DEPARTMENT OF ADMINISTRATION

STATE INFORMATION TECHNOLOGY SERVICES DIVISION

CALCULATING IT PROJECT COMPOSITE ROI

Department of Administration

State Information Technology Services Division

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Note: Generative Artificial Intelligence was used in the development of this document.

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EXECUTIVE SUMMARY

Measuring the return on investment (ROI) for government IT projects is extremely challenging. Unlike the private sector, where financial metrics dominate, government projects must also account for public value—benefits that may not have immediate monetary returns but have a significant impact on the value provided to citizens, businesses, and visitors to the state. Evaluating these projects demands a framework that integrates financial performance and public value. Therefore, the State Information Technology Services Division (SITSD) of the Department of Administration suggests combining existing frameworks to create a composite score. By combining principles from both the cost-benefit analysis (CBA) and public value frameworks (PVF), we can address both financial impact and ensure that benefits to the consumers of government services are considered. Some of the benefits of this approach include:

- **Comprehensive Evaluation**: Provides a holistic view of the project's impact, considering both financial returns and broader societal benefits.
- **Better Decision-Making**: Helps decision-makers understand trade-offs and make more informed choices about IT investments.
- **Enhanced Accountability**: Demonstrates accountability to taxpayers and stakeholders by showing how public funds generate financial and public value.
- **Strategic Alignment**: Ensures IT projects align with strategic goals and public policy objectives, maximizing their effectiveness and relevance.
- **Population Impact:** Includes the impact on a specific population (citizen or state employee), assessing the percentage of that population affected by the IT project. This provides an additional measure of public value by highlighting the reach and significance of the project's benefits.

METHODOLOGY OVERVIEW

The methodology developed aims to comprehensively evaluate government IT projects by combining financial and public value metrics into a single Composite Return on Investment (CRI) score. This integrated approach ensures that both the financial returns and societal benefits of IT projects are systematically assessed, facilitating informed decision-making and prioritization.

Financial Benefit-Cost Calculation

The financial component is based on the cost-benefit analysis method. It uses a simplified Benefit-Cost Ratio over five (5) years to estimate financial benefit before a project and measures the direct financial benefit after the project is completed relative to its costs. It is simplified in that no calculations are required to determine the present value.

```
Benefit-Cost Ratio = Financial Benefit / Total Cost (over 5 years)
```

Public Value Metrics

Public value metrics assess the broader societal impact of IT projects, encompassing four key categories: Improved Service Delivery, Increased Transparency, Enhanced Public Welfare, and Compliance. Each category is scored on a scale of 1 to 10 based on specific criteria, and these scores are normalized to a 100-point scale.

1. **Improved Service Delivery**:
    - Evaluates enhancements in service efficiency, effectiveness, and accessibility.
    - Metrics: Reduction in processing times, service accessibility, service quality.
    - Scoring: 1-10, based on the degree of improvement.
2. **Increased Transparency**:
    - Measures the extent to which the project makes government operations more open and accountable.
    - Metrics: Data availability, clarity of communication, accountability mechanisms.
    - Scoring: 1-10, based on improvements in transparency.
3. **Enhanced Public Welfare**:
    - Assesses the project's impact on public health, safety, economic benefits, and social equity.
    - Metrics: Health and safety improvements, economic benefits, social equity enhancements.
    - Scoring: 1-10, based on the degree of public welfare enhancement.
4. **Compliance**:
    - Evaluates the project's adherence to regulatory requirements and its effectiveness in avoiding penalties.
    - Metrics: Regulatory compliance, improvements in reporting, mechanisms to prevent penalties.
    - Scoring: 1-10, based on compliance effectiveness.
5. **Population Impact**:
    - Measures the project's impact on the population, either state employees or citizens, estimated as a percentage of the total population affected. It evaluates the reach and significance of the project.
    - Metrics: Number of state employees or citizens impacted, percentage of the total population affected.
    - Scoring: 1-10, based on the reach of the project.

Composite Return on Investment Calculation

The Composite ROI integrates financial and public value metrics using assigned weights. This approach ensures a balanced evaluation that reflects financial returns and societal benefits.

```
Composite ROI = (W1 x Cost-Benefit Ratio) + (W2 x Public Value Index)
```

W1 and W2 are weights assigned to Benefit-Cost Ratio and public value, respectively, summing to 1.

Implementation and Interpretation

This document includes guidance for how to calculate the composite index, including:

- **Scoring Guide**: The scoring guide for each public value category provides clear criteria for evaluating the impact of IT projects. Scores are normalized and integrated into the Composite ROI formula.
- **Thresholds**: CRI scores are categorized as low (0-40), medium (41-70), or high (71+) to facilitate quick assessment and prioritization.

Conclusion

This methodology offers a framework for evaluating the overall impact of government IT projects, combining financial metrics with public value assessments to support strategic decision-making. By integrating these diverse metrics into a single Composite ROI, stakeholders can better understand the multifaceted benefits of IT investments, ensuring that resources are allocated to projects that deliver the greatest value to the government and the public.

SCORING GUIDE

The following section reviews how to correct both financial and public value scores. A companion Excel template is provided for calculating the composite ROI (CompositeROI Calculator.xlsx).

CALCULATION OF THE BENEFIT-COST RATIO

Financial benefits are a crucial component in evaluating the Benefit-Cost Ratio of government IT projects. Here is a breakdown of how to calculate financial benefits:

Components of Financial Benefits

1. **Revenue Generation**:
    - **Direct Revenue**: Income generated directly from the project, which the IT asset enables. Examples of revenue might include fees, sales and leases, and fines and penalties.
    - **Indirect Revenue**: Ancillary income from the project, which might include increased grants or federal funds.
2. **Cost Savings**:
    - **Operational Efficiency**: Savings achieved by automating processes, reducing manual labor, and enhancing productivity.
    - **Resource Optimization**: Reduction in resource consumption (e.g., energy, materials) due to more efficient systems.
    - **Maintenance and Support Costs**: Decreased expenses related to maintaining and supporting older systems.
3. **Cost Avoidance**:
    - **Penalty Avoidance**: Financial savings from avoiding fines and penalties due to regulatory compliance.
    - **Risk Mitigation**: Savings from avoiding potential risks and their associated costs, such as data breaches or system failures.

Calculation Steps

1. **Identify All Relevant Financial Gains**:
    - Calculate all direct and indirect revenue streams attributable to the IT project.
    - Assess cost savings in operational efficiency, resource optimization, and reduced maintenance and support costs.
    - Estimate cost avoidance from regulatory compliance and risk mitigation.
2. **Summarize Total Financial Gains**:

```
Total Financial Benefit = Direct Revenue + Indirect Revenue +
Operational Efficiency Savings + Resource Optimization Savings +
Maintenance and Support Savings + Penalty Avoidance Savings +
Risk Mitigation Savings
```

3. **Calculate Total Cost**

   Total Cost =
   Initial Costs (hardware and software, development costs, implementation costs, training costs)
   + Operational Costs (5-year cost of maintenance and support, subscription costs, staffing costs, and utilities)
   + Compliance Costs (cost of regulatory compliance and security measures)
   + Indirect Costs (opportunity costs and productivity losses)

4. **Calculate Benefit-Cost Ratio**:

   ```
   BCR = Financial Benefits / Total Cost
   ```

CALCULATION OF PUBLIC VALUE SCORE

1. Improved Service Delivery

Description: Improved service delivery refers to the enhancement of the efficiency, effectiveness, and accessibility of government services provided to the public. This category evaluates how well an IT project improves service speed, quality, and reach, ensuring that citizens receive timely, accurate, and user-friendly services.

Scoring Guide:

- **10**: Significant reduction in processing times (e.g., over 50%), broad accessibility (e.g., multiple platforms like online and mobile), and high-quality services with minimal errors and high user satisfaction.
- **7-9**: Moderate improvements in processing times (e.g., 20-50%), good accessibility (e.g., available on major platforms), and generally reliable services with occasional errors.
- **4-6**: Some improvements in processing times (e.g., 10-20%), limited accessibility (e.g., available on one or two platforms), and noticeable errors affecting service quality.
- **1-3**: Minimal or no noticeable improvement in processing times, poor accessibility, and frequent errors significantly affecting service quality.

2. Increased Transparency

Description: Increased transparency involves making government operations more open and accessible to the public, enhancing accountability and trust. This category assesses how well an IT project facilitates public access to information, improves clarity of communication, and establishes mechanisms for public feedback and oversight.

Scoring Guide:

- **10**: Comprehensive availability of data and information, highly clear and accessible communication, and strong, well-utilized mechanisms for public feedback and accountability.
- **7-9**: Significant improvements in data availability and communication, with good but not comprehensive feedback mechanisms.
- **4-6**: Moderate improvements in transparency, some data and information made available, with basic feedback mechanisms.
- **1-3**: Minimal improvements, little data availability, and poor communication with inadequate feedback mechanisms.

3. Enhanced Public Welfare

Description: Enhanced public welfare measures the impact of an IT project on the overall well-being of the public. This includes improvements in public health, safety, economic benefits, and social equity. Projects that contribute to significant societal benefits, such as reducing health risks or creating economic opportunities, score highly in this category.

Scoring Guide:

- **10**: Major improvements in public health and safety, significant economic benefits (e.g., job creation, cost savings for citizens), and strong positive impacts on social equity (e.g., services for underserved populations).
- **7-9**: Noticeable improvements in public health and safety, considerable economic benefits, and positive impacts on social equity.
- **4-6**: Moderate improvements in public welfare with some positive impacts on health, safety, and the economy.
- **1-3**: Minimal impact on public welfare, with little to no improvement in health, safety, or economic conditions.

4. Compliance

Description: Compliance measures how effectively an IT project meets regulatory requirements and avoids penalties. This includes adhering to legal standards, improving regulatory reporting, and ensuring the project reduces the risk of non-compliance, fines, and legal issues. Projects that meet or exceed compliance standards help enhance public trust and safety.

Scoring Guide:

- **10**: Full compliance with all regulatory requirements, significant improvements in regulatory reporting, and robust mechanisms to prevent non-compliance penalties.
- **7-9**: Strong compliance with most regulatory requirements, noticeable improvements in reporting, and good mechanisms to avoid penalties.
- **4-6**: Adequate compliance with basic requirements, some improvements in reporting, and basic mechanisms to manage compliance risks.
- **1-3**: Minimal compliance, poor reporting, and high risk of non-compliance penalties.

5. Population Impact

- **Description:** This dimension assesses the project's impact on the population, measuring the percentage of state employees or citizens affected. It ensures that the project's benefits reach a significant portion of the target population.

Scoring Guide:

10: Significant impact on more than 70% of the target population.

7-9: Moderate impact on 40-69% of the target population.

4-6: Some impact on 10-39% of the target population.

1-3: Minimal impact on less than 10% of the target population.

INTERPRETING CRI SCORES

The following section reviews how to interpret scores. Because this is a new methodology, SITSD is working to apply this methodology to a representative sample of past projects, both successful and not successful, to ensure the following guidance is appropriate.

1. **Low CRI Score (0-40)**
    - **Interpretation**: A low CRI score indicates the project has minimal financial returns and/or public value. This could suggest that the project is not cost-effective or does not significantly contribute to public welfare.
    - **Implications**: Projects with low CRI scores may require re-evaluation or redesign. They might need additional justification or changes to improve their impact.
2. **Medium CRI Score (41-70)**
    - **Interpretation**: A medium CRI score shows moderate financial return and public value. The project is delivering benefits, but there is room for improvement.
    - **Implications**: Projects with medium CRI scores are generally viable but should be monitored for potential enhancements. Optimization strategies might be considered to increase their effectiveness and impact.
3. **High CRI Score (71+)**
    - **Interpretation**: A high CRI score reflects strong financial returns and significant public value. These projects are highly effective and provide substantial benefits relative to their costs.
    - **Implications**: Projects with high CRI scores should be prioritized for continued investment and support. They are good candidates for scaling or replication in other areas.

- **Example Interpretation:**
- **CRI Score of 25**: This project might be reconsidered or significantly revised, as it does not provide adequate financial or public value benefits.
- **CRI Score of 55**: This project is performing adequately but could benefit from targeted improvements to enhance its overall impact.
- **CRI Score of 85**: This project is performing exceptionally well and should be used as a model for future initiatives.
- **Setting Benchmarks:**
- The exact thresholds for low, medium, and high scores can be adjusted based on the specific context and strategic goals of the organization. Historical project data and industry benchmarks can help set these thresholds more accurately. For instance, if most successful projects in the past have had CRI scores above 70, this might become the benchmark for a high score.
- Using these interpretations, stakeholders can quickly assess the viability and impact of IT projects, facilitating better decision-making and resource allocation. If you have specific thresholds or examples in mind, we can tailor this framework to better fit your needs.