

PART 4. System Management

Chapter 6 Asset Management

The IT Asset Management Architecture defines the policies, standards, and guidelines required for the tracking and reporting of assets owned by the government entity.

6.1 Vision

The State of Oregon will have an IT asset management program that collects and provides information to:

- Report on the “state of the state’s” IT assets at any given point in time
- Track IT assets and determine the total cost of ownership throughout the asset’s life cycle
- Leverage the state’s purchasing power by knowing the state government-wide need, and the volume and timing of need for future IT hardware and software purchases
- Ensure software license optimization and compliance
- Establish an initial, current and disposal value for the state’s IT assets
- Plan for a common, shared, state government-wide information technology infrastructure; and
- Acquire the information needed for state government-wide information resources management decision-making

6.2 Scope and Business Rationale

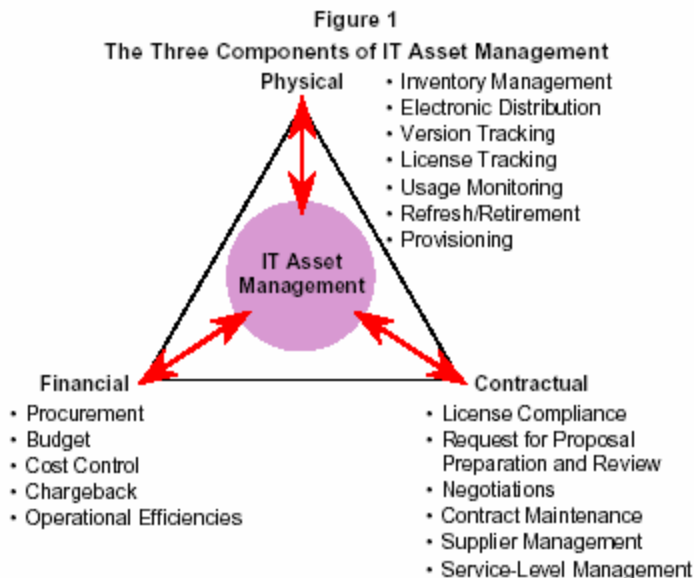
In response to the budget crisis and in support of the Governor’s priorities relating to government efficiency and effectiveness, the State Enterprise Information Resources Management Strategy and to fulfill state obligations under ORS 184.473-184.475 - the Department of Administrative Services (DAS) and state agencies must do what we can to gather information about our existing IT environment to better understand what we are spending on IT and how those IT investments are performing over time.

Achieving both the Enterprise and Agency goals will provide Oregon state government enhanced abilities to:

- Make informed IT planning, procurement and investment decisions
- Calculate IT asset value and understand the total cost of ownership (TCO) of those assets
- Manage the acquisition and maintenance of key asset types, including hardware, software, business systems, and data
- Optimize software license usage and comply with software license requirements
- Manage hardware and software maintenance contracts
- Manage leased assets
- Monitor compliance with IT standards
- Plan for technology migration projects
- Allocate support resources efficiently and effectively
- Protect and secure IT assets
- Provide timely and accurate financial reports
- Ensure adequate Insurance coverage, and business continuity and recovery plans exist

6.3 Context and Diagrams

There are three primary attributes of IT asset management — physical, financial and contractual. Capturing and integrating physical, financial and contractual data supports the management functions that are necessary to effectively manage and optimize IT asset performance. The focus is on managing the life cycle of these assets not only to reduce costs, but also to reduce liability exposure, improve software compliance and better match use with contract terms. Figure 1 illustrates how the data from each attribute area can be shared and integrated electronically to deliver on the promise of IT asset management.



Source: Gartner Research

6.4 Principles

- IT Investments must be identified, evaluated, and selected so expenditures are made for solutions that are feasible and employ proven and reliable technologies.
- Information technology assets must be employed in ways that achieve the business objectives of the state and its agencies.
- Accurate IT asset management is performed to ensure continued alignment with the State's technical architecture and to assist the State of Oregon in achieving Total Cost of Ownership (TCO) objectives.
- IT asset data is captured in a way that facilitates analysis and reporting.
- IT asset data should be accessible as individual records or aggregated into groups of related items.
- IT asset information detail required for an agency to efficiently and effectively manage its information technology operations (assets) is expected to meet or exceed the level of detail required at the state government-wide level.

- The cost and effort required to manage assets should not exceed the total value of the asset over its lifecycle. Value is based on purchase price plus value added factors like maintenance, ongoing support, disposal, and any potential risk to the state, such as legal or political impact.

6.5 Goals

6.5.1 Enterprise Goals for IT Asset Management

To establish IT Asset Management Architecture and related standards. By following an adopted “best practice approach” to IT Asset Inventory/Management across the enterprise, Oregon state government will be better able to:

- Help accomplish the governor’s priorities, goals and objectives;
- Contribute to earning the public’s trust in government as a steward of the resources that have been entrusted to it;
- Fulfill our shared obligations relating to IT Asset Inventory and total cost of ownership (TCO) under law (ORS 184.473-477);
- Accomplish the goals and objectives outlined in the Enterprise IRM Strategy (August 2002);
- Establish appropriate guidelines for managing key asset types including hardware, software, business systems, and data.

6.5.2 Agency Level Goals for IT Asset Management

- Identify all IT assets; determine where they are located; establish and manage asset lifecycles; understand total cost of ownership; and, determine when and how IT assets should be redistributed/disposed of/retired over time.

6.6 Best Practices & Processes

The following sections contain best practices for IT asset management that have been recommended by industry leaders such as the Gartner Group, or found in state agencies today. These are goals or targets and may not be achievable by or practical for all agencies to adopt.

6.6.1 Adopt a Maturity Model approach to IT Asset Management practices

The maturity model concept comes from Software Engineering Institute’s Capability Maturity Model. The basic idea of this concept is that as organizational processes mature, they develop greater efficiency and effectiveness in delivering a program.

Adopting a maturity model approach to asset management practices will help agencies evolve into effective asset managers. Each successive step yields savings and values resulting in lowered costs, better asset utilization, and reduced risks. Each step delivers building blocks that are needed for subsequent steps. This is an evolutionary process that must develop over time with careful nurturing by management. Efforts to skip levels will be met with great difficulty and will diminish the changes of asset management program success over time.

This best practice is articulated in a Gartner research article titled, “Management Update: IT Asset Management Stages Form the Stairway to Success”, by Patricia Adams, September 10, 2003, Gartner, Inc. To quote that article, “Enterprises should use the ITAM process maturity model to assess their current positioning, and to plot a strategy for sequential improvement by investing in people, processes and technology.”

Progress from level to level requires changes in personnel management, and improvements in processes and technologies. An effective IT asset management program must address organizational barriers, process design issues and internal politics.

Please note that all quotes in the following table are from the article referenced above.

Process Maturity Model for IT Asset Management

Step	Attributes	Goals
<p>1. Chaotic</p> <p>Uncontrolled environment</p> <p><i>30% of enterprises</i></p>	<p>No processes, dedicated people or tools</p> <p>No assigned accountability or accounting for changes</p> <p>Unpredictable services, support and costs</p> <p>Purchasing is ad hoc</p> <p>Unused hardware and software are not controlled</p> <p>Success depends on quality of people, not processes</p> <p>Sub-optimization of efforts occurs</p>	<p>"Just want to know what we own, where it is, and who is using it"</p> <p>One-time activity rather than systematic process</p>
<p>2. Reactive</p> <p>Limited accountability</p> <p><i>45% of enterprises</i></p>	<p>Focus is on asset counting</p> <p>Employs physical inventory and some auto discovery recorded on spreadsheets or in a database</p> <p>Accountability lies with IS organization but there is ineffective change accounting</p> <p>Hardware and software viewed separately, not as single complex asset</p>	<p>Perform annual physical inventory and periodic spot audits</p> <p>Report on asset counts, but cannot produce solid detail data to identify and resolve problems</p>
<p>3. Proactive</p> <p>Life cycle focus</p> <p><i>20% of enterprises</i></p>	<p>There is an IT Asset Program and manager with dedicated staff that reports to IS and finance organizations.</p> <p>ITAM with auto discovery tools is integrated with service desk</p> <p>Use of cross-functional teams for major asset management projects</p> <p>Life cycle management process goes from requisition, to deployment, to retirement</p> <p>Inventory system linked to financial and contractual data</p>	<p>"Clearly defined processes with accountability that detail the practical application of people, processes and tools that support the ITAM Program"</p> <p>Effective change and configuration management processes</p> <p>ITAM projects use repeatable processes that are well defined, adhered to, reviewed, and re-engineered when necessary.</p> <p>ITAM operations manual with asset taxonomy produced and maintained</p>

<p>4. Service Oriented</p> <p>Service level management</p> <p><i>5% of enterprises</i></p>	<p>Metrics are available to measure program value</p> <p>Services are delivered according to SLA-based plans</p> <p>TCO processes in place</p> <p>Automated requisition is integrated with purchasing and ERP systems</p> <p>Just in time inventory practices used</p>	<p>Create SLAs for asset management and use them as a basis for planning</p> <p>Conduct periodic reviews of service delivery quality</p> <p>Institute an enterprise technology refresh plan for replacement and retirement of equipment</p>
<p>5. Value Creation</p> <p>Cost recovery</p> <p><i>< 1% of enterprises</i></p>	<p>There is a cost recovery process</p> <p>Repository, auto discovery and asset-usage tools all in place</p> <p>Seamless integration with strategic systems like HR, accounting, ERP, purchasing, network and systems management, IT service desk, problem and change management tools, and business continuity process</p> <p>Decision support and analytic tools available for mining asset information</p>	<p>Continuous process improvement with improving metrics</p> <p>ITAM data used for problem prevention</p> <p>ITAM is a core business process and business enabler</p> <p>Measurement of efficiency (employee productivity) and effectiveness (customer satisfaction) of business processes across all IT assets in the enterprise.</p>

6.6.2 Adopt a Lifecycle view of IT Asset Management

The second best practice for IT asset management comes from Remedy Corporation in a white paper titled, “Comprehensive Technology Lifecycle Management – the Key to Aligning Information Technology with Business Needs.”

IT Asset Lifecycle Management is the management of an organization’s IT assets through all stages of their lifecycle – planning, acquisition, deployment, management, support, and disposition. According to the article, the benefits of taking a lifecycle approach include:

- Higher return on technology investment by providing the right services to the people who need them when and where they need them.
- Lower costs by achieving optimum utilization of technology resources and leveraging buying power.
- Lowers risk in deploying and updating technology by standardizing processes.
- Ability to adapt to change faster by having knowledge of where assets are located and what configurations they have.
- More effective planning by aligning management of IT with organizational strategic goals

There are six stages in the lifecycle of an IT Asset. The following lists those stages and some of the activities each stage includes:

- **Planning** – defining supporting processes, setting standards for configuration and retention, aligning purchase plans to business goals, collecting aggregate information on intended purchases, and negotiating volume discounts.
- **Procurement** – requisitioning, approving requisitions, ordering, receiving, and validating orders.

- **Deployment** – tagging assets, entering asset information in a repository, configuring and installing assets.
- **Management** – inventory/counting, monitoring usage (some software), managing contracts for maintenance and support, and monitoring age and configuration.
- **Support** – adding and changing configurations, repairing devices, and relocating equipment and software.
- **Disposition** – removing assets from service, deleting storage contents, disassembling components for reuse, surplus equipment, terminating contracts, disposing of equipment, and removing asset from active inventory.

6.6.3 Integrate IT Asset Management and Business Continuity Planning

Include disaster recovery as part of the lifecycle for an IT Asset. Have purchasing/lease records included in the configuration information stored for hardware and software assets. When a disaster occurs, make restoration of the organization's asset management repository one of the activities done early in the process. The organization will have the information they need to order hardware and software for the emergency period or for restoration to normal service.

This practice comes from Gartner in an article titled, "IT Asset Management is Coming of Age", by Patricia Adams, May 22, 2002, Gartner, Inc.

6.6.4 Develop an ITAM Operations Manual and have a user awareness program

Asset management practices must be rolled out to the whole organization and refreshed occasionally to ensure program effectiveness. As the agency's ITAM program is developed it could impact or be impacted by anyone who comes in contact with an IT asset. Program documentation should be created and awareness and training sessions should be held to let users know what responsibilities they have to this program.

In the Gartner article titled, "Developing an IT Asset Management Operations Manual", October 12, 2001, author Patricia Adams recommends creation of an ITAM Operations Manual that summarizes "the scope of an ITAM program and includes the policies, guidelines, standards and processes needed to effectively implement and maintain an asset management strategy."

The manual should:

- Establish program objectives and time frames
- Set program roles, responsibilities and accountability
- Provide an IT asset management team organization chart
- Define the terminology
- Document all corporate policies that impact IT asset usage
- Include company forms
- Document processes for all stages of the IT asset life cycle
- Document the standards and exceptions process
- Provide a list of approved vendors for various types of IT assets

6.6.5 Manage PCs and servers as complex assets

Most organizations start out treating hardware, software, and contracts as separate, independent assets. By treating the hardware as a complex asset with software and contractual attributes, it becomes possible to manage asset performance. Inventory information will be usable to locate where software products are installed. This approach facilitates business continuity, disaster recovery and risk management processes.

6.6.6 Integrate ITAM tools with strategic systems

There are three predominant types of ITAM tools: repository, auto discovery, and software usage monitoring. Invest in these types of tools to assist in the delivery of an IT asset management program. Integrate the use of these tools with other strategic systems like HR, accounts payable/receivable, general ledger, ERP, purchasing, network and systems management, IT service desk, problem and change management tools. The integration provides a linkage of metrics between ITAM and other processes. Data from management and business applications can be used to determine and predict impacts on employee productivity and cost.

6.6.7 Acquire decision support and analytical tools

Basic reporting for asset management will provide information that can be used to aggregate asset counts and assess migration requirements. Decision support and analytical tools can be used to process inventory information for other purposes.

6.7 General Standards

6.7.1 Minimum Information Technology Asset Management Performance Standards

Minimum Information Technology Asset Management Performance Standards are those business actions required to assure the efficiency and effectiveness of state government operations and establish an essential level of management responsibility and accountability for acquiring, deploying, tracking/managing, and disposing of IT-related assets under agency control.

To fulfill Agency obligations under the Statewide IT Asset Management Policy, Agencies will, at minimum:

- Comply with the Statewide IT Asset Inventory/Management Policy.
- Create a formal IT Asset Management Program within the agency and identify an Agency ITAM Coordinator in all agency IT asset inventory/management-related process and procedure documents.
- Create, document and communicate IT Asset Inventory/Management processes/procedures that provide sufficient guidance for agency staff to understand their respective IT Asset Management Program roles, responsibilities, and obligations to the Agency and to DAS/IRMD.
- Create and document standard lifecycles for agency IT assets and mandate the creation of an agency Asset Lifecycle replacement plan to be submitted to IRMD at the same time the agency submits its biennial agency request budget document.
- Create and document process/procedure (manual and automated) agency intends to use to collect, track, and report, at minimum, the information required in the Statewide IT Asset Management Policy Attachment 2 , the "Information Technology Asset Inventory Mandatory Attributes".

Note: IT asset information detail required for an agency to efficiently and effectively manage its information technology operations (assets) is expected to exceed the level of detail required at the state government-wide level.

- Create and document process/procedure agency intends to use to affix an agency or State of Oregon identification tag to:
 - newly purchased IT-related assets (Tagging required prior to deployment in the computing environment)
 - existing capital assets (Tagging required by December 31, 2004. Also requires the issuance and use of a property control number)
 - existing non-capital assets (Tagging required by June 30, 2005.)

(Note: If an agency utilizes agency specific asset tags, the agency shall ensure that the Agency number assigned by the DAS/State Controller's Division is added to the asset tag number/unique identifier (in the database field, spreadsheet cell, etc.) prior to sending/reporting the information to DAS/IRMD.)

- Create and document process/procedure agency intends to use to physically inventory and reconcile IT asset inventory information on hand for:
 - Capital Assets (Inventory must be conducted at least annually in compliance with the Oregon Accounting Manual Requirements. Use of property control number is also required.)
 - Non-Capital Assets (Inventory required prior to the conclusion of each biennium per the Statewide IT Asset Management Policy).

Note: A physical inventory reconciliation report must be reported to DAS/IRMD according to Attachment 5 of the Statewide IT Asset Management policy. Discrepancies should be investigated. Documentation support that a physical inventory has been taken, for all locations, should be retained in the agency's central accounting office.

- Create and document process/procedure agency intends to use to issue IT-related assets (capital and non-capital) to employees, to inventory and update these records on an annual basis, and to review these records to assure that all property is returned to the State upon employee termination or transfer out of the agency.

(Note: The minimum IT asset types to be included in the Agency ITAM program are identified in Attachment 2 to the Statewide IT Asset Management policy, which will be updated periodically by DAS IRMD.)

- Create and document the process/procedure agency intends to use to ensure that appropriate software licensing agreements for software used by agency employees are in place and that the agency is in compliance with those agreements.
- Create and document the process/procedure agency intends to use for deleting data from hard-drives prior to property transfer, exchange, or disposal/surplus.
- Create and document the process/procedure the agency intends to use transfer, exchange or dispose of an IT-related asset (according to the agency established lifecycle).

6.7.2 Minimum Attribute Tracking Requirement Standards

Refer to Attachment 2 of the Statewide IT Asset Management policy, as it may be amended from time to time, to see the minimum set of assets and their associated attributes that will be tracked by the state of Oregon.

6.8 Related Policies & Procedures

ORS 184.473-477 (IT Portfolio Management, a.k.a. HB3372) among other things, requires DAS, in cooperation with state agencies to conduct and maintain a continuous inventory of each state agency's current and planned investments in information technology, a compilation of information about those assets and the total life cycle cost of those assets. Further, it requires DAS to develop and implement, and requires state agencies to comply with, state government-wide standards, processes and procedures for the required inventory and for the management of the state government-wide information technology portfolio.

ORS 291.037 Legislative findings on information resources. The Legislative Assembly finds and declares that:

- (1) Information is a strategic asset of the state which must be managed as a valuable state resource.

Enterprise Information Resources Management Strategy V1.0 - August 2002 (EIRMS):

Objective I-5-d of the EIRMS is to implement an information technology portfolio management program as envisioned in HB 3372 at the agency and enterprise level.

Internal Control Policy for Capital and Non-Capital Assets:

<http://www.das.state.or.us/DAS/SCD/SARS/policies/oam/10.50.00.PO.pdf>

Procedure: <http://www.das.state.or.us/DAS/SCD/SARS/policies/oam/10.50.00.PR.pdf>

Internal Control Policy for Employee Assigned Property

<http://www.das.state.or.us/DAS/SCD/SARS/policies/oam/10.55.00.PO.pdf>

Internal Control Policy for Information technology:

<http://www.das.state.or.us/DAS/SCD/SARS/policies/oam/10.60.00.PO.pdf>

Procedure: <http://www.das.state.or.us/DAS/SCD/SARS/policies/oam/10.60.00.PR.pdf>

Accounting and Financial Reporting for Inventories

<http://www.das.state.or.us/DAS/SCD/SARS/policies/oam/15.50.00.PO.pdf>

Procedure: <http://www.das.state.or.us/DAS/SCD/SARS/policies/oam/15.50.00.PR.pdf>

Accounting and Financial Reporting for Non-Capital Assets

<http://www.das.state.or.us/DAS/SCD/SARS/policies/oam/15.55.00.PO.pdf>

Procedure: <http://www.das.state.or.us/DAS/SCD/SARS/policies/oam/15.55.00.PR.pdf>

Classification and Capitalization

<http://www.das.state.or.us/DAS/SCD/SARS/policies/oam/15.60.10.PO.pdf>

Procedure: <http://www.das.state.or.us/DAS/SCD/SARS/policies/oam/15.60.10.PR.pdf>

Computer Software

<http://www.das.state.or.us/DAS/SCD/SARS/policies/oam/15.60.40.PO.pdf>

Procedure: <http://www.das.state.or.us/DAS/SCD/SARS/policies/oam/15.60.40.PR.pdf>

DAS Risk Management Division - Property Self-Insurance Policy Manual 125-7-101: Section VII – Special Plan for Electronic Data Processing (EDP)

<http://www.das.state.or.us/DAS/Risk/docs/PROP98.doc>

DAS Risk Management Division - Special Plan for Information Technology (IT) Systems

http://www.das.state.or.us/DAS/Risk/docs/1_101.doc

DAS Surplus – Computer Equipment Disposal policy 107-009-010

http://tpps.das.state.or.us/surplus/CRT_policy.pdf

6.9 Technical Product & Configuration Information

Category	Current Standard	Emerging Standard
IT Asset discovery/inventory	Manual Processes Novell Zenworks Microsoft SMS HP Openview	
IT Asset Information Repository	Manual Processes MS Access/Excel Remedy Asset Management Peregrine Heat	
Software management	Microsoft SMS	
Device Management	HP Openview CiscoWorks	
TCO Analysis	Manual Processes MS Excel Gartner TCO Manager	

6.10 Future Direction

- Establish the Enterprise IT Asset Management Program Office within DAS/IRMD.
- Define elements within financial and contractual attributes
- Define the Software Asset type
- Define Asset Management requirements for associating Hardware asset type to Software asset type

- Establish IT Asset Discovery and Repository Product Standards.
- Establish purchasing agreements for IT Asset Discovery and Repository Products.
- Establish service pricing models for IS services, set service level agreements and chargeback structure for usage based pricing.
- Establish common framework for calculating, managing, reporting and reducing the total cost of ownership of IT assets (lifecycle costs) by all state agencies.

6.11 Organization & Personnel Impact

- If not currently in place, agencies will need to establish an IT asset management program and assign management and staff operational responsibility for the program within the agency.
- Organizationally, agencies will need to assess the proper reporting relationships between the agency IT Asset Management Program and other agency functional areas (i.e. IT planning, purchasing, Help Desk, IT operations, overall inventory management and financial reporting, transfer of property/surplus/disposal, etc.)
- Agencies will need to evaluate existing IT asset management-related processes and procedures, modify them as necessary, and/or create new processes and procedures.
- Agencies should adopt an IT Asset Management maturity model approach (reference 6.6.1 above), assess the current state of program, process, practice maturity within the agency, and set performance targets to improve to the next level of maturity within a reasonable period of time.
- Agencies must establish management controls to ensure agency compliance with and accountability for meeting Minimum Information Technology Asset Management Performance Standards (reference 6.7.1 above).