

Information Technology Policy

Business Intelligence Dashboard Policy

ITP Number ITP-INF012	Effective Date March 23, 2009
Category Information	Supersedes None
Contact RA-ITCentral@pa.gov	Scheduled Review June 2022

1. Purpose

This Information Technology Policy (ITP) establishes enterprise-wide standards and policies for Business Intelligence (BI) and Analytics Dashboard technologies. Establishing standards will provide guidance to agencies as they plan for new digital and analytics capabilities using application development projects or make investments in existing applications.

2. Scope

This ITP applies to all offices, departments, boards, commissions and councils under the Governor's jurisdiction (hereinafter referred to as "agencies"). Agencies not under the Governor's jurisdiction are strongly encouraged to follow this ITP.

Third-party vendors, licensors, contractors, or suppliers shall meet the policy requirements of the Commonwealth's ITPs that are applicable to the products and services provided to the Commonwealth.

3. Background

A dashboard typically is a set of Web-based application components that delivers key information in a highly visual format to a key user group or groups. Dashboards contain summarized key KPIs and metrics that is most significant for user's business operations and enables users to quickly interpret, understand and collaborate a snapshot perspective of organizational performance, with the ability to drill down to greater levels of detail. Dashboards enables Agencies to leverage BI and Analytics to achieve their data driven strategic objectives. These Dashboards are tailored for different personas depending on the functional job profile. The dashboards help in successful digital transformation by successfully implementing the digital stories and mobility. Dashboards are a primary method of delivering and displaying BI to users since they are more visual and intuitive than traditional reports.

Dashboards are deployed to deliver real-time and in non-feasible cases near-real-time analysis and use visualization techniques to render complex or detailed information in simplified form. Dashboards often are linked to more than one enterprise application and use agents to monitor transactional performance and generate alerts based on unexpected behaviors or out-of-tolerance deviations.

Dashboards are most effective at delivering business information when the business process is well defined, the data relationships understood and trending is essential.

Dashboards serve the means to increase the Agency and team level efficiency and effectiveness. The dashboards empower users with analytical capabilities to drive intelligence and insights. The intelligence and insights are delivered in the form of a single dashboard or

a set of dashboards or a combination of dashboard and operative reports as final Drilldown details. These insights enable agencies to refine their operating model, innovate new agency model and enable users to focus on right priorities. Leveraging Data available across the agencies will help real-time benchmarking, tracking and monitoring performance of the agency and across the agencies. The Dashboards in certain scenarios reduce the need for any data interfaces across the transactional systems.

STD-INF012A *Dashboard Product Standards* provides guidance to agencies on the current standards and the status of other BI Dashboard solutions that are being used or being considered for use.

GEN-INF012B *Dashboard Product Availability* provides information on the availability and licensing of current reporting product standards.

4. Definitions

- 4.1 **Business Intelligence (BI) Dashboard** - A graphical user interface that is an information management tool which provides at-a-glance views of KPIs or Metrics and key data points to monitor the health of a business, department or specific process, through a single point of access. BI Dashboards visually track, analyze and display preconfigured or customer defined statistics, insights and visualization into current data. A BI Dashboard enables business users to interact with data and drill into bits and pieces of information they might need, at any time, or any place to make data-driven decisions.
- 4.2 **Information Silo** - Is an information management system that is unable to freely communicate with other information management systems. Communication within an Information Silo is always vertical, making it difficult or impossible for the system to work with unrelated systems. Information Silos occur when different individuals or groups generate or record new data, but don't integrate or aggregate that information for other parts of the business to view or use in a strategic way. Additionally, it occurs from the tool sprawl and the poor or no integration of business applications and processes.
- 4.3 **Key Performance Indicators (KPIs) or Metrics** - The set of quantifiable measurements used to gauge an organization's overall long-term performance. KPIs/Metrics specifically help determine an organizations strategic, financial, and operational achievements, especially compared to those of other organizations within the same sector.
- 4.4 **Widget** – Is a numeric or graphic representation of an information relevant for business. These are also considered to be a component in the form of a mini report, integral part of the overall dashboard.
- 4.5 **Drilldown** – Is an application feature allowing business users to navigate from high level information to detailed information/transaction level.
- 4.6 **Collaboration** – Information sharing across the different users and user groups within the organization for strategic alignments, Information sharing and/or functional tasks.
- 4.7 **Data Source** – Source where facts are stored.

- 4.8 **Data** – Raw set of facts from a single and multiple sources .
- 4.9 **Information** – Interpretation of data by utilizing the raw datasets and applying business rules and presenting them in a business context.
- 4.10 **Intelligence** – Using large sets/contents of data and generate information to deliver context based insights.
- 4.11 **Business Intelligence** – Data discovery and insights delivery for better decision making, preferably real time, with intuitive self-service capability.
- 4.12 **Insights** – Deep understanding of functional/domain entities.
- 4.13 **Consolidation** – Combination of data or Information from heterogenous landscape to a harmonized and summarized information.
- 4.14 **Mobility** – BI and Analytics capability to enable information access in handheld, tablet and similar devices. Initially, mobility was part of business operations and is currently expanded to strategy. The new BI dashboard and Analytics applications need to have this feature as mandatory feature.
- 4.15 **Intelligent Predictive Analytics** – Using data and information to Predict potential outcomes and generate forecasts.
- 4.16 **Automated Machine Learning** - Using machine learning algorithms to automatically identify relationships, patterns – hidden or explicit, and outliers in the data for better decision making.
- 4.17 **Conversational Analytics** – using analytics in a conversational way, a capability using data and information built in application to get instant answers, data visualizations, and explanations using natural language processing.
- 4.18 **Augmented Analytics** – Combination of intelligent predictive analytics, automated machine learning and conversational analytics .
- 4.19 **Enterprise Reporting** – Historical and current data to provide consolidated and consistent information for Top-down and bottom-up reporting.
- 4.20 **Self-Service Analytics** – Analytics providing the dynamic capability for user based analysis and analytics for self-service story telling.
- 4.21 **Intelligent Enterprise** – Using BI and Analytics to enable smarter decisions across the organization-wide applications.
- 4.22 **Data Exploration** – Exploring data and information intuitively for better understanding of points of interests and patterns.
- 4.23 **Dashboards and Visualizations** – Visualizations and presentation of data to end users that enable them to analyze, discover, plan and predict.

5. Policy

Agencies shall standardize on the current architecture products identified in STD-INF012A *Business Intelligence Dashboard Product Standards*.

Agencies shall not intentionally create Information Silos. Agencies shall coordinate with the Commonwealth Data Officer to incorporate reporting data stores for enterprise-class applications into a broader BI framework. See STD-INF010 *Business Intelligence Policy*.

Agency leadership shall establish KPIs or Metrics.

Agencies shall ensure that data that supports the KPIs or Metrics displayed in BI Dashboards are synchronized with the underlying detail data that is used for drill-down analysis.

Agencies shall ensure that applications leveraging a BI Dashboard provides consistent data and metadata for KPIs or Metrics.

Agencies shall coordinate with the Office of Administration, Office for Information Technology (OA/OIT) to ensure BI Dashboard implementations meet security requirements in accordance with all statutes, laws, executive orders, management directives and policy.

Agencies shall coordinate with agency chief counsel and OA/OIT to ensure BI Dashboard implementations meet security requirements in accordance with all statutes, laws, executive orders, management directives and policy.

Agencies shall coordinate with OA/OIT to analyze security requirements for all reporting solution implementations.

Agencies shall coordinate with OA/OIT to ensure BI Dashboard users can only view BI Dashboards and data that they are entitled to view.

Agencies shall ensure only the data required for their business process is collected and retained per the agency record retention plan.

Agencies shall review and update their records retention plan with every implementation of BI reporting.

Agencies shall ensure the appropriate level of security controls are applied to all BI reporting implementations.

Agencies shall coordinate with OA/OIT to ensure all users are authenticated and authorized in accordance with all laws, statutes, executive orders, management directives and policy.

Agencies may not implement a BI reporting instance requiring authentication that does not leverage enterprise access management solutions.

6. Responsibilities

6.1 Agencies shall comply with the requirements as outlined in this ITP.

6.2 Third-party vendors, licensors, contractors, or suppliers creating custom applications on behalf of Commonwealth entities shall comply with the requirements as outlined in this ITP.

7. Related ITPs/Other References

Definitions of associated terms of this policy are published on the Office of Administration's public portal: <http://www.oa.pa.gov/Policies/Pages/Glossary.aspx>

Commonwealth policies, including Executive Orders, Management Directives, and IT Policies are published on the Office of Administration's public portal:

<http://www.oa.pa.gov/Policies/Pages/default.aspx>

- Management Directive 205.34 Amended *Commonwealth of Pennsylvania Information Technology Acceptable Use Policy*
- ITP-ACC001 *Information Technology Digital Accessibility Policy*
- ITP-BUS004 *IT Policy Waiver Review Process*
- ITP-INF000 *Enterprise Data and Information Management Policy*
- ITP-INF010 *Business Intelligence Policy*
- STD-INF010 *Business Intelligence Policy*
- ITP-INF011 *Reporting Policy*
- STD-INF012A *Dashboard Product Standards*
- GEN-INF012B *Dashboard Product Availability*

This policy documents the implementation of the National Institute of Standards and Technology (NIST) Security Controls: AC-4, AC-21, AC-23, AU-2, AU-3, AU-6, AU-7, AU-13, AU-14, CA-2, IR-4, PM-1, PM-18, PS-6, PE-19, PT-7, RA-3, RA-5, SA-8, SC-31, SI-4

8. Authority

Executive Order 2016-06 *Enterprise Information Technology Governance*

9. Publication Version Control

It is the [Authorized User](#)'s responsibility to ensure they have the latest version of this publication, which appears on <https://itcentral.pa.gov> for Commonwealth personnel and on the Office of Administration public portal: <http://www.oa.pa.gov/Policies/Pages/default.aspx>. Questions regarding this publication are to be directed to RA-ITCentral@pa.gov.

10. Exemption from This Policy

In the event an agency chooses to seek an exemption from the guidance within this IT policy, a request for a policy waiver is to be submitted via the enterprise IT policy waiver process. Refer to [ITP-BUS004 IT Policy Waiver Review Process](#) for guidance.

This chart contains a history of this publication's revisions. Redline documents detail the revisions and are available to CWOPA users only.

Version	Date	Purpose of Revision	Redline Link
Original	03/23/2009	Base Document	N/A
Revision	11/18/2010	ITP Refresh	
Revision	06/25/2021	ITP Refresh	Revised IT Policy Redline <06/25/2021>