compatible with systems approaches B and C.

a. Location in an Existing Executive Department or Agency. Several pieces of legislation before the 94th Congress called for establishing a comprehensive materials information system in an existing executive department or agency which exercises jurisdiction over one or more sectors of the materials industry. Examples of such locations include the Departments of Commerce, Interior, and Agriculture, the General Services Administration, and the Federal Energy Administration. This study does not attempt to assess the comparative advantages and disadvantages of locations in these agencies, but rather seeks to identify the general advantages and disadvantages of executive departments and agencies as compared with other alternative institutional arrangements.

The basic powers and responsibilities within an executive department or agency would derive from the existing mandate of the agency and from specific implementing legislation and directives. The primary functions would be performed by this unit in addition to management of the system and coordination of supporting activities of other agencies. Since this arrangement, like the others, would use existing data bases maintained by individual agencies, necessary authority must be granted to allow transfer of relevant materials information from the primary source agency. Appropriate standards for protection of information subject to claims of confidentiality must be established for exchanges between Government agencies and private sector respondents.

To ensure that timely, comprehensive, and reliable data will be provided, the institutional unit might be empowered to require submission of materials data from private sources where no Government agency collects the necessary information, as well as authority to compel access to **private sector** materials data, books, records, and sites for validation purposes. As an additional incentive to the completeness and reliability of the integrated capabilities, the General Accounting Office might be empowered with full authority to review all raw data submissions by Govern-

ment and private sources and to inspect respondents' books, records, and facilities for validation purposes.

The institutional unit would monitor all factors affecting the materials life cycle, in addition to materials supplies and consumption, and would provide periodic and special reports to Congress and the President on the national materials situation. These reports would be in addition to supplying continuous access to current and complete materials data to Government and the public. Enabling legislation could promote responsiveness to Congress by specifying compliance with congressional requests for materials information and analyses. Public access to improved materials information could be enhanced by a firm legislative statement directing maximum operational openness in and limiting grants of confidentiality,

Principal funding for development and management would be contained in the budget of the parent agency. Other agencies would bear a proportionate share of the costs of maintaining and using the integrated capabilities. Costs of primary information gathering and processing activities would be borne by the primary source agency as a cost of its own data base. Costs of special requests for information from agency data bases would be assessed to the responsible institutional unit. Only search and reproduction costs would be recoverable from public and industry users, as allowable under the Freedom of Information Act. Consideration should be given to the establishment of reasonable fees for tie-in subscription by private systems.

Possible advantages and disadvantages of locating the integrated capabilities in an existing department or agency are summarized in table VI-2. On one hand, the reputation, experience, management structure, and authority of a supportive parent agency could help insure effective interagency cooperation and provision of required resources. An existing agency location will likely minimize the disruption of ongoing Federal programs and

private sector relationships (as compared to a new agency). On the other hand, the parent agency, may be influenced or even "captured" by political or policy preferences, impairing credibility or leaving the integrated capabilities in an incomplete and weakened status if other Federal agencies and/or the parent agency refuse to or cannot cooperate,

b. Location in a New Executive Department or Agency. There are two possible institutional arrangements in a new executive department or agency. Under the first of these possibilities, the integrated capabilities would become part of a new executive department such as the proposed Department of Energy and Natural Resources. Under the second possible institutional arrangement, a new statistical agency would be created. While each of these arrangements reflects many of the advantages and disadvantages which attach to existing executive departments and agencies, there are sufficient differences to warrant separate consideration,

Department of Energy and Natural Resources.-In recent years, there have been several proposals for the establishment of a new "super department" with jurisdiction over matters pertaining to natural resources and energy. Programs and offices dealing with these subjects which are, at present, scattered among several departments and agencies would be reorganized under the aegis of a single department. Existing energy and natural resources statistical programs in the Departments of Agriculture, Commerce, and Interior would be among those transferred to the new super department which would then become, perhaps, the most appropriate executive department location.

The institutional unit would be charged with the responsibility for establishing and maintaining a centralized materials information system with the capability of monitoring all relevant factors affecting materials supply and demand for the benefit of the Executive, Congress, business, and the public. In addition to gathering, processing, and distributing

materials information utilized in the central system, the unit would have the responsibility for coordinating Government materials information activities and assuring the compatibility of contributing data bases and systems with the central system. Most of the data would rely upon materials information now collected by individual agencies under new and existing Federal programs. Therefore, appropriate authority would be granted to assure interagency cooperation while maintaining necessary protection for confidential information. In order to carry out its functions, the institutional unit could be

empowered to require submission of relevant materials information from private sector and Government sources where such information is not contained in existing Federal data bases or is not readily accessible therein.

Responsibility for verifying, periodically, the accuracy of submissions could be granted to the centralized system, It could, for purposes of such validation, be authorized to seek access, by subpoena if necessary, to materials information and supporting books, records, documents, and other evidence, including trade secrets and other privileged and confidential information in possession of various

Table VI-2.-Possible Advantages and Disadvantages of a Location in an Existing Executive Department or Agency

Advantages	Disadvantages
<p>May enhance credibility if adequately insulated from internal agency influence by creating a separate bureaucratic unit (e.g., Bureau of Labor Statistics, Bureau of Census, and DoA Statistical Reporting Service).</p>	<p>May be exposed to the possibility of influence by political and policy preferences.</p>
<p>Will locate in an operating structure can provide the required resources and sustain the necessary expansion of activities.</p>	<p>May be "captured" by its parent agency through direct or indirect pressures to report or interpret materials statistics so as to further the parent agency's image or programs.</p>
<p>May be strengthened through the reputation, experience, management structure, and existing operating authority of the parent agency.</p>	<p>May impair the credibility.</p> <p>May exacerbate existing competition between agencies and creation of new rivalries, in part because of dependence upon information gathering authorities and data bases of numerous Federal agencies.</p>
<p>May help assure interagency cooperation, if the parent agency is fully committed to and supportive.</p>	<p>Will be subjected to general control of the parent agency over management, legal policies, and resource allocation, and to intra-agency competition for funds and personnel.</p>
<p>Will provide materials information seekers with a single location for information requests.</p>	<p>May create some minor disruption of ongoing Federal materials programs in order to accommodate information needs and improve compatibility of existing systems.</p>
<p>May help promote uniform policies of public access, disclosure, and confidentiality, and standardization of reporting forms and units of measurement.</p> <p>Will not substantially interfere with existing relationships between Federal agencies and information sources in the materials industry, since existing agencies will continue to be the primary agents for data collection.</p>	<p>May be incomplete and impaired, if the other Federal agencies and/or parent agency refuse to or cannot cooperate in meeting information needs.</p>
<p>May help eliminate some duplication in existing facilities and programs.</p>	

Government agencies and private sector institutions. As part of its functions, the institutional unit would provide materials information clearinghouse and referral services, issue periodic reports, and upon appropriate request, supply special reports to the President, executive branch agencies, and the Congress.

Possible advantages and disadvantages of a location within a new natural resources super department are summarized in table VI-3. This location will likely facilitate the ability to provide for uniform systemwide policies on materials information, to improve compatibility through modifications in existing systems, and to eliminate duplicate programs and activities. On the other hand, location in a super department will unduly delay implementation (since a super department is years away), will likely disrupt many governmental programs, may increase the possibility of

department influence on statistics and analyses, may therefore diminish the unit's credibility and may heighten both inter- and intra-departmental competition for resources and prestige.

New Statistical Agency.—Several of the disadvantages associated with a location in a natural resources super department might be overcome by the creation of a new statistical agency to develop and operate the integrated capabilities. This agency would be under the direction of an Administrator appointed by the President and confirmed by the Senate; its sole responsibility would be the development and maintenance of a centralized materials information system serving the needs of the executive branch, Congress, business, and the public. While the President would exercise some control over the agency through the

Table VI-3.—Possible Advantages and Disadvantages of a Location Within a New Natural Resources Department

Advantages	Disadvantages
<p>Will provide for uniform systemwide policies of public access, disclosure, and confidentiality, and for standardized reporting forms and units of measurement.</p>	<p>Will undoubtedly disrupt many Government programs as a result of the massive reorganization required.</p>
<p>Will permit simplified access through a central location for all information requests.</p>	<p>May be exposed to a greater possibility of departmental influence on statistics or analyses.</p>
<p>Will reduce the number of interagency contacts which might otherwise hamper timely exchange of information because of agency rivalries.</p>	<p>May diminish credibility due to identification with a super department with vast policymaking and program-implementing responsibilities.</p>
<p>May make possible the elimination of duplicate programs and facilities and consolidation of other statistical programs thus reducing the costs of the whole system.</p>	<p>May heighten any rivalries with existing Government agencies due to their loss of programs to the super department, program-implementing responsibilities.</p>
<p>Will facilitate modifications in existing systems to assure compatibility with NIMIS through intra-departmental action alone.</p>	<p>May be subject to greater intra-departmental competition for resources and prestige.</p>
<p>May build more effectively on the accumulated reputations, experience, and capabilities of existing systems.</p>	<p>May expose confidential information to increased risk of inadvertent disclosure.</p>
	<p>Will unduly delay implementation since a super department is probably years away.</p>
	<p>May reduce flexibility of the system to respond to diverse specialized information needs.</p>

power of appointment and removal, the Administrator would have a responsibility to exercise independent judgment.

This materials information agency would publish periodic reports on materials availability and consumption and other key variables. In addition, the agency would respond to special requests for materials information from the President and Congress. The agency would provide basic materials life-cycle data, statistical analyses, trends and forecasting capabilities, and other services of a statistical or informational character. It might also provide policy options or policy analyses.

The agency would have primary responsibility for recommending necessary changes in existing materials information systems to assure compatibility with the integrated capabilities. These recommendations could be implemented through independent action by primary source agencies, OMB directives, or by legislation. The agency would utilize existing data bases where possible and would continue to rely on existing agencies and departments to act as collection agents for primary materials data for the central system. The agency could be given appropriate authority to require necessary and relevant information from Government and private sources and might, for validation purposes, have access to all raw data under control of contributing primary source agencies and to private sources' books, records, and facilities. Appropriate protection would be given to confidential information, and confidential or privileged information in the possession of other Government sources would be released only as specifically required.

Possible advantages and disadvantages of a new materials information agency are summarized in table VI-4. This location will enhance the agency's credibility by making it independent from policymaking functions, will remove it from potential pressure by a parent agency, and will place it in one of the strongest institutional positions within the executive

branch to represent itself before the President and Congress and to secure necessary support and cooperation. While disruption will be less than a super department, a new agency will still require additional bureaucratic overhead and administrative structure, may experience a start-up delay, and in the final analysis, may not be given the authorities and resources necessary to carry out its mission.

c. Location in the Executive Office of the President. Another possible institutional location is within the Executive Office of the President (EOP). There are several justifications for such a location. A comprehensive materials information system cuts across departmental and agency boundaries in its scope and jurisdiction and depends upon agency data and analytic support. Location in a supra-agency position within the executive branch would permit coordination and management of activities without exacerbating agency rivalry, overlapping jurisdictions, and disrupting of ongoing agency programs. In addition, the management authority over data reporting requirements, confidentiality, standardization of units of measurement and geographical units, and disclosure policies would be exercised through the President's authority over the agencies.

The integrated capabilities are national and international in scope and are intended in part to support important national policy decisions which are made or approved at the Executive Office level. Through the authority and prestige of the President, information and expertise from Government and corporate sources would be readily available to an EOP unit. There are several possible existing Executive Office locations, such as the Office of Management and Budget, Domestic Council, or Council of Economic Advisors. A new executive office or council might be established similar to the Coordinating Board discussed earlier, or a smaller unit such as the three member Council on Materials Management proposed during the 94th Congress in S.1415.

Given the size of the Executive Office of the President and its limited personnel and resources, a unit located there would at most perform management and coordination functions, publish summary data in report form, and provide high-level analytical and policy support to the Executive. Therefore, the unit would rely on existing agency and other data sources to perform primary data collection and analysis. Since the validity of data would depend upon the quality of agency sources, the EOP unit might be given the authority to request any relevant information not already collected by Government agencies—either by direct request to the source or by delegation to the appropriate agency. Agencies would provide supplemental materials information analysis upon request of the EOP unit.

Possible advantages and disadvantages of a location within the Executive Office of the

President are summarized in table VI-5. An EOP location may increase visibility and prestige, strengthen management of agency activities and access to materials information and expertise, and minimize direct conflicts over operations and policies. However, this location may be viewed as an unwarranted expansion of Presidential power, may subject the unit to the influence of political preferences and claims of executive privilege, may therefore impair its usefulness to Congress and the public, and, overall, may place severe constraints on the scope of operational activities.

d. Location in an Independent Agency or Commission. From the standpoint of this study, the primary differences between executive agencies and independent agencies is in the directorship of the institution. The director(s) of an independent agency are appointed

Table VI-4.—Possible Advantages and Disadvantages of Location Within a New Statistical Agency

Advantages	Disadvantages
<p>Will enhance credibility by making the agency independent of any policymaking functions.</p> <p>Will remove from potential pressure by a parent agency.</p> <p>Will minimize disruption (compared to a super department or super information agency) since existing systems would be supplemented, not replaced, and massive reorganization would not be required.</p> <p>May facilitate uniform systemwide policies of access, disclosure, and confidentiality; simplified user access; standardized reporting forms and units of measurement; and elimination of many duplicate facilities and programs.</p> <p>Will eliminate intra-agency competition for resources and prestige.</p> <p>Will be placed in one of the strongest possible institutional positions within the executive branch to represent itself before the President and Congress and to secure necessary support and cooperation.</p>	<p>Will require the creation of a new governmental institution.</p> <p>Will require its own administrative structure, personnel, and support facilities.</p> <p>May experience a start-up delay, like other new institutions.</p> <p>May deprive of experience available if located in an existing institution.</p> <p>May not be given the authorities necessary to carry out its mission.</p>

Table Vi-5.—Possible Advantages and Disadvantages of Location Within The Executive Office of the President

Advantages	Disadvantages
<p>May minimize direct conflicts between executive agencies and departments over operations and policies.</p> <p>May strengthen access to materials information and expertise through E.O.P. authority and prestige.</p> <p>May strengthen management and coordination of agency activities.</p> <p>Way increase viability and prestige.</p>	<p>May be viewed as an expansion of Presidential power.</p> <p>May be subjected to the direct influence, real or apparent, of political preferences.</p> <p>May be subjected to claims of executive privilege and thereby limit usefulness to Congress and the public.</p> <p>May impair congressional and public access to the system.</p> <p>May be weakened or “orphaned” if the President is not fully supportive.</p> <p>May place severe constraints on the scope of activities and the level of available resources.</p>

by the President with the approval of the Senate and serve for a fixed term of years like members of regulatory commissions; the head of an executive agency serves at the pleasure of the President. The principal advantage of the fixed-term appointment is the increased autonomy of management in setting internal policy for the system and in providing unbiased analyses. In addition, certain professional or other qualifications for the directors might be specified to further promote their independence.

As in other institutional arrangements, the independent agency would coordinate materials information activities and provide a centralized depository for materials data. The agency would, through transfer of existing functions or interagency agreements, build upon existing data bases and relationships maintained by other Government agencies. The agency could be empowered to require information from governmental and private sources, and could have access to all necessary documents, books, and records for validation of data submissions. An independent agency could also be an appropriate institutional structure for a comprehensive system in which the agency was the sole collector of pri-

mary materials information from private sources for all Government agencies,

Because of its independence, the agency would be co-equal with other Government institutions. It would control its own fiscal, administrative, and legal policies within the broad guidelines set by the Executive. Appropriate oversight authority could be vested in GAO to promote the accuracy and reliability of system information. The agency would be required by legislation to respond to requests for information and analyses by Congress and the President. As part of the Federal Government, the agency would be subject to openness requirements of the Freedom of Information Act and procedural requirements of the Administrative Procedure Act. The agency could be made even more responsive to public demand for information through requirement of published reports at regular intervals, with well-defined limits on confidential information. User fees could be reasonably set to promote use by private citizens and business.

Possible advantages and disadvantages of a location in an independent agency or commission are summarized in table VI-6. This location will protect the agency from danger of

Table Vi-6.-Possible Advantages and Disadvantages of Location in an Independent Agency or Commission

Advantages	Disadvantages
<p>Will prevent “capture” by a parent agency.</p> <p>Will permit more autonomy and control over its resources and policies.</p> <p>Will be better insulated from political and other pressures or influence by the Executive or Congress.</p> <p>May permit uniform regulation of materials information reporting, disclosure, confidentiality, and public access.</p>	<p>May be insulated from the information needs of Government agencies and the public.</p> <p>May lose touch with critical specialized information needs.</p> <p>Will cause some disruption in ongoing programs due to the reorganization required.</p> <p>Will require the creation of a new governmental institution and additional bureaucratic overhead.</p>

being captured by a parent agency, will permit it to have more autonomy over its resources, and will better insulate it from political pressures. However, location in an independent agency may permit it to lose touch with critical information needs, may insulate it from information users, and will require the creation of a major new governmental institution with additional bureaucratic overhead.

e. Location in a Quasi-Governmental Institution. Several proposals have suggested that the integrated capabilities be located in a special quasi-governmental institution such as a Government-chartered corporation or a specialized association like the National Academy of Sciences. These suggestions are based on several assumptions. First, such an institutional location would be “independent of Government” and hence better suited to serve the materials information needs of both industry and Government, while at the same time drawing upon Government resources and information to support its activities. Second, because of its independence and “private sector” identification, a quasi-governmental institution could develop better working relationships with private industry, as industry would be more inclined to accept the objectivity of data generated and more likely to “trust” such an institution with its proprietary data than a Government agency. Third, a single location would be free of much govern-

mental regulations, red tape, restrictions, and therefore would perform “better” than a similar governmental institution. Fourth, the institution could be “self-supporting” through user fees. Fifth, independence of the institution from both industry and Government would provide maximum protection of proprietary information.

f. Location in a Government-Chartered Corporation. One suggestion calls for creation of a quasi-governmental corporation with a structure similar to COMSAT—a federally chartered stock corporation which would develop and maintain a comprehensive materials information system serving the needs of Government and materials producers and materials consumers. Stock in the corporation would be sold to system users and the public, with the anticipation that the majority of shares would be held by system users. Incorporators of the corporation would be appointed by the President, approved by the Senate, and would elect its first Board of Directors. Thereafter, annual or other periodic reports on corporate activities and financial condition would be submitted to the President and Congress,

Initial funding for development of the system would be provided by one or more of these methods: direct subsidy by the Federal Government, sale of stock, loans to the corporation either guaranteed by the Federal

Government or held by the Federal Government, or loans or subsidies by private industry. Sale of stock in the corporation may be delayed until the system is operational, with costs and risks of development undertaken by the Federal Government. Since under this structure the corporation would ultimately be controlled by its shareholders and not the Federal Government, it would not possess any authority to compel disclosure of materials information from public or private sources. The system would rely upon published materials and the voluntary cooperation of governmental and private institutions. Access to the system would be gained by subscription, contract, or management discretion.

Possible advantages and disadvantages of a Government-chartered corporation are summarized in table VI-7. This location will place responsibility within a neutral independent institution, may enhance credibility of data and analyses, may create a self-supporting basis and increase the willingness of private companies to cooperate, and will not disrupt existing Federal programs. However, such a location may limit direct public use, may reduce responsiveness to Government and public needs, and may limit access to materials information in Government agencies.

g. Location in a Government Advisory Body. Another quasi-governmental institutional configuration would place some or all of the responsibility with the National Academy of Sciences or a similar body which traditionally has served in an advisory capacity to the Federal Government,

The Academy, although not a Government agency, has maintained a close relationship with the Federal Government since its establishment by Act of Congress in 1863. Its charter specifies that “. . . the Academy shall, whenever called upon by any department of the Government, investigate, examine, experiment, and report upon any subject of science or art, the actual expense of such investigations, examinations, experiments and reports to be paid from appropriations which may be

made for that purpose, but the Academy shall receive no compensation, whatever, for any service to the Government of the United States.” Although no Federal funds are appropriated directly for Academy activities, the Federal Government provides the principal funding for its operations through the negotiation of individual contracts with Government agencies.

Under this institutional arrangement, one or more agencies of the Government would contract with the National Academy of Sciences or other advisory body to develop and maintain a national materials information service, perhaps along the lines of the TRIS (Transportation Research Information System) now operated by NAS. The advisory body would obtain materials data necessary for the performance of its functions from readily accessible Government data bases, publications, and by voluntary submissions of data by private sources. The expenses of the system would be undertaken by the Federal Government and any other subscribers. Management of the system would be supervised by an appropriate committee of NAS or other advisory body,

Because the advisory body is not part of the Government, it would not have any authority to compel disclosure of information by private or Government sources. However, through its contractual relationship with Government agencies it would gain access to all necessary and relevant data under Government control for its activities. Confidential information released to the advisory body for information system purposes would be protected by contractual provisions, specific terms accompanying release, and relevant Federal statutes restricting disclosure of such information. Confidential information voluntarily supplied by private sources under conditions of confidentiality would be protected from release, even to Government agencies, by the threat of civil liability for any harm resulting from such disclosure. Since the advisory body is not a governmental agency, it would not be subject to the public access requirements of the Freedom of Information Act. However, certain

Table VI-7.-Possible Advantages and Disadvantages of Location in a Quasi-Governmental Institution

Location in a Government-Chartered Corporation	
Avantages	Disadvantages
<p>Will place responsibility within a neutral independent institution.</p> <p>May enhance credibility of data and analyses to some sectors of government, private industry, and the public.</p> <p>May be on a self-supporting basis through stock sales and user fees.</p> <p>May increase the willingness of private companies to supply confidential and other materials information to a neutral entity.</p> <p>Will create no direct disruption of existing Federal Government programs.</p>	<p>May limit direct public use due to costs involved in payment of user fees.</p> <p>May limit access to materials information in Government agencies.</p> <p>May impair the reliability and validity of data.</p> <p>May raise problems of accountability if the Government should participate in management of the corporation through stock ownership.</p> <p>May reduce the usefulness and responsiveness to Government and public needs.</p>
Location in a Government Advisory Body	
Advantages	Disadvantages
<p>Will be insulated from direct Government control.</p> <p>May encourage private industry to be more willing to supply sensitive, confidential information.</p> <p>Will not require a major expansion of governmental activities.</p> <p>May enhance credibility.</p> <p>May more effectively insulate confidential information from unauthorized or harmful disclosure.</p>	<p>Will not provide authority needed for access to materials information from Government and private sources.</p> <p>May impair the ability to operate effectively,</p> <p>Will require the negotiation and approval of complex contractual relationships with the Federal Government.</p> <p>May limit public and Government access.</p>

activities of the institution might be subject to provisions of the Federal Advisory Committee Act, and indirect public access to system information could be obtained by FOIA request to the subscribing Federal agencies.

The system would exist in addition to materials-related data systems in individual Federal agencies, but it would not have any coordinating responsibility for agency information activities. It is anticipated, however, that any improved methods of materials data management or analysis would be available to the agencies for implementation into ongoing programs, Publication of annual or other periodic reports on materials resources, reserves, consumption, and other factors relating to materials supply and demand would ex-

pand the materials information generally available to business, educational and research institutions, and members of the public.

Possible advantages and disadvantages of a Government advisory board are summarized in table VI-7. This location will insulate the board from direct Government control, may encourage private industry to supply confidential information, will not require a major expansion of governmental activities, and may enhance overall credibility, However, location in an advisory body will not provide the authority needed to acquire necessary materials information, may impair the ability to operate effectively, and may limit public and Government access,

3. Location in the Legislative Branch

One of the most important goals of the integrated capabilities is to provide Congress with timely, accurate, and comprehensive information about the Nation's materials supplies and demands. Congress must, to a large extent, rely upon data and analyses submitted by executive branch agencies or upon materials submitted for legislative hearings by private sources. Some limited analytical capability is available in CRS, GAO, and OTA, and potentially in CBO, but these resources are stretched thin. Increasingly, legislation and proposals have appeared for the establishment of an independent congressional capability to prepare separate analyses for Congress, in addition to those supplied by the executive branch and lobbyists.

Such a need could be met by establishing materials information capabilities within the legislative branch, either within an existing legislative support unit or as a new legislative office. Because of the nature of Congress's information needs, such capabilities would deal largely with aggregate data and with trends, forecasts, and analysis of administration or congressional proposals. Its data base needs would not be as extensive as more comprehensive technical systems. Authority would be needed to obtain basic aggregate data from existing Government and private sources. Access for purposes of validation could be given to the materials unit or to GAO to check executive agency and private submissions.

As part of this congressional materials information capabilities, existing clearinghouse, referral, and analytical services provided by CRS and GAO would be improved, Congress would thus have its own independent source of materials information and analysis, which would not be directly accessible by members of the public since Congress is not subject to requirements of the Freedom of Information Act. However, information and analyses supplied to Congress by the unit would likely be published in legislative records and documents. This legislative unit would not serve

needs of the Executive or other Federal agencies.

Possible advantages and disadvantages of a location in the legislative branch are summarized in table VI-8. The major advantage is that Congress would be freed from absolute reliance on analyses submitted by executive and private sources. Congress would have the benefit of independent judgment and analyses. The integrated capabilities would be limited in scope and complexity and would be integrated where possible into existing legislative support units.

The disadvantages of a congressional location are, first, that operations would rely primarily upon the voluntary cooperation of Government agencies and private institutions in supplying materials data to the unit. Large-scale refusal or reluctance by Government agencies to supply necessary information could limit the effectiveness of the system and reliability of data. Second, any congressional use of mandatory disclosure of information from Government or private sources would be cumbersome--either subpoena power would have to be exercised by a congressional committee, or a legislative officer would have to be properly authorized to sue for the production of information. Third, establishment of a congressional unit would be constrained by the institutional and resource limitations inherent in a legislative branch location. While existing congressional offices--CRS, GAO, CBO, and OTA--might well be upgraded in the materials information area, in part through the support of evolving congressional information capabilities, the Congress does not appear to be a feasible location.

4. Location in the Private Sector

A final possible institutional arrangement is the establishment of the integrated capabilities in the private sector. Private sector institutions include business and educational institutions, and trade and special-interest associations. Their essential features are that they operate

Table Vi-8.-Possible Advantages and Disadvantages of a Location Within the Legislative Branch or Private Sector

Location in the Legislative Branch	
Advantages	Disadvantages
<p>Will free Congress from absolute reliance on materials information and analyses supplied by executive and private sources.</p> <p>Will provide Congress with independent analyses of materials problems and policies.</p> <p>Will improve existing congressional materials information systems.</p> <p>Will not require an extensive data base.</p>	<p>Will not be directly accessible to public and executive branch.</p> <p>Will depend primarily upon voluntary cooperation of Government agencies and private sector for efficient operation.</p> <p>Will be restrained by institutional and resource limitations.</p>
Location in the Private Sector	
Advantages	Disadvantages
<p>May reduce demands on the Government for materials information.</p> <p>May serve to supplement existing Government materials information systems.</p> <p>May reduce the need for new or expanded Government systems.</p> <p>May promote private sector cooperation.</p>	<p>Will not have authority to acquire materials data from Government and private sources.</p> <p>May be incomplete and unreliable.</p> <p>Will constitute a formidable barrier due to cost and legal limitations.</p> <p>Will result in limited public and congressional access and use.</p> <p>May result in higher overall Government costs for materials information.</p> <p>May be "influenced" by materials corporations or industries, thus reducing overall credibility and utility of the system to others.</p> <p>May not go very far in meeting public sector needs for new or improved information, due to the proprietary nature of many private sector systems.</p>

under self-management and are not under the direct control of Federal or local government—even though they may derive substantial revenue from Government sources.

Many private sector institutions are already engaged in gathering, processing, and reporting materials information. Thus, like Government, the private sector has decentralized materials information systems. These systems, like those in Government, cover man-y aspects

of the materials cycle. Indeed, these private sector data bases are a major source of materials information for the Government and its systems.

Within a private sector location, the primary management and information functions would be placed in a single institution, with supporting functions provided by other entities. A private sector location would include an institution such as a corporation, trade association, or

research or educational institution, This institution would gather, process, and report relevant materials information to users in Government, the private sector, and the public.

The primary authority for the private sector institution would be derived from its charter, by-laws, and the laws of the jurisdictions in which it operates. The entity may be either profitmaking or nonprofit, but for it to operate successfully it must be self-supporting. The institution would rely primarily upon materials data bases maintained by Government and private sector sources, Access to those sources would be dependent upon the discretion of the entity controlling the information and could be secured by appropriate contractual arrangements, Where applicable, access to Government-held information may be guaranteed by the Federal Freedom of Information Act and other Federal and local public disclosure requirements.

However, unlike Government-controlled systems, access to private sector systems is limited by private ownership, and access may be gained only by purchase or subscription. A system may be maintained by a trade association for the use of its members, with only limited disclosure to Government and the public through publications or other voluntary release. Other systems are maintained for internal management purposes and are kept highly confidential for competitive reasons. There is no requirement that information contained in these private systems be generally available to the public or Government.

Furthermore, information supplied to a private system by materials producers and their trade associations may, in some instances, be of doubtful reliability because of the possibility of intentional bias so as to distort the use of such information by Government, materials consumers, and other institutions, Within sectors of the materials industry, there is considerable distrust by companies of

figures supplied by competitors to Government or trade associations.

In this competitive atmosphere, proprietary information, including data not normally considered privileged or confidential, is frequently guarded from disclosure to rival companies, potential suppliers, or customers. Even systems run by neutral trade associations or research and educational institutions suffer from the competitive atmosphere that exists within segments of the materials industry. The result is fragmented, incomplete, and often unreliable data bases producing information systems and analyses of limited depth, scope, and credibility which serve only a small number of the potential users. Finally, there is no private sector institution which could coordinate and interrelate the activities of the decentralized systems to provide timely, reliable, and complete information on the entire materials cycle to the Government, private industry, and the public.

Possible advantages and disadvantages of a location in the private sector are summarized in table VI-8, A private sector location for policy analysis may reduce demands on the Government for materials information, supplement existing Federal systems, and promote private sector cooperation. But at the same time this will likely obviate the authority needed to carry out the primary mission to support public policymaking, may produce an arrangement which is incomplete and unreliable, will result in limited public and congressional access and use and may permit influence by materials corporations or industries. Private sector materials information systems—especially with respect to scientific/technical information, clearinghouse/referral services, and forecasting/analytical capabilities in support of materials policymaking—might well be improved, through increased Federal Government support, But the private sector does not appear to be a feasible location for a major public policy-oriented arrangement,

C. SELECTED IMPLEMENTATION ALTERNATIVES

The analysis in the preceding chapter strongly suggests that, without direct and concerted action, the legislative/executive branch needs for improved materials information in support of public policymaking are unlikely to be met through the natural evolution of existing materials information systems. However, the analysis also indicates that increased Federal commitment through one or more of the possible legislative/executive options will not by itself insure that existing systems evolve to meet the priority information needs. Regardless of the level of commitment, additional organization and integration seems essential. Various levels of organization and integration may be introduced through the alternative institutional arrangements as well as through the systems approaches discussed in chapter V.

1. Rationale for Specific Alternatives

a. Potential Users and Information Needs Determine Objectives. Selecting specific alternatives depends in the first instance on the potential users and their information needs, as translated into objectives to be achieved. In this assessment, the focus is on materials information for public policymaking. Thus, the primary potential users include policy makers in the legislative and executive branches of the Federal Government (e.g., Members of Congress and congressional staff, the President and executive-level staff department and agency heads and their staffs), and the primary need is for inventory/economic information. However, for the reasons discussed in chapter 111. the alternatives should give some consideration to other users (e.g., private corporations, and trade associations, consumer and environmental groups, and research and educational organizations), as well as State and local governments.

b. Alternative System Approaches. The implementation alternatives involve different systems approaches, with appropriate levels of

authority, to achieve the integrated capabilities,

In terms of services, the approaches range from (a) a materials information referral service (to help users locate existing information sources); (b) a materials information exchange service (for effective interchange of information among existing systems); (c) a summary materials data base (summarized and aggregated data from existing and/or new systems); (d) a clearinghouse or query management service (to respond to user requests for materials information in various formats); (e) statistical analysis and forecasting; and finally to (f) a detailed materials data base (detailed as well as summarized data from existing and/or new systems),

With respect to functions, the approaches are based on a life-cycle concept for managing materials information. The life-cycle concept includes information on all stages of the cycle of materials supply and utilization, from acquisition of raw materials (e.g., exports, stockpiles, or reserves) through processing (e.g., beneficiation, refining, and smelting) and manufacture to eventual consumption, and end-use (e. g., disposal. re-use, or recycling). This concept can also include information on interrelationships between the materials life cycle and, for example, energy input, labor and transportation requirements, and environmental impact.

The life-cycle concept provides the basis for a wide range of statistical analysis and forecasting functions, such as estimating the potential scarcity of selected commodities or determining the environmental impact of substituting one material for another, and also provides a framework for the referral and exchange of materials information.

With respect to information technology. the capabilities and functions discussed above are dependent on improvements in both nonautomated and computerized data bases data processing, statistical analysis, and forecasting. Three basic systems approaches which can

provide this information support are discussed in chapter V:(1) incremental in improvement with in the context of existing systems and institutions (to be accomplished by essentially the same people, in the same organizations, with the same tools); (2) sequential improvement building on existing systems and institutions but including some new or substantially modified systems and institutional arrangements; and (3) "total systems" improvement whereby a new materials information system is designed and developed from scratch with significant consolidation of functions from existing systems and including a major new institutional arrangement.

c. Institutional Arrangements. All arrangements will relate to and, where appropriate, build on the institutional arrangements associated with existing materials information systems. The integrated capabilities could be operated in many places, including locations within the private and public sectors, and with in the legislative and executive branches of the Federal Government. However, since the primary objective is to support public policymaking, the number of feasible institutional arrangements can be substantially reduced. Executive branch locations were analyzed in section B.2., of this chapter.

Private sector.—A private sector location may reduce demands on the Government for materials information, supplement existing Federal systems, and promote private sector cooperation. But at the same time this location will not have the authority needed to carry out its primary mission to support public policymaking. may be incomplete and unreliable, will result in limited public and congressional access and use, and may be influenced by materials corporations or industries. Private sector materials information systems—especially with respect to scientific/technical information, clearinghouse/referral services, and forecasting/analytical capabilities in support of materials policymaking—might well be improved, perhaps through increased Federal [government support. But the private sector

does not appear to be a feasible location for a major public policy-oriented alternative.

Public sector, State/local government.—Because the integrated capabilities are national and even international in scope, a State or local government location is not appropriate. However, State and local governments may contribute to and use the improved system, and may receive Federal support for development of their own systems.

Public sector, Federal legislative branch.—A legislative branch location for materials information activities will help Congress develop alternative sources of materials data and analyses, and ultimately strengthen the capability of Congress to reach informed and independent judgments on materials-related issues. But a principal location in the legislative branch will be subject to severe institutional and administrative limitations, will not be under the access requirements of the Freedom of Information Act (which does not apply to Congress), and will likely limit use by the executive branch and private sector. This location may also stimulate the burdensome use of congressional subpoena power in obtaining materials data (if Government agencies do not cooperate voluntarily), and probably will not be able to provide adequate funding and personnel. Thus, while existing congressional committees and offices—CRS, GAO, CBO, and OTA—might well be upgraded and strengthened in the materials information area, in part through support of the congressional information system, the Congress does not appear to be a feasible location for a major alternative.

Public sector, Federal quasi-governmental organization.—A location in a Government-chartered corporation or Government advisory body will place responsibility within an independent institution, will be insulated from direct Government control, and therefore may enhance the credibility of data and analyses and increase the willingness of private companies to cooperate. However, a quasi-governmental location is not likely to provide the

authority to acquire necessary materials information from Government agencies, and may impair the ability to operate effectively. This location will probably reduce responsiveness to Government and public needs, and will most likely preclude any significant use by the Congress. While a quasi-governmental organization may be suitable for supporting activities, similar to those suggested for a private sector location, it does not appear to be very feasible for an alternative designed to support actively the public policymaking process.

Public sector, Federal executive branch, - Thus the balancing of advantages and disadvantages clearly suggests the Federal executive branch as a principal location, although supporting or related materials information activities may be located in the private sector, State/local government, the Federal legislative branch, and/or quasi-governmental organizations.

To limit the executive branch possibilities to those consistent with the study focus, additional assumptions are that: (a) there will not be a massive reorganization of Government agencies, although arrangements such as a Department of Energy and Natural Resources could be considered; (b) there will be a distinct entity with some level of responsibility for achieving the integrated capabilities, including possible efforts to organize and integrate the existing Federal Government information systems; and (c) integrated capabilities will not have regulatory or policymaking responsibilities for substantive materials problems and issues.

Given the foregoing assumptions and evaluations of comparative advantages and disadvantages, the range of feasible and representative executive branch institutional locations includes (a) an existing office within an existing agency, (b) a new office within an existing agency, (c) a new executive agency, and (d) a new independent agency or commission. Each of these locations can then be combined

with other important institutional components to create an overall institutional arrangement. These other institutional components include the following:

- scope of responsibilities with respect to the level of capability, e.g., referral, statistical, forecasting, and/or analytical, and the ability to make recommendations, promulgate rules and regulations, and take actions to carry out objectives;
- data collection and protection authorities with respect to the extent which existing authorities of relevant agencies will provide the basic framework, or whether new authorities will be needed and if so, to what extent will additional mandatory data collection be called for;
- data validation with respect to the extent which existing authorities will provide the basic framework, or whether new authorities and/or techniques with stronger provisions will be needed;
- data access with respect to the conditions under which the public, Congress, and the President will have access ;
- user charges; and
- oversight.

2. Selected Implementation Alternatives

Alternatives for implementing the integrated capabilities are derived from a combination of the appropriate legislative/executive implementing options and institutional arrangements. Seven alternatives were selected to meet the following objectives:

- Represent a series of progressively stronger legislative/executive actions to organize and integrate the existing Federal Government materials information systems in order to meet policymaking needs for improved information;

- Through institutional change and systems improvement, add coordination and some centralization to the decentralized materials information systems now operative;
- Provide materials policy makers (both public and private) with aggregated materials information on a timely and convenient basis, but with sufficient checks and balances built in to protect against the abuse or misuse of the detailed (and frequently sensitive) data on which such information is based;
- Build upon, improve, and use more effectively (but not necessarily supplant) existing systems;
- Utilize where appropriate the outputs of State/local government and private sector materials information systems, without undertaking to organize and integrate non-Federal systems; and
- Provide Federal support for related improvements in State/local government and private sector systems, especially in the latter case with respect to scientific/technical information needed for materials R&D and engineering design,

The seven institutional arrangements summarized in tables VI-9 and VI-10 include:

1. Materials Information Referral Office,
2. Materials Information Coordinating Board,
3. Bureau of Materials Statistics,

4. Bureau of Materials Statistics and Forecasting,
5. Materials Statistics Administration,
6. Materials Statistics and Forecasting Administration, and
7. Materials Information Commission.

Arrangements 1 and 2 are representative of the level of incremental improvement and change and are consistent with systems approach A, coordinated evolution, Arrangements 3 and 4 are representative of the level of intermediate improvement and change and are consistent with systems approach B, step-by-step upgrading. Arrangements 5, 6, and 7 are representative of the level of maximum improvement and change. Arrangements 5 and 6 are consistent with systems approaches B and C. Arrangement 7 is consistent with approach C top-down change, except for the provisions for detailed data bases within the new institution. Without this provision it would be completely consistent. This was rejected as a viable systems approach because of the large amount of data and information systems already in existence. To duplicate these information systems would be very costly. In addition, it would be difficult to accomplish because of the lack of expertise and knowledge needed to collect and validate the data. The existing institutions are having problems obtaining the needed manpower for their own purposes. Table VI-10 shows which key components or information services are consistent or compatible with each institutional alternative and systems approach. Details for each institutional alternative are summarized in table VI-11,

Table VI-9.—Summary of the Institutional Arrangements

1. Materials Information Referral Office: To establish a materials information referral service (to be located in an existing agency) through which users can locate existing materials information and data bases.

2. Materials Information Coordinating Board: To establish a materials referral service, as in 1; to make recommendations and propose guidelines for improvement of existing materials information systems, coordination of existing systems, standardized reporting forms, data classification and protection, etc.; to facilitate the development of effective information interchange between existing agencies; and to provide support for private sector development of modeling/analytical, clearinghouse/referral, and necessary statistical/forecasting capabilities

3. Bureau of Materials Statistics: To establish an office or bureau (within an existing agency) which will include a materials information clearinghouse/referral service (through which users may locate and obtain materials information), a statistical capability (to provide summaries, trends, and statistics of historical and current materials data), and the necessary data processing/collection support; to facilitate the development of a summary materials data base to facilitate the development of effective information interchange between existing agencies; to provide for reliable and valid materials information through various methods of data verification (including, where necessary, submission of original data from relevant agencies; and to facilitate improvement in relevant activities of existing offices and agencies and private sector development of capabilities, as in 2.

4. Bureau of Materials Statistics and Forecasting: To establish an office or bureau (within an existing agency) which will include the clearinghouse/referral, statistical, and data processing/collection capabilities of 3, but with additional capability for materials forecasting/analysis; to facilitate the development of a summary materials data base and effective information interchange (between existing agencies), as in 3; to provide for methods of data verification, as in 3; and to facilitate improvement in relevant activities of existing offices and agencies and the private sector, as in 3.

5. Materials Statistics Administration: To establish a new executive agency which will include the clearinghouse/referral, statistical, and data processing/collection capabilities only (no forecasts, etc.); to facilitate development of a summary materials data base and information interchange (between existing agencies), as in 4, but with additional authority to promulgate rules and regulations for improvement of existing systems, data classification, etc.; to provide for methods of data verification, as in 4, but with additional authority, where necessary, for direct validation of materials data at the original source; and to facilitate improvement in relevant activities of existing offices and agencies and the private sector, as in 4.

6. Materials Statistics and Forecasting Administration: To establish a new executive agency which will include the clearinghouse/referral, statistical, and data processing/collection capabilities of 5, but with additional capability for materials forecasting/analysis; to facilitate the development of a summary materials data base and effective information interchange (between existing agencies) with additional authority, as in 5; to provide for methods of data verification with additional authority, as in 5; and to facilitate improvement in relevant activities of existing offices and agencies and the private sector, as in 5.

7. Materials Information Commission: To establish a new independent agency or commission which will include the clearinghouse/referral, statistical, data processing/collection, and forecasting/analysis capabilities of 6; to facilitate the development of a summary data base, as in 6, but with additional authority for collection of materials data (superseding existing authorities of relevant agencies) so as to establish a detailed data base; to facilitate the development of effective information interchange (between existing agencies); as in 6; to provide for methods of data verification, as in 6; and to facilitate improvement in relevant activities of existing offices and agencies and the private sector, as in 6.

Note: Legal authorities for alternative 1-6 are not proposed to supersede those of existing agencies.

Table V1-10.-Summary of Key Components of Implementation Alternatives

	Materials Information Referral Office	Materials Information Coordinating Board	Bureau of Materials Statistics	Bureau of Materials Statistics and Forecasting	Materials Statistics Administration	Materials Statistics and Forecasting Administration	Materials Information Commission
Compatible with Systems Approach A							
Establish a materials referral service	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Improve relevant activities in legislative offices (e.g. CBO, CRS, GAO) and executive agencies (e.g. DoI, DoC, DoA)	No	Yes	Yes	Yes	Yes	Yes	Yes
Upgrade Government support for private sector development of necessary capabilities	No	Yes	Yes	Yes	Yes	Yes	Yes
Establish effective information interchange between existing agencies	No	Yes	Yes	Yes	Yes	Yes	Yes
Compatible with Systems Approaches B and C							
Establish a new office/agency with clearinghouse/referral and statistical capabilities	No	No	Yes	Yes	Yes	Yes	Yes
Establish a summary materials data base in the Office/agency requiring submission of summary data from existing agencies	No	No	Yes	Yes	Yes	Yes	Yes
Provide the office/agency with data verification authority requiring, where necessary, submission of original data from existing agencies	No	No	Yes	Yes	Yes	Yes	Yes
Include forecasting/analytical capability within the office/agency	No	No	No	Yes	No	Yes	Yes
Provide a new executive agency with authority to issue rules and regulations and, where necessary, for direct verification of materials data at the original source	No	No	No	No	Yes	Yes	Yes
Compatible with Systems Approach C except for the detailed data base)							
Provide a new independent agency with authority for collection of materials data from original sources (superseding authority of existing agencies)	No	No	No	No	No	No	Yes
Establish a detailed materials data base in the independent agency	No	No	No	No	No	No	Yes

Arrangements

	1	2	3	4	5	6	7	
	Materials Information Referral Office	Materials Information Coordinating Board	Bureau of Materials Statistics	Bureau of Materials Statistics & Forecasting	Materials Statistics Administration	Materials Statistics Forecasting Administration	Materials Information Commission	
Location	Existing or new office within existing agency	Existing or new office within existing agency	New office within existing agency	New office within existing agency	New executive agency	New executive agency	New independent agency or commission	
Directorship	Existing (parent) agency should afford sufficient opportunity to develop and/or acquire the necessary resources, competence, capability, and reputation.				None	None	None	
	Director appointed by agency or office head	Chairman and members selected from agencies & user groups, may be appointed by President	Director appointed by President with Senate advice and consent	Director appointed by President with Senate advice and consent	Administrator appointed by President with Senate advice and consent	Administrator appointed by President with Senate advice and consent	Commissioner appointed by President for fixed terms of office with Senate advice and consent	
Source of Authority	OMB directive, Executive/agency order, and/or Act of Congress	OMB directive, Executive/agency order, and/or Act of Congress	Act of Congress	Act of Congress	Act of Congress	Act of Congress	Act of Congress	
General Authority	The general scope of authority for all alternatives includes the acquisition and analysis of information and related data processing/collection support necessary for implementation of designated capabilities and options in areas relating to materials/commodities and supply/utilization life cycles, including secondary factors (e.g. labor, capital, energy, environment, price, technology, and transportation) and interrelationships (e.g. between materials, energy, and the environment)							
	Authority to make recommendations (and take actions, to the extent possible under applicable law) for improvement of existing Federal Government materials information systems, coordination and integration of existing systems, standardization of existing systems, improvement of reporting forms and data classification, etc. Authority to provide support for private sector development of capabilities and services necessary.				Authority to promulgate rules and regulations to carry out the above activities			
Specific Authority/Capabilities	Referral	Referral	Referral Clearinghouse Statistical	Referral Clearinghouse Statistical Forecasting/analytical	Referral Clearinghouse Statistical	Referral Clearinghouse Forecasting/analytical	Referral Clearinghouse Statistical Forecasting/analytical	
Data Collection and Protection	rely primarily on the existing authorities of relevant agencies (usually a mix of voluntary and mandatory) to existing protections of data sources and trade secrets and other proprietary, confidential, or privileged information.							
	Authority to require that relevant agencies submit summary data (in aggregated form) to the office/agency, subject to existing or new protections of data sources. Authority to collect original data that is not otherwise available from existing sources.				Authority to promulgate rules and regulations for collection of original data by other agencies.			
	Authority to require that agencies submit detailed data							
	Authority to use statistical techniques, sampling, and other methods of data analysis and where necessary, to require agencies to undertake, where necessary, direct collection of materials data at the original source subject to existing or new protections of materials data at the original source to new or existing protections							
Access	The Freedom of Information Act (FOIA) sets the basic guidelines for access to data in all configurations. Data/information not falling within an exempted category would be available to the public, Congress, and the President either directly from the office/agency and/or, in the case of Congress, via the CBO (or some other lead congressional office) and, for the President, via OMB (or some other lead executive office).							
Data Access	The Freedom of Information Act (FOIA) sets the basic guidelines for access to data in all configurations. Data/information not falling within an exempted category would be available to the public, Congress, and the President either directly from the office/agency and/or, in the case of Congress, via the CBO (or some other lead congressional office) and, for the President, via OMB (or some other lead executive office).							
User Charges	The Freedom of Information Act also sets the basic guidelines with regard to user charges for public access, which may be no greater than the cost of search plus reproduction. In general, there would be no charge for standard referral services, with the charge for other services no greater than the cost of search plus reproduction. Special services for other agencies or private users may be charged on cost-reimbursable or subscription basis.							
Oversight	All configurations would be subject to normal oversight of OMB and congressional committees, supplemented by GAO (which would be required to maintain continuous monitoring of office/agency activities, in addition to any investigators or data audits requested by Congress).							