

OCIO:3-108

ADMINISTRATIVE COMMUNICATIONS SYSTEM U.S. DEPARTMENT OF EDUCATION

DEPARTMENTAL DIRECTIVE

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I. Purpose

The Office of the Chief Information Officer (OCIO) developed this directive to establish policy and responsibilities for individuals and entities that participate in the U.S. Department of Education's (Department or ED) information technology (IT) investment management processes, as well as for offices acquiring software.

Federal statutes such as the Clinger-Cohen Act of 1996 require agencies to improve mission performance by implementing a capital planning and investment control (CPIC) process for selecting, controlling, and evaluating IT investments. Enactment of this legislation and its accompanying regulations requires agencies to establish accountability, reduce duplicative spending, eliminate wasteful management, and maximize the value of IT investments.

This directive references the software management and acquisition (SMA) policy contained in Administrative Communications System Handbook OCIO-08, the <u>Handbook for Software</u> <u>Management and Acquisition Policy</u>. The SMA policy sets forth steps the Department will take to comply with Executive Order 13103 and the implementing guidelines that were issued by the Chief Information Officers Council.

II. Policy

It is the Department's policy that all information technology initiatives support and are aligned with the Department's business objectives and Strategic Plan, minimize duplication of investment efforts, and are carefully selected and managed in a way that demonstrates careful decision making, with the greatest possible partnership and resource sharing.

OCIO manages the Department's IT investment management (ITIM) process to ensure consistency with all applicable legislation as well as the Department's enterprise architecture, information management, information assurance, and related standards and processes. The ITIM process is iterative and uses a cycle of IT project selection, control, and evaluation to maximize desired business outcomes. Tools such as business cases and "earned value" metrics allow IT projects to be analyzed for success throughout their life cycles. Project managers submit business cases and other core deliverables to OCIO for review and clearance. OCIO collaborates with Principal Offices during the review process to ensure that each IT acquisition is aligned with the Department's policies and standards and is driven by sound business needs and requirements as defined in an approved business case.

The Department also works diligently to prevent and combat computer software piracy as well as ensure all software installations are properly licensed, so that it does not acquire, reproduce, distribute, or transmit computer software in violation of applicable copyright laws.

Information technology initiatives are incorporated into the Department's IT portfolio and are monitored by ED's Planning and Investment Review Working Group (PIRWG), Investment Review Board (IRB), and the Office of Management and Budget (OMB).

III. Authorization

Beyond the business value of an effective investment management process, there are various legislative and regulatory requirements for implementing ITIM. The Clinger-Cohen Act, OMB Circular A-130, and other legislative reforms emphasize the need for Federal agencies to significantly improve how they plan, select, fund, control, and evaluate IT initiatives. The Clinger-Cohen Act establishes clear accountability for information resource management by vesting agency Chief Information Officers with the authority and management responsibilities necessary to advise agency heads.

This directive codifies and implements IT investment management practices as specifically described in the Department's *IT Investment Management Process Guide* (item E, below). The content of the *IT Investment Management Process Guide* is updated yearly based upon process or policy changes and guidance mandated by OMB, or upon changes and refinements to the Department's IT investment management practices as promulgated and instituted by the Department's Investment Review Board (IRB) (see item O on page 7).

The following Federal laws, regulations, and guidance mandate that agency heads implement a process for maximizing the value of IT initiatives, assess and manage the risks of IT acquisitions and assets, and quantitatively benchmark the performance of IT activities:

- A. P.L. 104-106

 Clinger-Cohen Act of 1996

 http://www.ed.gov/policy/gen/leg/cca.html
- B. Office of Management and Budget (OMB) Circular A-130, as revised November 30, 2000
 Management of Federal Information Resources

http://www.whitehouse.gov/omb/circulars/a130/a130trans4.html

C. Office of Management and Budget (OMB) Circular A-11, Part 7, June 2005 **Planning, Budgeting, Acquisition, and Management of Capital Assets** http://www.whitehouse.gov/omb/circulars/a11/current_year/s300.pdf

The following Handbook establishes Department procedures on software management and acquisition.

D. U.S. Department of Education Handbook, September 30, 2004

Handbook for Software Management and Acquisition Policy

http://connected.ed.gov/doc_img/acs_hb_ocio_08.doc

The following references provide supplemental information concerning Federal investment management policy, and the process as it is conducted at the Department (items E through H).

E. U.S. Department of Education, September 2005

IT Investment Management Process Guide

http://wdcrobiis08.ed.gov/doc_img/itimprocessguide.doc

- F. U.S. Department of Education, Office of the Chief Information Officer, September 2004 Procuring Electronic and Information Technology (EIT) In Conformance with Section 508 of the Rehabilitation Act of 1973, as amended http://connected.ed.gov/doc_img/acs_ocio_3_105.doc
- G. U.S. Department of Education Directive, December 2, 2005

 Lifecycle Management (LCM) Framework

 http://wdcrobiis09/doc_img/acs_ocio_1_106.doc
- H. U.S. Department of Education, January 2005 **ED-EA Future State Visions** http://connected1.ed.gov/po/ea/docs/vision.ppt
- I. Government Accountability Office, GAO-04-394G, March 2004
 Information Technology Investment Management, A Framework for Assessing and Improving Process Maturity
 http://www.gao.gov/new.items/d04394g.pdf
- J. Government Accountability Office/AIMD-99-32, December 1998 Leading Practices in Capital Decision Making http://www.gao.gov/special.pubs/ai99032.pdf
- K. General Services Administration, Office of the Chief Information Officer, June 2003 GSA IT Capital Planning and Investment Guide http://www.gsa.gov, then search for document title

IV. Applicability

This directive applies to all Department Principal Offices and other Department entities that own, direct, maintain, or operate information technology in support of the Department, and to all Department employees and contractors utilizing the Department's owned IT equipment and software, whether connected or not to the Department's Education Network (EDNet), with exception to specific security IT assets covered or mandated by Federal directives outside of the Department (i.e., Homeland Security Presidential Directive 12 and Federal Information Processing Standard 201).

V. Definitions

A. **Baseline Change Request.** A request made by the project manager of an IT investment to the project's cost and schedule of milestones because one or more of three things have occurred: (1) change in scope; and/or (2) change in funding; and/or (3) change to contract award date.

- B. **Business Case.** The documentation for an IT initiative or investment (see items L and M, below) that defines what is going to be done, why it is worth doing, how it will be accomplished, what resources will be required, and how many months or years the investment will be needed. A business case allows governing bodies that review the initiative/investment, such as the PIRWG, to screen and validate it for overall business merit. A *full business case* is required for major and significant IT initiatives, and is a reduced version of OMB's Exhibit 300 (see item I). Initiatives/investments that fall below the threshold of major or significant complete a smaller substantiating document called a *supportive business case* (for a description of IT initiative classifications, see the IT Investment Management Process Guide).
- C. *Chief Information Officers (CIO) Council*. The principal interagency forum for improving practices in the design, modernization, use, sharing, and performance of Federal information resources. Among other roles, the CIO Council is the primary forum for improving executive agency practices regarding software acquisition, use, and prevention of unauthorized products.
- D. Capital Planning and Investment Control (CPIC). A decision-making process for ensuring that IT investments integrate strategic planning, budgeting, procurement, and management of IT in support of agency missions and business requirements. The term comes from the Clinger-Cohen Act of 1996 and is used interchangeably with ITIM to describe planning for and managing information technology.
- E. **Control Phase.** An ongoing monitoring process within the ITIM cycle that manages IT initiatives against schedules, budgets, and performance measures. Lessons learned from the *Control Phase* are incorporated into the *Select Phase* to further refine and improve the formulation and maintenance of the ED IT portfolio.
- F. **Deliverable Reviewers.** Staff from various business and technical areas (e.g. OCIO/Investment and Acquisition Management Team, OCFO/Contracts and Acquisitions Management) who are responsible for reviewing and approving the content of all required deliverables, because they have specific knowledge of the requirements areas.
- G. *Earned Value Management (EVM)*. A project (investment) management tool that measures the value of work on a project against its cost. EVM integrates cost, schedule and technical performance measures to monitor and control project resources and compare project results with one set of metrics. Qualities and operating characteristics of earned value management systems are described in ANSI/EIA Standard 748-1998, *Earned Value Management Systems*. Consult the Department's IT Investment Management Process Guide to learn when to incorporate EVM in major IT development, modernization, and enhancement investments.
- H. *Enterprise Architecture (EA)*. ED's enterprise architecture is a plan and a process for linking the Department's business needs with the best available technology. EA facilitates both the definition and achievement of ED's future state vision. The EA

encompasses business process, applications, data and technology areas. EA supports the planning, design, and implementation of changes in each area. EA also provides the tools and methods for supporting priority setting and investment decision-making about changes in these areas, as well as the templates and documentation needed to secure OMB concurrence with investment project proposals. ED's EA is documented in the form of narrative text, inventories, mappings, and models. These products are maintained and published in a variety of ways, including Web publication, databases, presentations, and documents, depending on what is most effective for the purpose at hand.

- I. *Exhibit 300*. The cost, schedule, and program management document submitted to OMB by the Department to substantiate each of its major information technology projects. Each business case substantiates an IT investment to the Department. Each Exhibit 300 substantiates a <u>major</u> IT investment to OMB (only major investments require an Exhibit 300).
- J. **Evaluate Phase.** A review process that takes place after an IT initiative is operational, to determine whether the investment meets expectations. Lessons learned are incorporated into the *Select* and *Control Phases*.
- K. *Information Technology*. As defined by the Clinger-Cohen Act of 1996 (sections 5002, 5141, and 5142), information technology means any equipment or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the executive agency. For purposes of the preceding sentence, equipment is used by an executive agency if it is used directly or by a contractor under a contract with the agency that (i) requires the use of such equipment, or (ii) requires the use, to a significant extent, of such equipment in the performance of a service or the furnishing of a product. The term *information technology* includes computers, ancillary equipment, software, firmware and similar procedures, services (including support services), and related resources, but does not include any equipment that is acquired by a Federal contractor incidental to performance of a Federal contract.
- L. *IT Initiative*. A new effort, program, project, system, service, or expenditure that pertains to a discrete IT application, technology, or management process. IT initiatives use information technology to directly or indirectly further, improve, or help achieve the Department's mission, goals, priorities, and performance targets. Once funded and operational, an IT initiative becomes an IT investment (see item M).
- M. *IT Investment*. An expenditure involving information technology as defined in the Clinger-Cohen Act, including all lifecycle cost categories such as equipment, software, training, and information or application system design, development, and maintenance regardless of whether such work is performed by Government employees or contractors.

- N. *IT Portfolio*. The collection of IT investments approved by the Department's Investment Review Board (IRB) to address the Department's strategic and programmatic objectives, and to support managerial and administrative functions.
- O. *Investment Review Board (IRB)*. The executive decision-making body for the Department's IT investment management process. The IRB is composed of the senior officers of Principal Offices and other key personnel. It sets priorities and objectives used to assess IT initiatives and is responsible for overseeing the entire IT portfolio of the Department.
- P. **Lifecycle Management (LCM).** The coordination of activities associated with implementation of information systems from conception through disposal, which includes defining requirements, designing, building, testing, implementing, and disposing of systems. Consult the <u>Lifecycle Management Framework</u> directive on roles, responsibilities, and required deliverables that result from the lifecycle management process.
- Q. *Planning and Investment Review Working Group (PIRWG)*. The Department entity that serves as the working body of the Investment Review Board, coordinating the Department's IT investment management process and procedures. The PIRWG reviews all investments from an enterprise perspective and makes recommendations to the Chief Information Officer (CIO) for select, control, and evaluate decisions.
- R. **Post-Implementation Review (PIR).** A process for tracking and measuring the impact and outcomes of implemented or canceled IT initiatives. The PIR process is typically conducted and completed by four groups in association—OCIO's Investment and Acquisition Management Services (IAMS), the project sponsor, project stakeholders, and the PIR evaluation team—each with assigned actions. A PIR is not considered an audit of a project, though it bears some hallmarks of one. A PIR is the starting point and an input for the Evaluate Phase of the ITIM process, and is conducted on development projects 3 to 9 months after implementation. Its purpose is to examine the differences between estimated and actual investment costs, returns and risks; ascertain actual IT investment contributions; identify deficiencies; and determine whether modifications are needed. Each PIR has a dual focus, in that it both provides an implementation assessment of the system, including an evaluation of the development process, and indicates the extent to which the Department's IT investment management processes are sustaining or improving the success rate of IT projects. The PIR focuses on verification and validation of seven primary areas: (1) impact on goals and strategic objectives; (2) impact on stakeholders; (3) cost and schedule variances; (4) operational performance; (5) architectural compliance; (6) project risk management; and (7) security.
- S. *Principal Office Coordinator*. The individual nominated by a Principal Office to serve as coordinator of the Office's portfolio of supportive IT investments in dealings with the CIO, PIRWG and IRB.

- T. **Project Management.** The activities necessary to ensure that an IT project progresses toward achievement of its objectives, in accordance with planned or revised cost, schedule, and technical baselines, as well as performance outcomes.
- U. **Project Manager / Program Manager.** According to the "Project Management Body of Knowledge" (PMBOK) definition, a project is a unique undertaking with a beginning and an end; once the project is deployed or implemented, the project manager is replaced with a program manager. These persons may be the same individual. A project manager and a program manager must be identified for each ED IT investment and will be responsible and accountable to the PIRWG, and to OCIO/IAMS working on behalf of the PIRWG, for all project management activities. Credentialing requirements for managers of major projects are detailed in OMB's Federal IT Project Manager Guidance Matrix.
- V. **Select Phase.** One of the three phases of the IT investment management life cycle, the Select Phase is conducted yearly to determine which IT initiatives to undertake, subject to the availability of funding. The Select Phase allows the Department to link its priorities to candidate projects to be funded, ensuring that the Department funds only those IT investments that best support mission needs and have been adequately analyzed for risks and returns.
- W. **Stage Gate Reviewer.** The individual responsible for authorizing a project's progress into the next stage of its lifecycle, based on completion of reviews and deliverables for each stage. Consult the <u>Lifecycle Management Framework</u> directive for information about *stage gates* and *stage gate reviews*.
- X. **Technical Review Board.** The review authority instituted by the CIO to govern technical aspects of development of new IT systems that might affect the performance of the ED network (EDNet) infrastructure and its many client and enterprise systems, focusing on the myriad tactical aspects of interoperability between IT systems and the ED network.

VI. Responsibilities

Effective IT investment management requires consistent and coordinated approaches to decision-making through a set of policies, processes, plans, procedures, and structures. This section defines specific responsibilities as they apply to the entities that have a role in the management of the Department's IT investments: ¹

A. The **Investment Review Board (IRB)** will:

1. Act as the executive decision-making body for the Department's IT investment management (ITIM) process.

¹ This directive is written from a Departmental perspective. While all Department IT investments are subject to review by the PIRWG, as a performance-based organization (PBO) Federal Student Aid (FSA) responds to a legislative mandate. FSA's processes are in concert with, feed into, and complement the Department's ITIM process. FSA will leverage and synchronize its ITIM processes with those of the Department.

- 2. Manage the Department's entire IT portfolio and provide strategic planning leadership.
- 3. Evaluate the Department's IT investments to ensure that IT decisions are consistent, valid and transparent; an effective use of taxpayer dollars; consistent with the Department's enterprise architecture; and align with the Department's strategic goals and objectives.
- 4. Review the IT investment proposals and recommendations of the CIO and finalize all decisions and corrective actions, ranging from initiation and modification through continuation or termination of an investment.
- 5. Approve budget decisions pertaining to the Department's major and significant IT initiatives.²
- 6. Provide feedback to the CIO concerning the evolution of the ITIM process.

B. The **Chief Information Officer (CIO)** will:

- 1. Monitor and evaluate the performance and strategic alignment of investments in the IT portfolio and advise the IRB on whether to initiate, continue, modify, or terminate IT investments.
- 2. Present the proposed IT portfolio, and the select, control, and evaluation findings pertaining to it, to the IRB for final evaluation and endorsement.
- 3. Develop, maintain, and facilitate creation and implementation of a sound target enterprise architecture with which IT investment management decision-making is aligned.
- 4. Establish the Department's vision of customer service for IT investments, as it relates to OCIO's support for or provisioning of Department-utilized IT resources.
- 5. Maintain and enhance the Information Resource Management (IRM) Strategic Plan and oversee incorporation of this strategic guidance into the Department's ITIM processes.
- 6. Conduct a quarterly IT investment *Control Review*.³
- 7. Work with Executive Offices during the annual budget call to ensure that business cases and budget submission numbers match.
- 8. Establish Department procedures for the management of software licensing.⁴

² Criteria used in categorizing an IT initiative as either "major," "significant" or "supportive" are found in the <u>IT Investment Management Process Guide</u>.

³ Select, Control, and Evaluate phases of the ITIM process are described in the IT Investment Management Process Guide.

9. Monitor all Department-approved standard licensed software media.

C. The Planning and Investment Review Working Group (PIRWG) will:

- 1. Focus on how the Department's IT portfolio supports the Department's business objectives and operations, as well as its alignment to enterprise-wide strategies and the Department's target enterprise architecture.
- 2. Advise the CIO on strategic IT investment management issues and ensure strategic alignment of IT projects, making recommendations to the CIO to continue, modify, or terminate investments in the Department's IT portfolio.
- 3. Analyze, at an IT portfolio (line-of-business) level, proposals for investments, project funding requests, and project progress and performance.⁵
- 4. Provide a forum at which IT investments of Department program offices can be held accountable to their established performance measurement baseline.
- 5. Meet as needed to review and analyze IT investments in the context of various IT investment management phases and processes.

D. The OCIO Investment and Acquisition Management Services (IAMS) team will:

- 1. Support and coordinate the Department's ITIM phases (*Select*, *Control*, and *Evaluate*) and associated activities, processes, and procedures.
- 2. Work with OCIO's Enterprise Architecture Team and the Department's Technical Review Board to ensure that IT investment management aligns with the Department's lifecycle management process.
- 3. Synthesize IT investment information for the PIRWG, and coordinate the PIRWG's synthesis of ITIM data and recommendations to the CIO and IRB.
- 4. Disseminate ITIM data requirements and guidance to IT project managers.
- 5. Provide liaison support to IT project managers regarding development and maintenance of project metrics and business case justifications.
- 6. Develop, manage, coordinate and facilitate ITIM business tools, templates, and other mechanisms that assist the gathering and reporting of IT project documentation.
- 7. Lead the development and improvement of efforts associated with the ITIM process.

⁴ Refer to Handbook OCIO-08, <u>Handbook for Software Management and Acquisition Policy</u>.

⁵ OCIO's IT investment management and enterprise architecture staff, as well as the Department's *Technical Review Board*, will conduct a more thorough inspection of each project that focuses on tactical, specific, detail-oriented decision making.

- 8. Coordinate the yearly submission to OMB of an Exhibit 300 for each major IT investment.
- 9. Review acquisition plans submitted by Executive Offices to ensure alignment with appropriate business cases.

E. The Department's **Enterprise Architecture staff** will:

- 1. Review investments for adherence to the Department's enterprise architecture.
- 2. Determine the scale and nature of the investment's impact on the Department's current and future enterprise architecture environment.
- 3. Assist project managers to identify and use previously proven solutions.

F. The **OCIO Information Technology Services (ITS)** team will:

- 1. Ensure agency compliance with copyright laws protecting computer software and ensure that only authorized software is acquired and used on Department computers.
- 2. Register in the OCIO Software Library all software that results from award of a contract.
- 3. Maintain in a secure location a software library for approved software media, together with a current and updated software license tracking system.
- 4. Conduct an annual assessment of OCIO's software management procedures and practices, and an inventory of installed software and related license agreements, purchase invoices, and other documentation showing evidence of licensed software currently in use.
- 5. Provide training (directly or through its agents) to existing and new employees on compliance with Executive Order 13103 (Computer Software Piracy)⁶ and the Department's software management and acquisition policy.
- 6. Circulate reminders of this software management and acquisition policy on an annual basis, and review this policy annually in the Department's Security Awareness Program.
- 7. Develop performance measures to monitor the Department's compliance with Executive Order 13103, CIO Council guidance on software management, and this SMA policy on a quarterly basis.

⁶ Executive Order 13103 is Attachment A to the Department's Handbook on Software Management and Acquisition Policy.

8. Run quarterly reports on software applications to ensure the Department is in compliance with this SMA policy.

G. The **project or program manager** of an investment will:

- 1. Submit to the designated acquisition officer all work statements or solicitations that anticipate award of a new contract.
- 2. Manage day-to-day operations of an IT investment to ensure that it meets expectations, by monitoring progress against cost and schedule milestones and performance targets.
- 3. Work with the authorized acquisitions group to ensure that designated major IT investments contain contract language requiring use by contractors of an earned value management system (EVMS) that complies with ANSI/EIA-748-A.⁷
- 4. Be responsible, in conjunction with the designated Contracting Officer, for determining and implementing the level and type of performance monitoring required for the investment, after considering the risk associated with the work and the contractor.
- 5. Prepare project documentation and other required materials to keep appropriate ITIM decision-making principals fully informed of the project's status. Project documentation may include earned value metrics, such as monthly and quarterly cost and schedule updates; a project business case and annual updates to it; an OMB Exhibit 300; and project baseline change requests as needed.
- 6. Provide and update, within the Department's IT portfolio repository or as otherwise requested, such project documentation materials as shall be requested by OCIO/IAMS or the PIRWG on a monthly, quarterly or yearly basis, to provide these entities with up-to-date, accurate project data.
- 7. Appear before the PIRWG or IRB as needed to provide a project progress report and answer questions about the investment.
- 8. Initiate action to prevent slippage of project cost and schedule projections. Implement corrective actions as approved by the IRB through the ITIM process.
- 9. Participate in a post-implementation review (PIR) of the investment.

⁷ The Department uses *Earned Value Management* (EVM) as a performance-based management tool for major IT development investments, consistent with the requirement of OMB Circular A-11, Part 3, that Federal agencies use a management approach compliant with ANSI/EIA-748 to implement a performance-based management system. ED is committed to ensuring contractor use of an approved EVMS at the time of award of a major IT development initiative. EVM data is collected and reported monthly and used as a basis for making future IT investment decisions. Consult the *ED Earned Value Management Policy Guidance* section of the Department's <u>IT Investment Management Process Guide</u> for further information on using EVM.

10. Create deliverables that adhere to the Department's lifecycle management process. The project or program manager will ensure that adequate business and technical reviews are executed and reviewed by deliverable reviewers and approved by stage gate reviewers.

H. The **Principal Office Coordinator** for IT investments will:

- 1. Be nominated by and serve the Principal Office in maintaining its portfolio of *supportive business cases* (see footnote 2 on page 9).
- 2. Assist Principal Office project managers who have *supportive business cases*. Serve project managers as a reference point for guidance concerning development of a *supportive business case*, and assist as necessary in entering or updating project information in the Department's IT portfolio repository.
- 3. Assist in providing such information concerning a *supportive business case* as may be requested by OCIO, the PIRWG, or the IRB.

I. Software Licensing Responsibilities.

Please reference the <u>Handbook for Software Management and Acquisition Policy</u>, page 7, section H, for specific responsibilities.

VII. Acronym Glossary

CAM Office of the Chief Financial Officer, Contracts and Acquisitions

Management

CIO Chief Information Officer

CPIC Capital Planning and Investment Control

EA Enterprise Architecture

ED United States Department of Education

EVM Earned Value Management

IAMS Office of the Chief Information Officer, Investment and Acquisition

Management Services

IRB Investment Review Board

ITIM Information Technology Investment Management

LCM Lifecycle Management

OMB Office of Management and Budget

PIRWG Planning and Investment Review Working Group

PIR Post-Implementation Review