Enhancing IT Portfolio Management Processes through the Use of eCPIC

CPIC/PM Community of Interest

November 27, 2007

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Agenda

- The eCPIC Service Level Agreement (SLA)
- What is Portfolio Management?
- Enhancing Portfolio Management through eCPIC
- GSA Case Study
- Wrap-Up

eCPIC is a Government owned, web-based software solution that is governed through a Change Management Committee (CMC) and maintained through a subscription-based Service Level Agreement (SLA)

SLA Members (CMC)

- Department of State
- Department of Interior
- Department of Energy
- Department of Labor
- Department of Commerce
- Small Business Administration
- Department of Justice
- Housing and Urban Development
- General Services Administration
- Social Security Administration
- Environmental Protection Agency
- Department of Transportation

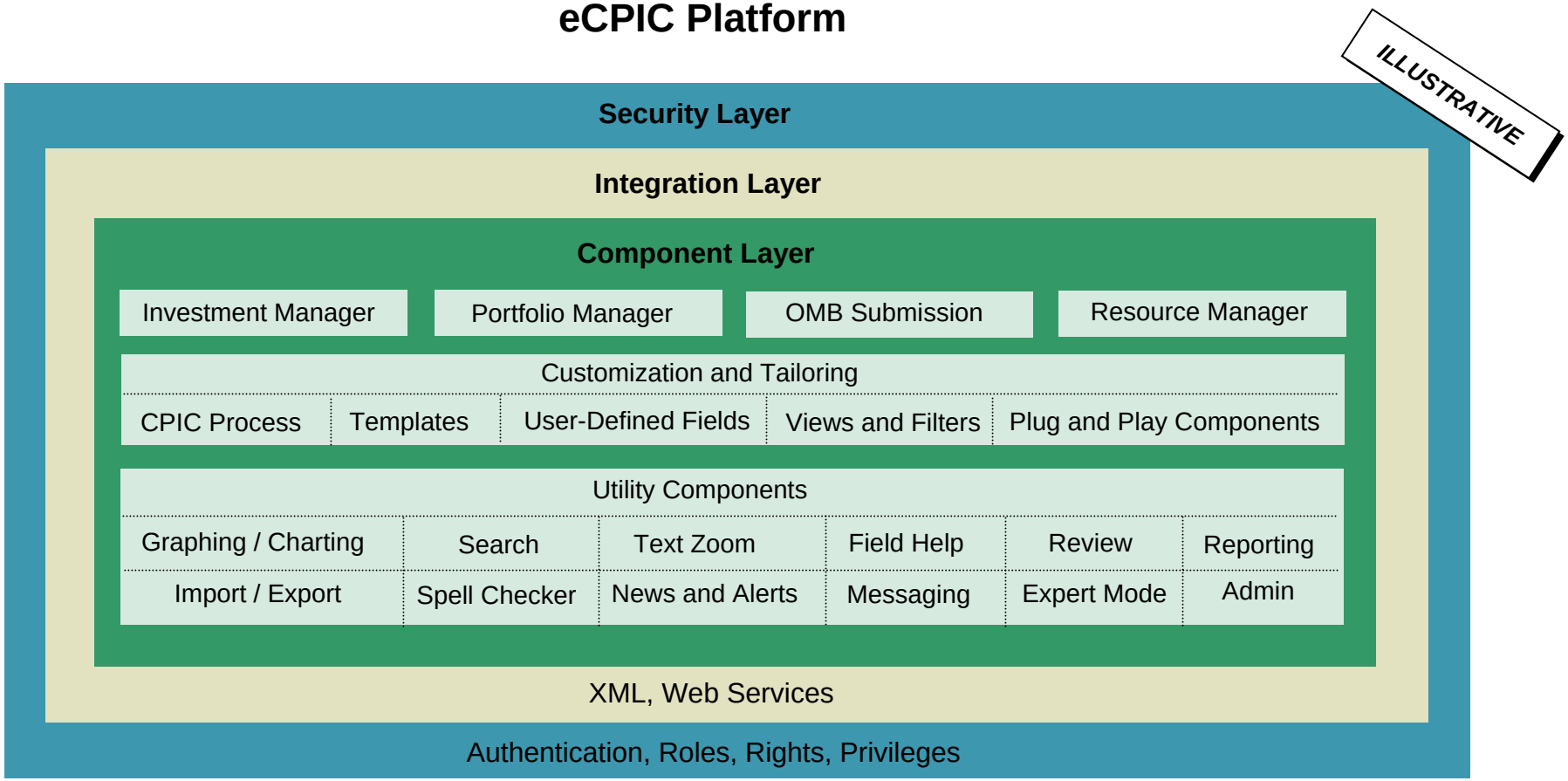
eCPIC is used to manage initiatives, portfolios, & investment priorities; comply with federal legislation; and prepare and submit budget data to OMB. This accounts for ~ 42% of Civilian IT spending or $14 billion annually

The eCPIC SLA assures member agencies access to customer support, training, documentation and the latest product releases

- eCPIC SLA Benefits
  - Major and Minor Releases
  - Technical Support / Helpdesk
  - 508 Compliance
  - Acceptance Testing
  - Configuration Management
  - eCPIC SDK for Web Services Integration with 3rd Party Tools
  - Alignment with the OMB 300 XML Schema and Exhibit 53
  - Operations & Maintenance of the eCPIC Resource Center (ERC)
  - Supporting Software Change Management
  - Administrator and User "Train-the-Trainer" Training
- eCPIC Installation and Technical Requirements
  - Initial eCPIC installation on the agency servers, as well as technical support are included with the procurement of the eCPIC application
  - Releases and Upgrades are downloadable executables from the members portion of the eCPIC Resource Center (ERC) located at http://www.ecpic.gov
  - ASP .NET (Microsoft IIS) on Windows 2000 or 2003 Server
  - Supports both Oracle and Microsoft SQL Server Databases

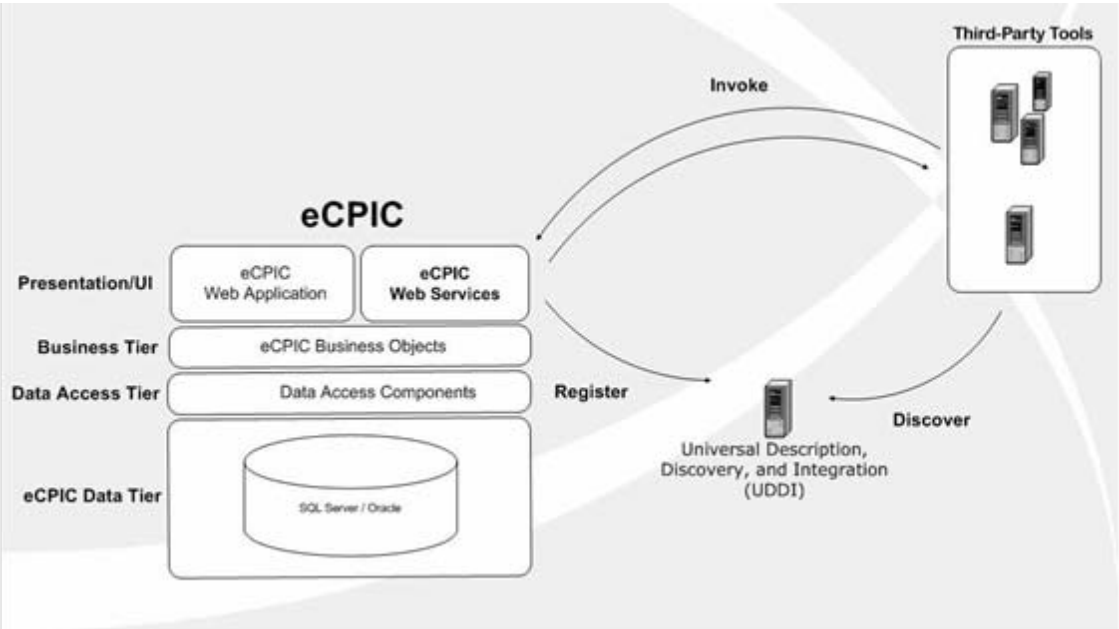
Using a Component-Based Architecture, eCPIC was built from the "ground up" and includes a suite of Investment, Portfolio, and Management components to support agency-specific CPIC processes

eCPIC Platform



eCPIC incorporates a SOA component, providing a standard platform for integration with other systems

- eCPIC is service enabled allowing for custom integration with third party tools
  - Software Development Kit (SDK) and Client Proxy available to facilitate integration efforts
  - Several methods available for retrieving and updating information within the system
  - Integrates eCPIC core security layer providing permission based access via the web service
- eCPIC's web service provides a platform independent mechanism for integration with third party tools



- The eCPIC web service provides integration opportunities for data throughout the application
  - Agency customized data collection fields
  - Enterprise Architecture Data
  - Financial and Budget Data
  - Cost and Schedule Performance Data
  - Investment Scoring Data
  - Risk Data
  - Portfolio Data
  - Many other data interfaces available

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Key business and technological drivers require more effective management of IT resources

Fact #1:
IT is a critical enabler of business strategy

Fact #2:
IT consumes well over 50% of capital spending at most companies

The Bottom Line:
Today's commercial and government organizations must learn to manage their IT portfolios for value not just cost

Business Drivers

- Increased commoditization
- Reduced budgets
- Faster time-to-market
- Greater reliance on value chain partners
- A need to make resource allocation (or re-allocation) decisions more quickly
- Tighter regulatory and compliance requirements (e.g. Clinger Cohen and Sarbanes Oxley)

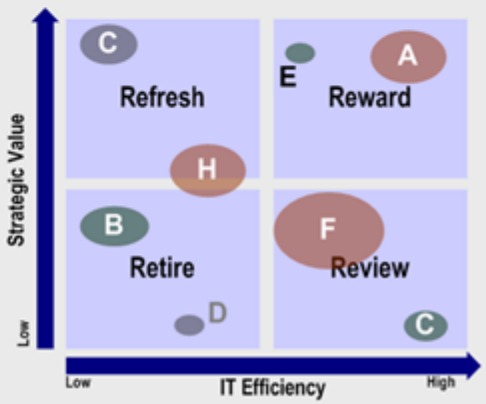
Technical Drivers

- Redundant processes, applications, and data
- Obsolete, non-supported technologies
- A myopic focus on the latest technologies
- Stovepiped systems that do not interoperate
- A focus on service orientation
- IT project gridlock—too many mediocre projects (e.g. minor modifications, defensive efforts) yield only marginal value

IT Portfolio Management

Visibility Into Health of All IT Assets

Strategic Value of IT Assets



What is portfolio management?

- Portfolio Management is an approach—typically combined with a set of tools—for identifying, diagnosing, controlling, and increasing the aggregate return on investments at a given level of risk tolerance.

- The concept is rooted in the management principle that any set of investments requires careful stewardship and proactive management to maximize value while minimizing risk.

- In the context of IT, portfolio management takes advantage of an integrated set of IT management processes, techniques, and tools that assist decision makers in analyzing, selecting, evaluating, and controlling an optimal set of investments.

- Properly executed IT PfM also delivers the benefits of balancing supply and demand of IT resources (financial and non-financial), eliminating redundancy, and enabling better alignment with strategic goals.

IT Portfolio Management Definition and Benefits

"IT Portfolio Management (PfM) is a method for governing IT investments across the organization and managing them for business value and risk."

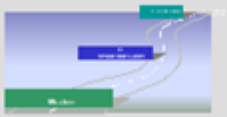
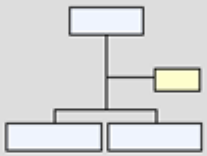
Benefits of IT Portfolio Management
• Maximizes overall value of IT investment (e.g., ROI of overall portfolio) • Balances supply and demand of IT resources • Identifies and eliminates duplicative efforts while maximizing reuse • Communicates priorities both horizontally and vertically • Allows for better management of interdependencies among investments • Shifts resources and focus from lower-value to higher-value projects • Increases collaboration among business, financial, and IT communities • Provides key resource management tool that helps companies during robust growth periods and times of economic downturn

Seven questions to determine whether your organization should reevaluate its IT portfolio management capability

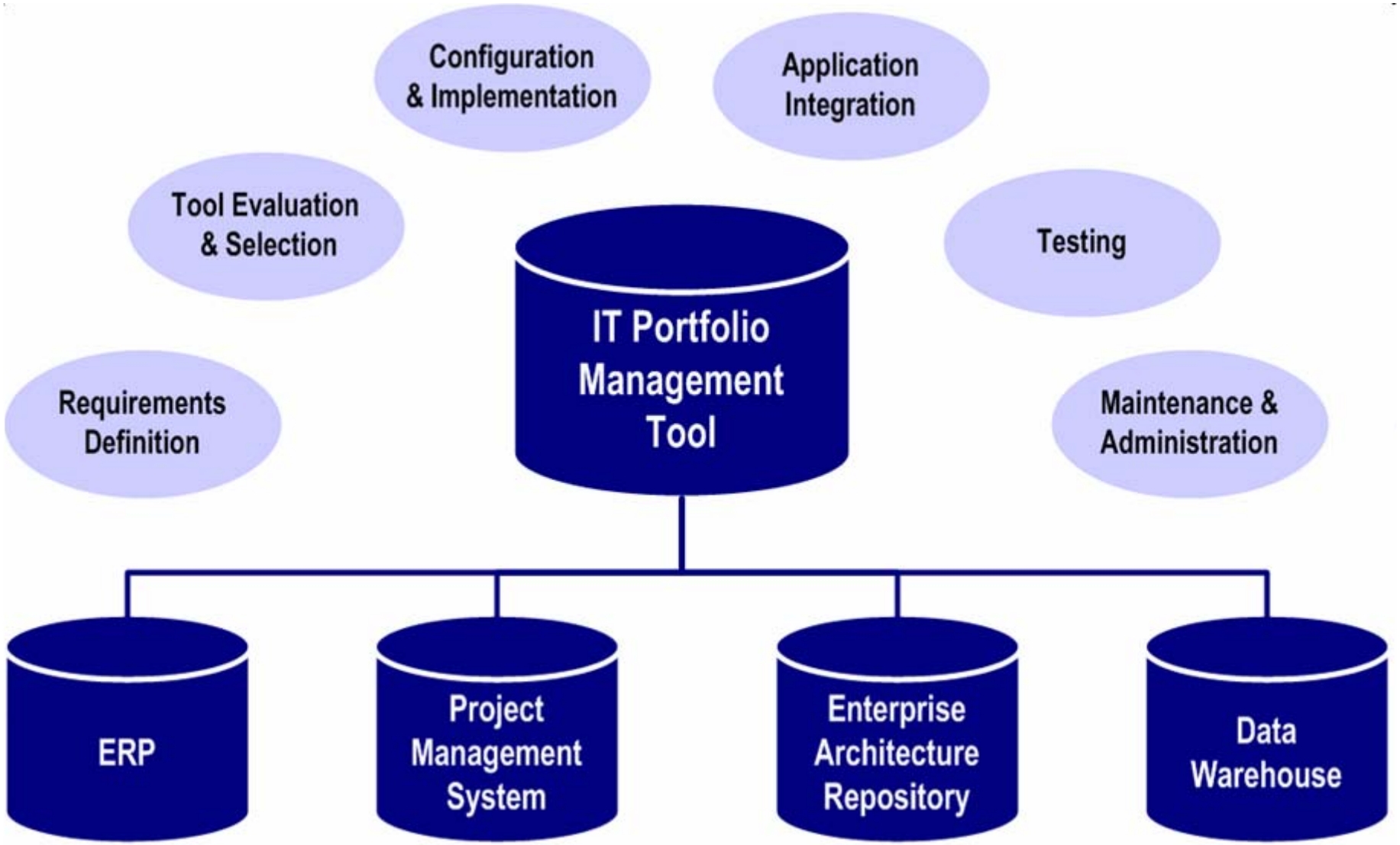
1. Is your IT portfolio a manifestation of your organization's mission and business strategy?
2. Can you identify which IT projects are interdependent with adjacent people and process initiatives?
3. Do you have a rigorous IT investment selection process that is devoid of emotion and politics?
4. Do you account for multiple risk categories—technical, business, project, customer—when evaluating investment proposals?
5. Is IT operating expense in line with business growth?
6. Can you identify which IT investments contribute to true competitive advantage or mission achievement?
7. Do IT investment decision making methods mesh with the decision making framework of your business or Agency?

IT PfM must be integrated with an organization's existing planning, management, and decision making processes

IT Portfolio Management Capability

Function	How IT PfM Integrates
Strategic Planning 	IT planning and formulation must be integrated with the organization's overall strategic planning process. Portfolios should center around the organization's core value chain and be capability-based rather than application-based.
Governance 	Business owners should be deeply involved in the governance of the IT portfolio and share accountability for the performance and success of IT initiatives. The internal market should drive the organization to the "efficient frontier" IT investments.
Enterprise Architecture	Enterprise architecture provides a common framework to describe and document the current and desired relationships among business and management processes, and information technology. IT PfM should ensure that proposed investments align with the target architecture
Project/Program Management	IT PfM is more than just selecting the "right" set of investments and should be inextricably linked to the execution arm, typically an organization's program management office (PMO).

Importance of integrating a tool to automate the PfM process

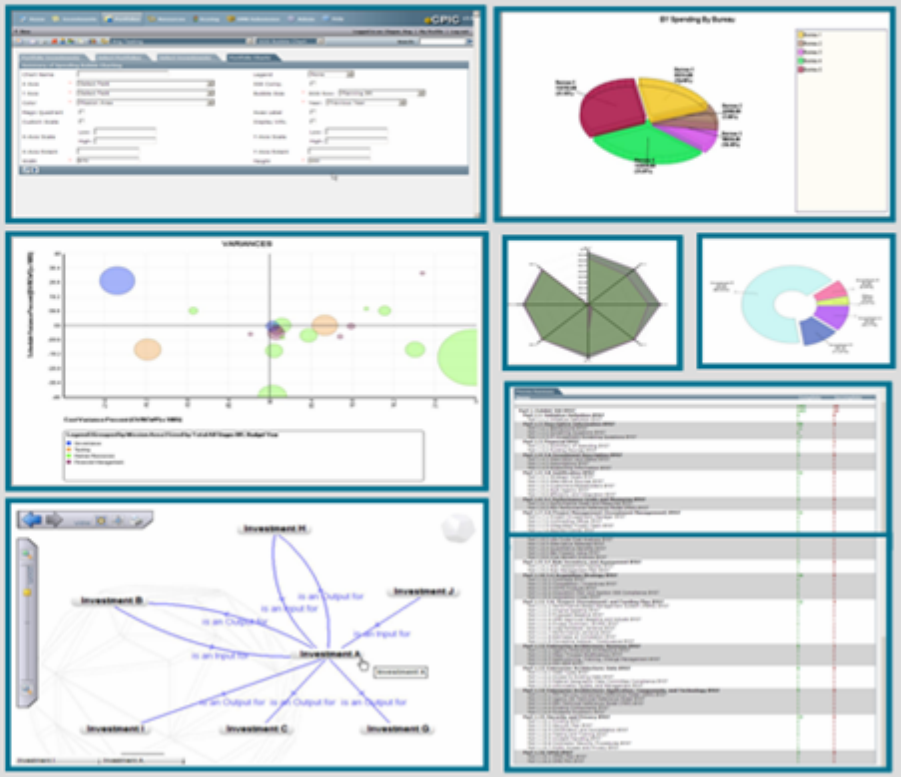


eCPIC, as an IT Portfolio Management tool

eCPIC Highlights

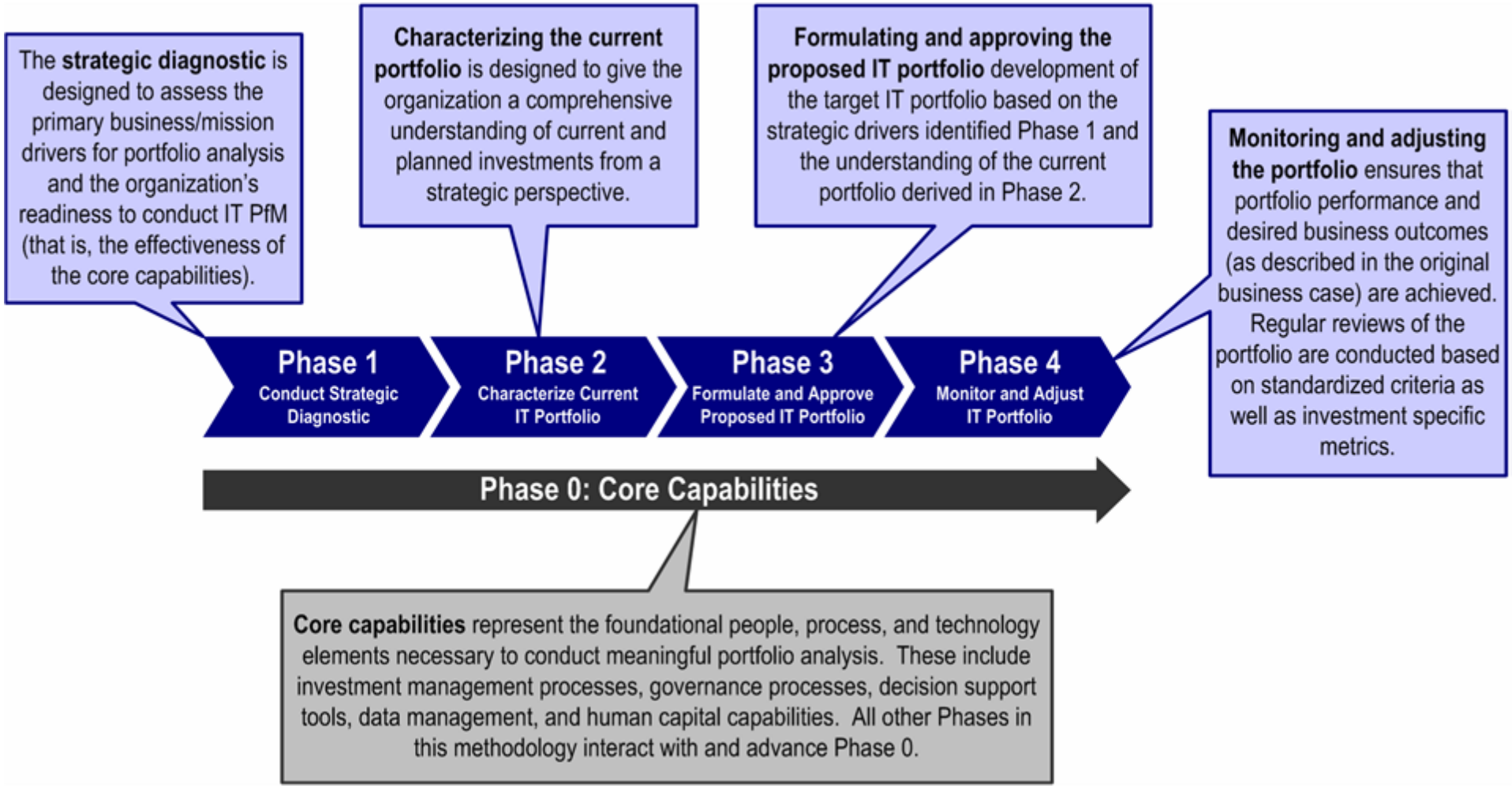
- ✓ **BROAD RANGE OF INVESTMENT INFORMATION:** Including Business Strategy, Budgets, Funding Plans, Acquisition and Procurement Planning, Project Life-Cycle Management, Audit Tracking, Regulatory Compliance, Performance Management, Risk Management, Scorecards, and Stakeholder Management
- ✓ **FOCUS ON CAPITAL INVESTMENTS:** Focuses on entire capital investments including IT investments, which provides broad analytical capability and what-if analysis
- ✓ **CUSTOMIZABLE INVESTMENT PROCESSES AND TEMPLATES:** Provides workflow management to create customized processes, user-defined fields and data capture templates to support enterprise specific investment processes
- ✓ **DAY-TO-DAY INVESTMENT MANAGEMENT:** Provides hierarchical investment structure, integrated resource library, score-cards, messaging and tasking, MS Project integration, earned-value, cost curves, and "Turbo-Tax" like review capability
- ✓ **INVESTMENT DEPENDENCY ANALYSIS:** Provides XML based investment dependency mapper to analyze dependencies, which allows drill-downs and access to investment data
- ✓ **MANAGEMENT REPORTING:** Provides a set of management, reporting and analysis modules to create, manage and report on portfolios. Includes dynamic charting and graphing of investment data, and ad-hoc reporting.
- ✓ **COMPONENT BASED ARCHITECTURE:** Built on extensible architecture leveraging industry standards (XML, Web Services) to provide maximum customizability and ability to integrate with existing systems.
- ✓ **SECURITY MODEL:** Information 'to and from' the users is protected via built-in user login and role administration security processes and encrypted data transmission

The Electronic Capital Planning and Investment Control (eCPIC) tool that can be tailored collect, analyze and report on wide variety of investment and portfolio information



Agencies can leverage best practices on proven IT PfM methodologies.

- The Booz Allen IT PfM Methodology, as illustrated below, addresses the development of foundation capabilities as well as ongoing portfolio maintenance.



Booz Allen's IT PfM Methodology starts with core capabilities and then identifies the key activities and outputs for each phase

	Phase 1 Conduct Strategic Diagnostic	Phase 2 Characterize Current IT Portfolio	Phase 3 Formulate and Approve Proposed IT Portfolio	Phase 4 Monitor and Adjust IT Portfolio
Activities	• Tailor Diagnostic Approach • Collect Data • Perform Diagnostic Analysis • Develop IT Portfolio Strategy	• Establish Analytic Framework • Collect Information on Current and Planned IT Investments • Conduct Baseline Analysis • Determine Focus Areas	• Develop Formulation Guidance and Roadmap • Collect Documentation (Business Cases) • Select Portfolio • Develop Implementation Plans	• Conduct Portfolio Reviews • Assess Changes to Resource Requirements • Adjust Portfolio Mix Based on Performance and New Demand
Outputs	• IT Portfolio Strategy • Business Priorities • IT Portfolio Risks • Rank Ordered List of Opportunities and Barriers • Communications Plan	• Baseline portfolio • Prioritized list of investments • Baseline analysis • Initial Investment Review Criteria and Scoring Models • Preliminary Roadmap	• Portfolio Analyses • Portfolio Recommendations • Portfolio Performance Targets • Business Cases • Implementation Plans • Investment Review Criteria And Schedules	• Performance Scorecards • Portfolio Status Reports • Strategic Portfolio Reviews • Portfolio Revisions

Phase 0: Core Capabilities

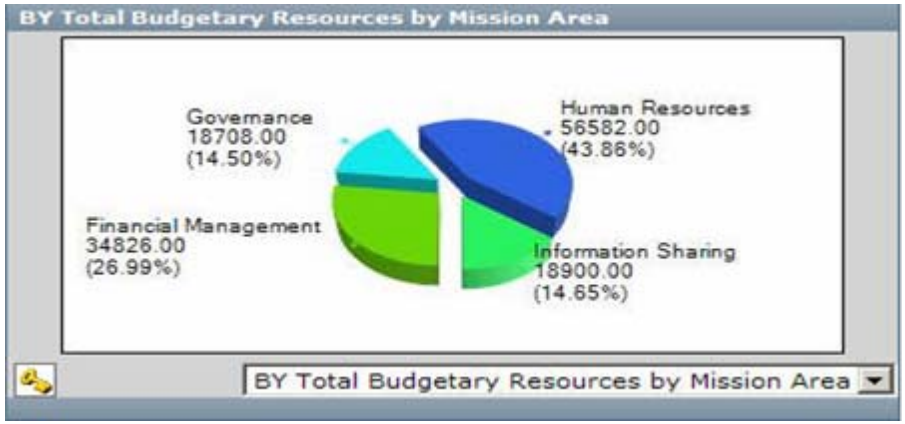
People	Process	Technology	Data
Knowledge Skills Abilities	Budget Workflow Governance	Portfolio Management Tools Project Management Tools	Access Accuracy Completeness

Sample work products, exported directly from eCPIC, can be used to support each phase

Scorecards are useful for inventorying and categorizing multiple investments against a particular framework (e.g. Exhibit 300 scoring, GAO ITIM, etc.)

Field Name	Parent / Child	Status	Rating	Weight	Score	Rationale
Exhibit 300 Scoring: Acquisition Strategy	Parent		2- significant gaps 3- much work remains 4- very few weak points 5- strong evidence	1.000	2.000	Future contracts have not been defined. 4961 characters remaining
Exhibit 300 Scoring: Alternatives Analysis	Parent		2- significant gaps 3- much work remains 4- very few weak points 5- strong evidence	1.000	2.000	Only 2 alternatives were listed. OMB requires the status quo plus 3 alternatives 4920 characters remaining

Portfolio Views illustrate multiple dimensions of investments / initiatives. They provide an analytic view into portfolio performance.



Word and Excel Reports that can be exported directly from eCPIC provide an easy to read format for senior executives.

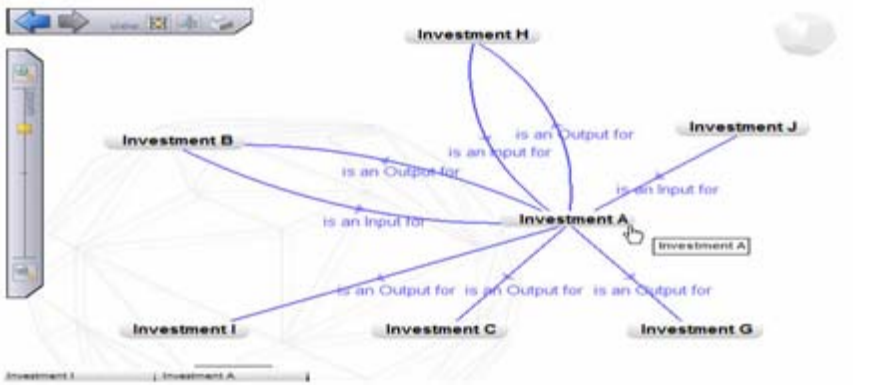
Exhibit 300: Capital Asset Plan and Business Case Summary

Part I: Summary Information And Justification (All Capital Assets)

Section A: Overview (All Capital Assets)

1. Date of Submission	[illegible]
2. Agency:	Booz Allen Hamilton
3. Bureau:	Department of Labor
4. Name of this Capital Asset:	E-Gov Initiative
5. Unique Project (Investment) Identifier: (For IT investment only, see section 53. For all other, use agency ID system.)	001-04-01-01-02-0000-00
6. What kind of investment will this be in FY2009? (Please NOTE: Investments moving to O&M in FY2009, with Planning/Acquisition activities prior to FY2009 should not select O&M. These investments should indicate their current status.)	Operations and Maintenance
7. What was the first budget year this investment was submitted to OMB?	[illegible]
8. Provide a brief summary and justification for this investment, including a brief description of how this closes in part or in whole an identified agency performance gap:	
Multi-Agency Initiative	
9. Did the Agency's Executive/Investment Committee approve this request?	

Dependency Mapper allows users to view interdependencies and relationships between agency investments



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eCPIC functionality

- Agencies utilize basic functionality within the tool for Exhibit 53 and Exhibit 300 support in preparation for the annual budget submission to the Office of Management and Budget (OMB)

- eCPIC is a comprehensive government portfolio management tool. It has evolved to include functionality such as:

  - Investment Management
  - Portfolio Management
  - Investment Scoring (Value Ratings)
  - Integrated OMB Reporting
  - Consolidated Business Cases / Investments
  - Ad-Hoc Reporting
  - Validation Review Capabilities
  - Customizable System Help Features
  - MS Excel Import and Export
  - Real-Time Portfolio Visualizations
  - Section 508 Compliance
  - Streamlined Navigation
  - Configurable Role Based Security Layer
  - Customization of Fields and Processes (Forms)
  - File Resource Library
  - Investment Dependency Collection and Reporting
  - Web Services for Third Party Tool Integration
  - Integrated Messaging
  - MS Project Import and Export
  - Investment Revisions for Historical Investment Data

** Examples only: Not an exhaustive list*

eCPIC functionality and support of the OMB CPIC phases

CPIC Phase	eCPIC functionality
Select	-***Leverage existing fields*** for Select data call/business cases. - ***Customize and create fields*** for Select data call/business cases. - Using ***portfolio visualizations*** for Select data analysis. - Using the ***scoring module and in-line scoring*** for use in internal business case scoring. - Providing annual budget submission (Exhibit 53 and 300) through the ***OMB submission package.*** - Using the ***reporting module*** to scan for completeness and areas of strength/weakness. - Automated XML validation reflects business rules based on industry best practices.
Control	- ***Leverage existing fields*** used in the Select process for Control Review data call and Earned Value Management (EVM) reporting. - ***Customize and create fields*** for Control Review data call and Earned Value Management (EVM) reporting. - Using ***portfolio charts*** for Control Review data analysis. - Using the ***scoring module and in-line scoring*** for use in Control Review analysis and EVM reporting. - Leveraging ***EVM calculations*** through the Performance Baseline Tables. - Using ***MS Project import functionality*** for EVM data/calculations. - Using the ***reporting module*** to scan for completeness and areas of strength/weakness.
Evaluate	- ***Leverage existing fields*** for Post Implementation Reviews (PIRs) and Lessons Learned. - ***Customize and create fields*** for Post Implementation Reviews (PIRs) and Lessons Learned. - Using the ***reporting module*** to scan for completeness and areas of strength/weakness.

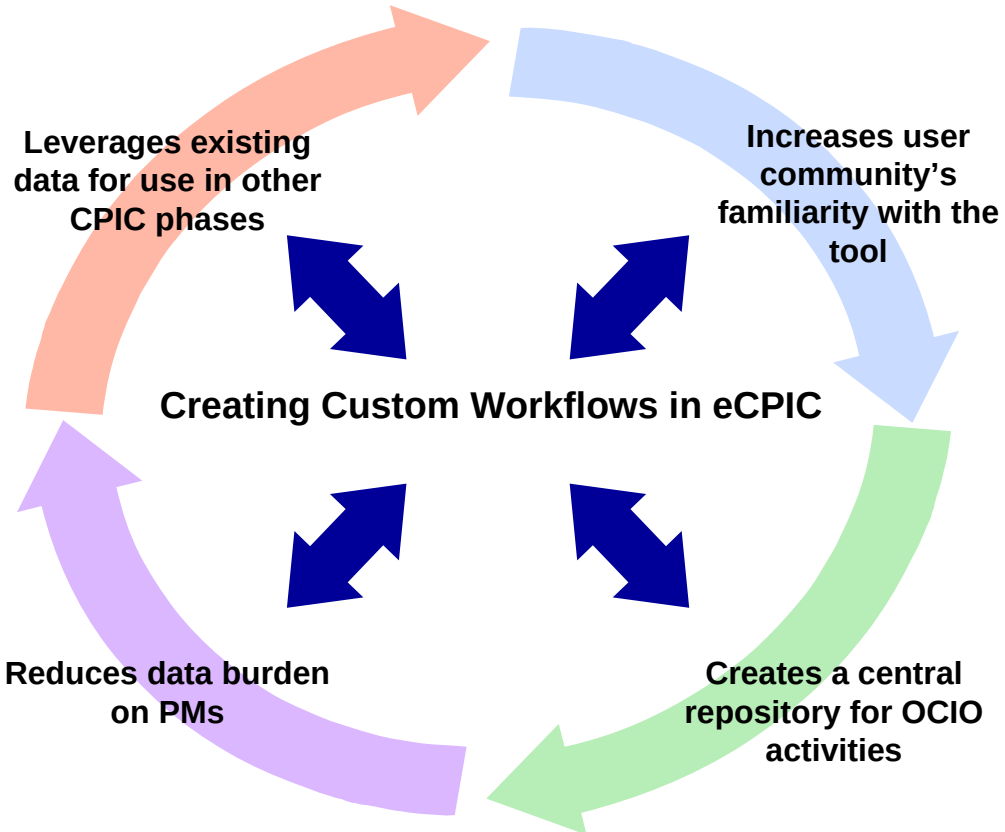
eCPIC functionality and support of Office of the Chief Information Officer (OCIO) activities

CPIC Phase	eCPIC functionality
Portfolio Management	- ***Creating portfolios*** to manage investments, group projects by common characteristics, and organize data to provide more narrow views for decision-making and trade-off analysis. - Using ***portfolio dashboards and graphing*** functionality lends itself to trend analysis thereby summarizing data for executive-level review.
Project Management	- Leveraging the ***Performance Baseline Tables*** for better project management by requesting a detailed Work Breakdown Structure (WBS) from Project Managers. - Providing real-time updates and/or customizing workflows that leverage the ***Security and Privacy modules*** for responding to OMB requirements (e.g., Control testing date, PIAs, etc.) - Aligning the ***Contracts Table*** with Agency contracting policies through the ***Acquisition Strategy module***. - Tracking project cost and benefits (quantitative and qualitative) through the ***Alternatives Analysis*** **module.** - Using the ***Performance Measures module*** for regular updates (e.g., Control Reviews) on actual results. - Collecting reference model data through the ***Enterprise Architecture (EA) module.*** - Tracking **eGov requirements** through (1) Utilizing Exhibit 300 ***Section IV*** to track partner agency contributions, shared assets, and partner agency sign-off; (2) Creating a historical archive of eGov data, including Memorandums of Understanding (MOUs), Interagency Agreements (IAAs), Milestone Reports, etc. in the ***eCPIC resource library****;* and (3) ***Creating new fields*** **and** ***customized workflows*** for Alignment and Implementation Milestone reporting to OMB.

The use of Customized Workflows

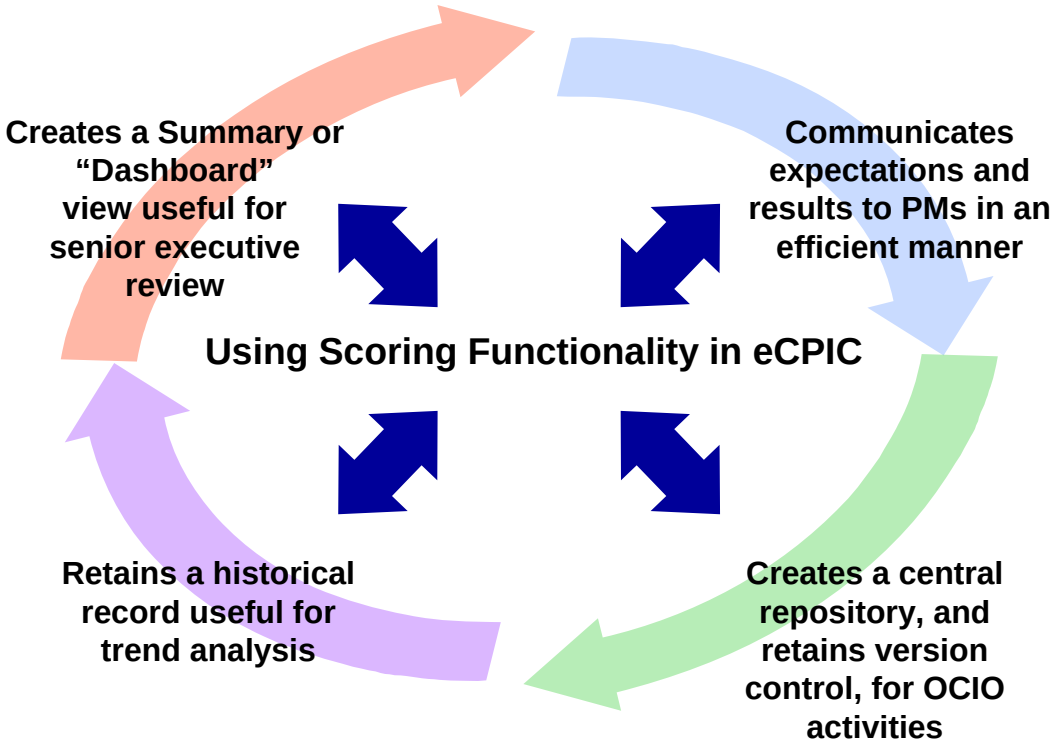
- eCPIC can be customized to create a variety of workflows to capture data for typical OCIO functions.

- Agencies can use this functionality to create workflows to support underlying CPIC processes. Examples of new workflows may include:
  - Control Review process
  - EVM reporting
  - Select/business case process
  - PIR process
  - eGov reporting requirements
  - Security Milestones
  - Ad-hoc OMB and/or agency data calls



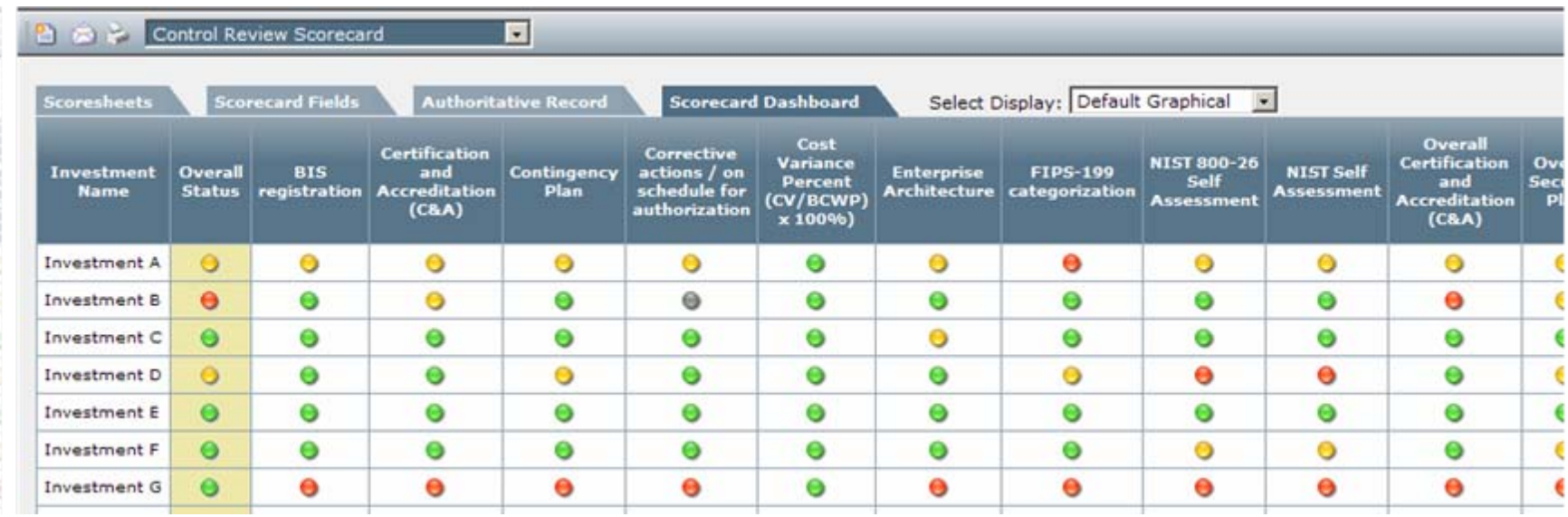
Scoring Functionality in eCPIC

- The scoring functionality can be used by agencies to score and evaluate the progress and performance of investments and/or portfolios against internal or external reporting requirements.
- Agencies can utilize eCPIC through the use of default scorecards already in the system or by creating customized scorecards tailored to their specific needs.
  - Agencies can create and customize scorecards based on their own weighting and criteria



Scoring Functionality and Enhancing Executive-Level Decision Making

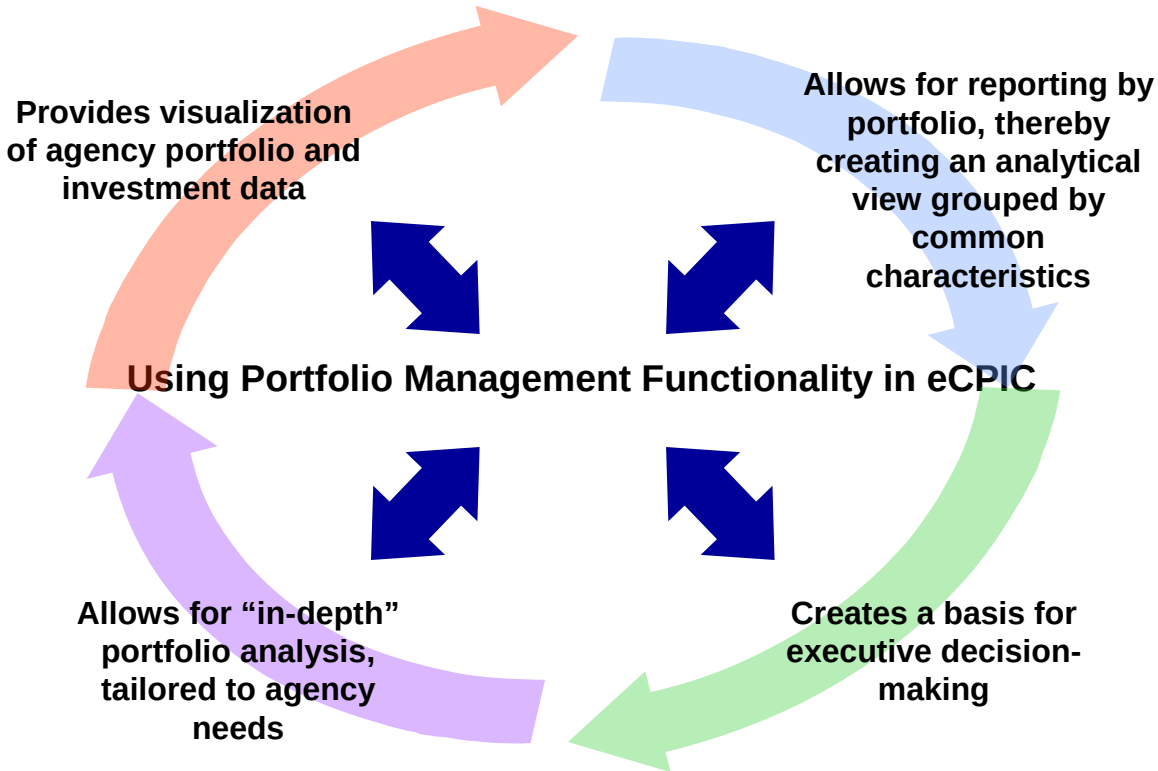
- Depending on the level of maturity of an agency's CPIC and portfolio management processes, agencies often face challenges that include:
  - Collecting data that is not often *displayed* in an efficient or effective way to senior decision-makers
  - Collecting data that is not *used* by senior executives to make a corresponding decision
- Using the scoring functionality in eCPIC can help display data in a manner that creates an atmosphere more conducive to decision-making (e.g., Scorecard Dashboard below).



Investment Name	Overall Status	BIS registration	Certification and Accreditation (C&A)	Contingency Plan	Corrective actions / on schedule for authorization	Cost Variance Percent (CV/BCWP) x 100%)	Enterprise Architecture	FIPS-199 categorization	NIST 800-26 Self Assessment	NIST Self Assessment	Overall Certification and Accreditation (C&A)	Ove Sec Pl
Investment A	Y	Y	Y	Y	Y	G	Y	R	Y	Y	Y	Y
Investment B	R	G	Y	G	G	G	G	G	G	G	R	Y
Investment C	G	G	G	G	G	G	Y	G	G	G	G	G
Investment D	Y	G	G	Y	G	G	G	Y	R	R	G	Y
Investment E	G	G	G	G	G	G	G	G	G	G	G	G
Investment F	G	G	G	G	G	G	G	G	Y	Y	G	Y
Investment G	G	R	R	R	R	G	R	R	R	R	R	R

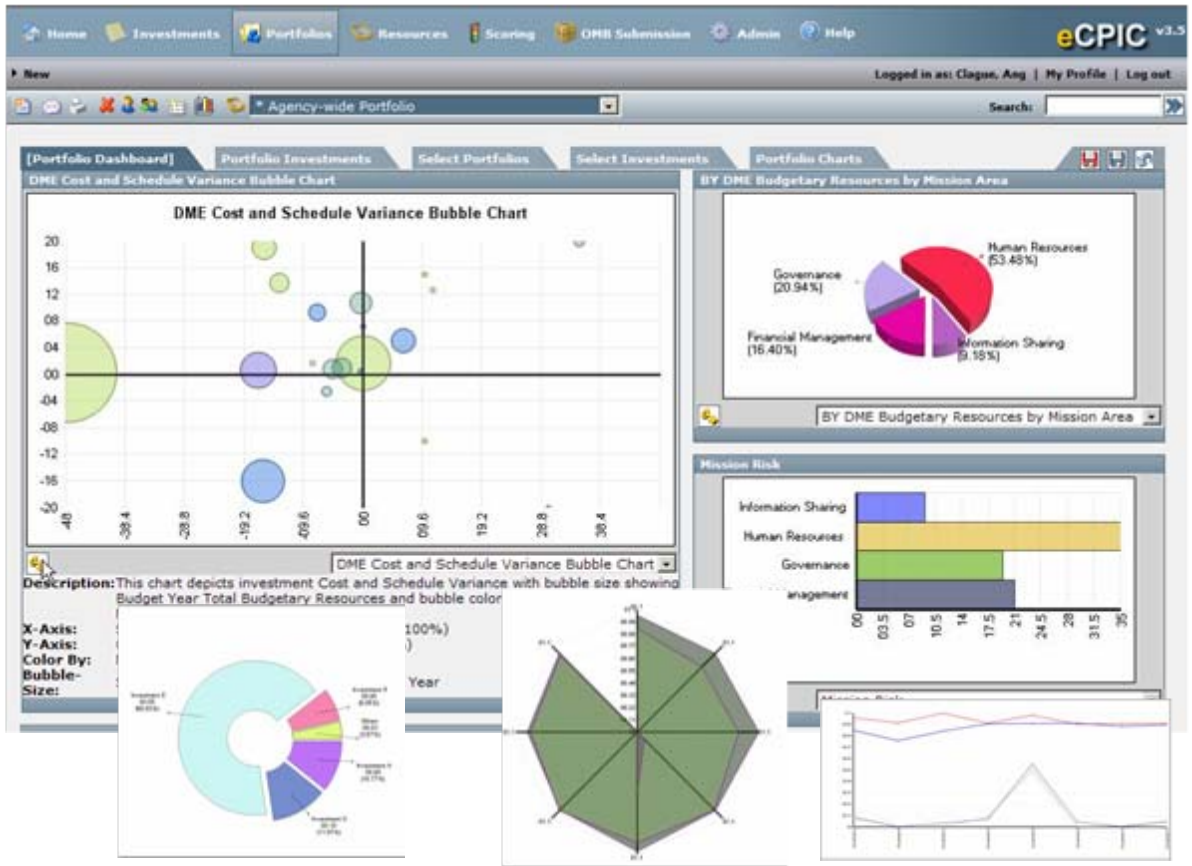
Portfolio Management Functionality in eCPIC

- eCPIC affords users the ability to group investments into one or more portfolio categories.
  - Portfolios allow users to perform aggregate reporting across multiple investments and investment portfolios to assess a variety of data.



Portfolio visualizations provide decision-makers with insights that can facilitate trade-off analysis and development of target portfolios

- eCPIC has the functionality to dynamically generate graphs using investment fields that are available within the system. Chart options include a Summary of Spending bubble chart, Summary of Spending pie chart, and customizable Dynamic Charts.



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IT PfM Case Study: General Services Administration IT PfM Support

Overview

- GSA developed a Select process designed to (1) meet the Agency's strategic mission and business needs; and (2) align to OMB's annual budget submission process.
  - Delivered Training
  - Created Customized Guidance
  - Designed Executive Business Case Template
  - Constructed Exhibit 300 Scoring Framework
- GSA supported the development and initiation of a Quarterly Control Review process to monitor the progress of the Agency's IT initiatives over the course of the year.
  - Created Customized Guidance
  - Designed Quarterly Control Review Template
  - Enhanced monthly EVM and financial analysis reporting
- This case study describes GSA CPIC Support through the use of eCPIC and reviews the Challenges, Approach, and Results

Challenges within the GSA CPIC Environment

Challenges	Description
Federated environment	▸ GSA has a network of 11 regional offices, including a central office in Washington, D.C.
Complex and diverse mandates	▸ Supports two major services (Federal Acquisition Service & Public Building Service). ▸ Managing partner for 5 major eGovernment initiatives and 2 government-wide lines of business (LoB). Approximately one-third of the major IT portfolio is comprised of eGov, LoB, or government-wide applications. ▸ Maintains government-wide policy, such as the Federal Acquisition Regulation, the Federal travel/per diem rate, and other necessary management policy.
Unique funding and organizational challenges	▸ Approximately 98% of GSA revenue is non-appropriated. ▸ Large scale reorganization of staff within the Federal Acquisition Service.

Objectives of implementing PfM through the use of eCPIC at GSA

Objectives	
Reduce Complexity	▸ Reduce complexity of data management ▸ Develop a useful repository for portfolio data. – This repository should serve both short-term needs of data collection as well as long-term needs of benchmarking maintainability. ▸ Communicate the impact (costs) of a complex (non-standard) environment
Decrease Redundancies in Reporting	▸ Streamline and standardize data call templates ▸ Reduce level of effort required by Service and Staff Offices
Enhance Communication	▸ Allow for more informed decisions regarding the funding of the Agency's IT Initiatives
Increase Effectiveness	▸ Develop foundation for CPIC process simplification ▸ Provide visibility into the GSA IT Portfolio

Key deliverables and analysis

		What Was Done	Impact
1	Customized Guidance	▸ Designed Ex 300 and Ex 53 Guidance in accordance with the OMB Circular A-11 ▸ Utilized eCPIC screenshots of relevant workflows within the Guidance to demonstrate the use of the tool within the process	▸ Ease of use in completing necessary OMB requirements ▸ Communicated step-by-step process to users
2	Integrated Training	▸ Offered CPIC training sessions and brown bags that were facilitated by an instructor ▸ Integrated eCPIC training with CPIC processes as a side by side demonstration	▸ Integration of budget submission training with an accompanying demonstration of the eCPIC modules gives the user a more comprehensive understanding of eCPIC functionality
3	Executive Business Case	▸ Developed a uniform business case template within eCPIC for data collection in preparation for Select activities	▸ Reduces duplication and the burden of data collection through the reuse of similar OMB required fields and information

Key deliverables and analysis

		What Was Done	Impact
4	Exhibit 300 Scoring Framework	▸ Created a Scoring Framework within eCPIC to assist in the development of the Exhibit 300s for OMB Submission ▸ Bi-weekly scoring sessions with Subject Matter Experts provided feedback to Project Managers and Senior Management through the use of eCPIC reports	▸ Increased transparency of Agency IT Initiatives ▸ Enabled improved decision making by GSA Leadership ▸ Enhanced communication of necessary information for improving their Ex 300 submissions
5	Control Review Template	▸ Developed a uniform control review template within eCPIC for data collection in preparation for Quarterly Control Review activities	▸ Reduces duplication and the burden of data collection through the reuse of similar OMB required fields and information
6	EVM Reporting Enhancements	▸ Have planned the rollout of monthly EVM reporting and Baseline Change Management within eCPIC	▸ Reduces corruption of earned value data ▸ Reduces number of tools used to report information ▸ Enhances communication and decision making through the use of baseline table change requests ▸ Increases controls over baselines

The results of enhancing Portfolio Management through the use of eCPIC

Results

- More informed decision making through the use of better quality data collection
- Reduction in duplicative and burdensome data calls
- Increased transparency of Agency IT Initiatives
- Enhanced communication through integrated guidance, scoring frameworks, and standardized reporting
- Decreased number of tools used in data reporting

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eCPIC Points of Contact

eCPIC Government Sponsors	
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