

MANAGEMENT DIRECTIVE

Commonwealth of Pennsylvania Governor's Office

Subject: Quality Assurance for Business Productivity Tools	Number: 205.43 Amended
Date: June 25, 2014	By Direction of:  Charles B. Zogby, Secretary of the Budget  Kelly Powell Logan, Secretary of Administration
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This directive establishes policy, responsibilities, and procedures for the quality assurance of spreadsheets, databases, and other business productivity tools that directly support commonwealth business transactions and financial reporting. The directive has been updated in order to clarify the tools that the policy applies to and removes personal identifiable information as this is covered in other policies, directives and law. Marginal dots are excluded due to major changes.

- 1. PURPOSE.** This directive establishes policy, responsibilities, and procedures for the quality assurance of spreadsheets, databases, and other similar tools that support commonwealth business transactions and financial reporting. Business productivity tools are designed to be meaningful and user-friendly for those who are not professionals in the Information Technology field. The tools created, such as spreadsheets and databases, are not subject to the application development methodologies used by agency Information Technology (IT) professionals. However, if the tools contain calculations that affect key business decisions, the agencies and employees responsible for their use must address creation, security, backup, and change management issues. Failure to do so may pose significant risks to specific business operations or public confidence in commonwealth operations and financial reporting.

2. **SCOPE.** This directive applies to all departments, boards, commissions, and councils (hereinafter referred to as “agencies”) under the Governor’s jurisdiction. Agencies not under the Governor’s jurisdiction are encouraged to adopt a similar policy and similar procedures.

3. **OBJECTIVES.**

- a. Define steps and provide tools for agencies to use in order to ensure the integrity of business productivity tools.
- b. Mitigate the risk of inaccurate financial data and insufficient security for business productivity tools that support financial reporting.

4. **DEFINITIONS.**

- a. **Agency Business Program Managers.** Agency personnel who oversee the business processes and procedures within a program or program area.
 - b. **Agency Continuity of Operations (COOP) Program Manager.** As defined in *Management Directive, 205.41, Commonwealth of Pennsylvania Continuity of Operations (COOP) Program*, an employee in an agency responsible for developing the agency COOP plan and ensuring it is kept up-to-date.
 - c. **Agency Records Coordinator.** As defined in *Management Directive 210.5, The Commonwealth of Pennsylvania State Records Management Program*, the employee appointed by the agency head to have agency-wide responsibility for managing and coordinating the agency’s records management program.
 - d. **Business Productivity Tools (Tool or Tools).** Spreadsheets, databases, or other similar tools that calculate or support material balances in, or footnotes to, commonwealth financial statements; manipulate large numbers of records or amounts of data that support financial reporting; support purchasing, contracting, program, or budget decisions; or provide information that is used in other agency or enterprise systems.
 - e. **Internal Control.** A process designed to mitigate risk and provide reasonable assurance regarding strategy, compliance, and the reliability of operations and reporting.
5. **POLICY.** Agencies shall document procedures for the creation, security/access, backup and recovery and change control of business productivity tools, based on Enclosure 1, Guidelines for Quality Assurance for Business Productivity Tools, of this directive. Documentation shall address the following:

a. **Creation.**

- (1) **Purpose.** An explanation of when the Tool was created, the name of the business area it was created for, and how it is used.
- (2) **Functionality.** Definition of the specific functionality of the Tool (calculations, hidden fields, etc.) and the technology used to create the tool.

- (3) **Data Sources.** A list of all the sources that transmit data to the Tool created and/or the systems to which the tool provides data.
 - (4) **Security.** Documentation of security measures used to control access and modifications to the Tool created including a roles-based list of employees authorized to view and/or modify the Tool.
 - (5) **Backup and Recovery Procedures.** Outline of the physical location of the Tool created and the procedures for backup and recovery of the program.
 - (6) **Change Control.** The process for how changes are made to the Tool.
 - (7) **Change Log.** A list of changes to the Tool, the employee who made the change, the name of the approver of such changes, and date/time of the change.
- b. **Security/Access.** The Tools created must be stored on shared network locations. Tools must be accessible only to those authorized to access the Tools. Data must be accessible only to those authorized to access the data.
 - c. **Backup and Recovery.** The Tools created must be saved in secure directories on secure networks and included in standard IT backup and recovery strategies.
 - d. **Change Control.** Changes to the Tools must be made in accordance with applicable change control procedures outlined in Enclosure 1, Guidelines for Quality Assurance for Business Productivity Tools and recorded in the Tool's change log. Refer to Enclosure 2, Documentation Template for Business Productivity Tools.

6. RESPONSIBILITIES.

- a. **Deputy Secretary for Administration** (or equivalent) shall ensure the policies set forth in this directive are implemented. The deputy secretary may choose to assign this task to a team consisting of IT, continuity of operations, records retention, and agency business program managers.
- b. **Agency Business Program Managers** shall:
 - (1) Ensure the Tools created within their program areas and within the scope of this directive meet the requirements of section 5 of this directive.
 - (2) Ensure that a supervisory or comparable review or reconciliation occurs and is documented before and after data passes through the business productivity tool. The Agency Business Program Managers shall define the frequency for the reviews and reconciliations.
 - (3) Establish and follow through on corrective action plans to resolve audit findings related to Tools.

- (4) Ensure the Tool created is included in the agency records retention schedule and, if required for performing an essential function, listed as a vital record in the agency continuity of operations plan.
 - (5) Provide documentation for the Tool created when requested by OB/Bureau of Audits, agency audit organizations, CPAs, and other auditors performing audits of commonwealth records (GAAP and single audit), as defined by *Management Directive 325.3, Performance of Audit Responsibilities*.
- c. **Agency IT Personnel** shall assist employees with ensuring files generated from the Tools comply with security, backup/recovery, and life cycle management procedures.
- d. **Office of Administration (OA), Office for Information Technology** shall consult with agency personnel, as needed, within OA's areas of expertise, regarding Tools that may be within the scope of this directive, and shall refer agency personnel to the Office of the Budget (OB) as necessary for consultation within OB's areas of expertise.
- e. **Office of the Budget, Office of Comptroller Operations, Bureau of Audits** shall:
- (1) Consult agencies on the resolution of noncompliance issues, if necessary.
 - (2) Ensure routine or special audits of business processes are conducted in accordance with *Management Directive 325.3, Performance of Audit Responsibilities* or *Management Directive 325.6, Auditing Computer-Based Systems*, including files created using Tools associated with the processes subject to audit.
 - (3) Consult with agency personnel, as needed, within OB's areas of expertise, regarding Tools that may be within the scope of this directive, and shall refer agency personnel to OA as necessary for consultation within OA's areas of expertise.

7. PROCEDURES.

- a. **Within each program area, Employees** will:
- (1) Identify Tools that require internal controls.
 - (2) Document each Tool that complies, at a minimum, with Enclosure 1, Guidelines for Quality Assurance for Business Productivity Tools of this directive.
 - (3) Store the documentation in a common location.
 - (4) Maintain the documentation in accordance with retention and disposition schedules.

- b. **Agency Business Program Managers** will review and maintain internal controls for Tools created within their program area.

This directive replaces, in its entirety, *Management Directive 205.43*, dated November 26, 2013.

Enclosure 1 - Guidelines for Quality Assurance for Business Productivity Tools

Enclosure 2 - Documentation Template for Business Productivity Tools

Guidelines for Quality Assurance for Business Productivity Tools

Identifying Business Productivity Tools. Agencies should consult with their respective agency business areas, Chief Information Security Officer, and/or Privacy Officer if they are unclear about which Tools may be in scope. The questions outlined below can be used to help identify which Business Productivity Tools need to comply with the management directive:

1. Would the loss of the employee-developed application, unauthorized access or dissemination data/information have a significant detrimental operational, financial, and/or legal impact to the commonwealth?
2. Is the Business Productivity Tool used directly or indirectly to perform any financial calculations, processing, reporting involving data/information exchanges with key agency or enterprise systems?
3. Are there any interfaces and/or dependencies with the Business Productivity Tool and other agency or enterprise applications used to support any primary mission critical business functions, benefit determinations, payroll, payments, billing, recoupment, claims adjustments, and/or other material financial decisions?

Documentation. The following are guidelines that can be used to create and maintain the systems documentation for each Business Productivity Tool:

1. Create a template to be used within your agency to properly document Business Productivity Tools. This will assist in establishing a standard methodology that will be common and recognizable across all business areas.
2. Ensure the template aligns with the policy document requirements and includes sections to specifically address the following: purpose, functionality, security, backup and recovery, data sources, and change history/log. It may be helpful to also include other pertinent information such as: Business Area, Business Productivity Tool business owner and affiliated contact information, and latest revision/review date of the template.
3. The template file name should align with the affiliated Business Productivity Tool and stored in safe location on a network drive that is backed up.
4. In business areas that have numerous Business Productivity Tools, it may be helpful to create an alphabetical directory listing of all Business Productivity Tools with links to their respective templates and point of contact. This directory should be updated as Business Productivity Tools supporting the business areas are created or deleted because they are no longer in service or have been replaced.
5. It is highly recommended that a systems documentation be created for highly sophisticated Business Productivity Tools used to support business operations (e.g., those involving: macros, data sorts/filters, complex formulas and calculations, conditional formatting, multi-cell/sheet references, hidden cells, queries, multiple data sources, coding/scripting, data exchanges/interfaces, etc). The Business Productivity Tool systems document should explain the functionality and define all the associated design elements in sufficient detail for other staff members to be able to read and understand the functionality and design as well as mitigate the potential risk to the agency should its creator leave the organization.

6. Reference example (Overview, Descriptions, Supporting Documents tabs) contained in Enclosure 2, Documentation Template for Business Productivity Tools of this directive.

Change Control. The guidelines outlined below will assist agencies in establishing formal internal change control procedures when making modifications to Business Productivity Tools.

1. Create a change/history log for each individual Business Productivity Tool.
2. Define how changes to Business Productivity Tools are properly managed from concept to implementation. From a Business Productivity Tool operational integrity and audit perspective, it is imperative to be able to demonstrate that change control processes are established and followed in practice.
3. Define how changes to Business Productivity Tools are tested, validated, and approved.
4. Define the criteria and authorization/approval procedures for making official Business Productivity Tool change/history log entries as well as the roles and responsibilities for designated staff members who are involved in the Business Productivity Tool change control process.
5. Ensure change/history log entries provide sufficient details regarding the following:
 - a. Change category (e.g., Problem Resolution, Enhancement, or Update).
 - b. Summary description of the change to the Business Productivity Tool.
 - c. Identifies individuals who made, tested/validated, and approved the change or modification to the Business Productivity Tool.
 - d. Documents specific dates the change was created, tested, validated and approved for implementation.
 - e. References to specific supporting documentation (e.g., test results, report, etc).
6. Reference example (change log tab) contained in Enclosure 2, Documentation Template for Business Productivity Tools of this directive.

Testing and Approval. The following are guidelines that can be used to establish an effective Business Productivity Tool testing and validation process:

1. New and/or changes to existing Business Productivity Tools should be tested, validated, and given proper authorization/approvals prior to implementing them into live operational environments.
2. Define testing and approval procedures to ensure the integrity and to validate the proper functionality of Business Productivity Tools. Create a two tiered test and validation process for Business Productivity Tool to include the original tester and another individual to observe (or rerun tests), review and validate the results, and sign-off verifying operational readiness.

3. Performing a walk-through or independent test or review with at least one other employee or supervisor and then documenting the results is highly recommended.
4. Create and run test scenarios that simulate realistic business operations/activities and fully exercise the functionality of the Business Productivity Tool. Establish pass/fail criteria for each test to determine and validate proper functionality based on known inputs and the expected outcomes.
5. Review and evaluate all results and/or outputs generated by the Business Productivity Tool. Validate accuracy, consistency, and reliability of the outputs based on the corresponding input/data. Record test results, identify and any problems or anomalies, then retest and revalidate.
6. Document the Business Productivity Tool test scenarios, procedures, and results so they can be used as a future reference and/or audit purposes. Note: There should be alignment with Business Productivity Tool changes and corresponding testing and validation records.

Backup and Recovery. The guidelines outlined below will assist agencies in establishing the proper procedures regarding the backup and recovery of agency Business Productivity Tools.

1. Procedures for routine backup and recovery of Business Productivity Tools should be established to minimize the risk to business operations.
2. Agencies should coordinate with their internal information systems organization to establish the proper guidelines and procedures for backup and recovery of Business Productivity Tools that fall under the purview of this Management Directive.
3. Agencies should coordinate with the agency Chief Information Security Officer (CISO) to establish the proper guidelines and procedures to ensure proper storage and encryption requirements of Business Productivity Tools that may import and/or export highly sensitive, confidential, and restricted data/information with agency enterprise systems.
4. Agencies should coordinate with agency Records Coordinators to establish the proper COOP guidelines and procedures for those Business Productivity Tools that are tied to essential business functions and/or are used to download, manipulate, and/or modify data from an enterprise system resulting in the creation of or changes to an official matter of record, shall be managed in compliance with your agency's records retention policies.