
Steering IT into the next millennium:
A guideline to establishing governance of
Department's Information Technology Organizations

**Was initiated by the
Treasury Board of Canada Secretariat**
Project Management Office
Chief Information Officer Branch

This project was initiated with the sponsorship and participation of the Treasury Board of Canada. The interim results presented in this report do not bear Treasury Board Secretariat endorsement since the work is not yet ratified.

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Document: Deliverable_1_V_0.7
Date: July 28, 1998
Status: Working Paper
Version: 0.7

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PUBLICATION HISTORY

Version	Release Date	Revisions
0.1	February 20, 1998	Table of Contents only. For discussion purposes only.
0.2	March 30, 1998	First Draft for SEMRL review only.
0.3	April 1, 1998	Working paper for review by working group.
0.4	April 14, 1998	Significant reorganization of previous version based on Working Group Members' comments. For TBS and UQAM review only.
0.5	April 17, 1998	Revised version with comments from working session with TBS and UQAM.
0.6	April 22, 1998	Revised version with comments from TBS and working group members.
0.7	July 27, 1998	Revised by Alain Abran for distribution to member of the International Review Board.

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Preface

The Background and Purpose of this guide

The Government is committed to delivering its programs and services more efficiently and effectively through the use of Information Technology. Reviews of Government IT projects conducted by the Treasury Board of Canada Secretariat (TBS) and the Office of the Auditor General (OAG) have identified issues in the Government's management and delivery of IT projects.

To address these issues and enhance the Government's framework for managing and delivering IT projects, a TBS Project Management Office (PMO) was formed. The purpose of the PMO is to provide guidance and support to departments, helping them ensure that the Government's projects

- satisfy the requirements of the program functions or services they are designed to support,
- deliver all expected benefits, and
- are completed on time and within budget.

In May 1996, the PMO, in conjunction with operating departments, published a document of project management guiding principles and best practices that address project management issues experienced within Federal Government. *An Enhanced Framework for the Management of Information Technology Projects* provides guidance for future improvements to the IT project management practices currently found within departments.

Promoted practices are detailed in the *Enhanced Framework II: Solutions: Putting the Principles to Work*, available through the PMO and on the Internet (www.cio-dpi.gc.ca). In order to expand this initial set of solutions and further assist departments to improve, the PMO had a requirement to develop a guidelines document in the area of IT governance to add to the existing management tools kit.

This project was terminated prior to completion. Therefore this report does not bear the endorsement of the Treasury Board of Canada since it has not yet been ratified. However, this report is put in the public domain for further enhancements by the research community.

The purpose of this document is to present this set of guidelines to implement governance within departments. This guideline has been developed in cooperation by the TBS PMO, representatives from various government departments, the Université of Québec in Montréal and *Godcharles Goulet Fournier*, a management consulting firm, who also managed the process.

Why this guide was developed

The need to establish sound governance has been discussed in many industry surveys¹. The Enhanced Framework initiative has clearly identified that problems facing IT projects were primarily due to organizational and governance issues. The absence of business directions, clear accountabilities and corporate discipline burdened projects with the task

¹ Reports from the Standish Group and KPMG have identified governance issues as key reasons for project failures.

of “moving the organization along” when delivering projects. Sound governance will address many of these issues.

In the United States, the Government Accounting Office (GAO) has emphasized the need for government executives to provide hard facts on mission and program results and has extended this concept to the management of IT. A recent initiative, documented in an Executive Guide to measuring performance and demonstrating results of IT investments², clearly highlights the importance of governance to improving organization’s ability to deliver results.

From an economic standpoint, ineffective IT governance currently found in the federal government and throughout the industry is impeding organizations’ ability to transfer resources from “maintenance” type activities to more value-added “enhancement” type of activities. Accrued savings and continued harvesting of IT benefits is currently difficult due to the absence of clear policies, strategic IT leadership, timely decision-making and oversight.

² See the U.S. GAO report titled “Measuring Performance and Demonstrating Results of Information Technology Investments”, sept. 1997.

1. Scope of the Guidelines

This section provides the scope of these guidelines in terms of three key elements:

- a. Organizational entities and participants;
- b. Governance processes; and
- c. Types of information technology (IT) products and services.

1.1 Organizational Entities and Participants

The organizational entities and participants targeted by these guidelines include the organizational entities that invest in IT in order to achieve specific business goals or deliver programs. They are normally responsible to define the needs for IT and manage the process of acquiring IT services and products. Their objective is to convert resource investments into IT assets that will be maintained in order to continue harvesting the benefits initially sought by the investment. Within the context of this document, they are referred to as the acquirers.

These guidelines also include the organizational entities that are responsible to deliver the IT services and/or products requested by the acquirers. Their responsibilities include the development and maintenance processes as well as those processes required to support the creation and maintenance of IT assets. They can be internal or external to the acquirers' organizations. Within the context of this document, they are referred to as the suppliers.

The guidelines explicitly focus on the relationship between these two functional entities as part of a governance structure. More specifically, they emphasize the role and accountabilities of the first level of management that typically deals with portfolios of projects or investment needs as well as the next level above these managers. These two layers of the functional organizations are referred to as Direct and Corporate Governance. Details on these levels of governance are provided in section 2 below.

This relationship is depicted in Figure 1.

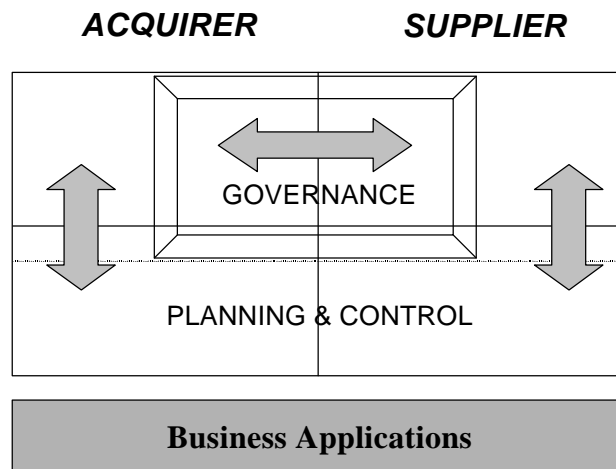


Figure 1 – Governance Guideline Scope

1.2 Governance Functions

Governance, within the context of this guideline, encompasses the following four business functions:

- a. **Formulating Policies and Standards.** This function deals with the establishment of boundaries for the IT investments and expenditures. They include both business and technical boundaries which are either expressed in terms of corporate policies or technical standards;
- b. **Defining Strategies and Providing Leadership.** This function provides the medium to long term directions of the organization as well as its IT investment and expenditure priorities;
- c. **Making Decisions.** This function addresses the need to resolve issues and problems, or simply allow for the timely evolution of the investments and expenditures by selecting options, alternatives or courses of action; and
- d. **Providing Oversight.** This function consists of gathering progress data and converting it into meaningful decision-making information.

These processes are strongly related to the commonly known planning and control processes typically addressed by performance measurement programs but differ in focus. Governance processes focus on mission results used for policy, decision-making and strategies as well as results associated with management and operational improvements³. Planning and control processes focus on activity and task levels used to make tactical decisions and execute management decisions.

1.3 Types of information technology (IT) products and services

The range of IT products and services is wide and diverse. In order to limit the scope of this guideline, it was decided that only business applications types of IT products as well as the development and maintenance services needed to develop and maintain these products would be examined as part of this first version of the guideline. Business applications types of products have been defined as those software-intensive systems that support one or several functions of an organization at the sub-system level. This guideline will focus on the provision of governance at the system and sub-system levels of these IT products. IT Infrastructure types of products are not addressed in this current version of the guideline.

1.4 Decision Model⁴

Governance, as defined above, is normally applied using a clearly defined decision model that identifies clear decision points and allows investment phases to be properly initiated, executed and closed out. Due to the wide variety of such models, these guidelines propose a sequence of decisions which identifies three key points in time where decisions should be made:

³ The focus of governance as been defined by the U.S. GAO in "Measuring Performance and Demonstrating Results of Information Technology Investments", sept. 1997.

⁴ The decision model provided herein is based on the work of the U.S. GAO

- a. The **“Selection”** decision refers to the period where organizations must make decisions regarding the commitment/allocation of resources to specific investment opportunities or expenditures areas as well as ensuring that the best opportunities and areas have been selected;
- b. The **“Implement”** decision refers to the period where the investment and expenditure plans are executed with a view to deliver the expected benefits identified during the selection period and decisions are made to ensure their timely evolution; and
- c. The **“Evaluation”** decision refers to the period where departments assess the validity and value of each investment and expenditure in light of the strategic objectives and the results achieved.

Such as model, clearly supports the concept of pre-determined gates at each investment phases and the need for risk based decision making as described in the Treasury Board of Canada Secretariat (TBS) Enhanced Framework. Sample applications of the decision model to different types of investments and expenditures as well as different types of investment life cycles (ISO 12207 and PMI) are provided in Appendix 1 (UQAM to develop the annex).

1.5 Guidelines Overview

The guidelines provided in this document are positioned at the intersection of the decision model discussed in section 1.2 and the governance functions identified in section 1.1 using a simple matrix as follows:

Decision model Governance functions	Selection	Implementation	Evaluation
Policy and Standard Formulation	Select, document, and promote policies and IT standards	Address policies and standards issues emerging from IT investments and expenditures	Assess policy and standard framework
Strategy and Leadership	Provide the strategic framework to the acquirer and supplier organizations	Address strategic issues emerging from IT investments and expenditures	Assess the strategic framework
Decision-Making	Mobilize resources against investment and expenditure plans	Decide whether to cancel, modify, continue or accelerate investments and expenditures	Determine the future directions of IT investments and expenditures
Oversight	Determine whether investment and expenditure proposals followed sound selection and planning processes	Identify variances to plans early, Identify changes to environmental context	Revise the selection and implement phases based on lessons learned

Table 1: Guidelines Overview

1.6 Opportunities and Barriers to Governance

Governance can be difficult to implement particularly in those organizations that display lower levels of maturity regarding the implementation of best practices. Opportunities for introducing governance will likely appear in organizations where:

- a. Key departmental decision makers are committed to the need for governance and its key functions;
- b. Key departmental decision makers are usually involved in the full life-cycle of IT products;
- c. Interest in governance is demonstrated by the acquirer and supplier organizations; and
- d. Clear accountability frameworks are defined for the entire organization.

Typical barriers will include:

- a. The absence of clear knowledge of governance and its benefits;
- b. Cultural issues regarding the basic concepts of governance;
- c. Resistance to change particularly as it relates to introducing explicit performance measurement;
- d. Instability and high personnel turnover;
- e. Technology focus of IT administrative units;
- f. Market hype drive inside IT administrative units and
- g. Lack of ability to assess technologies risks and potential.

1.7 Implementing Governance

The remaining of the document defines the guidelines that should be used to direct the efforts of departments in implementing governance. Governance must be implemented through the contribution of three related and equally important components:

- a. the governance structure (1 guideline);
- b. the governance decision model (12 guidelines as per the matrix provided in section 1.5); and
- c. the governance information (1 guideline).

The following sections examine each guideline and identify their related criteria, their links to the appropriate bodies of knowledge, and their application to maintenance and development environments.

2 Governance Structure

Guideline 1:

Design and implement organizational structure to support the governance process.

The first step in implementing governance is to design and implement a governance structure. There are no definite rules for establishing a governance structure but these are generally accepted guidelines:

- a. A sound governance structure will normally extend the acquirer and supplier organizations, at the investment/expenditure level, up to the point of convergence of these two organizations;
- b. Governance will normally occur at two levels: Direct Governance which corresponds to the Director level and deal with the lowest level of IT business unit within a department and Corporate Governance which corresponds to the Director General and Assistant Deputy Minister levels;
- c. Along this structure, clear accountabilities and roles must be defined. Within the government, the highest levels within each group (acquirer and supplier) will likely be the program ADM who is investing in technology and the CIO who has ultimate responsibility for the management and delivery of IT services and products;
- d. Accountabilities will rest with specific individuals and committees will be used to provide guidance and build consensus when possible; and
- e. The governance structure should include investment review groups which are the same or different from the standard committee structure.

Generically, this structure can be depicted as a pyramid with two levels of governance and a series of committees supporting the four governance functions.

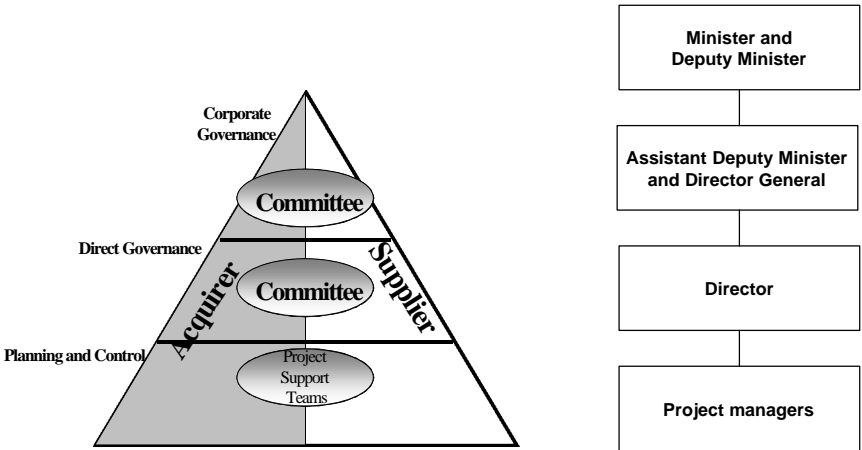


Figure 4: Proposed Governance Structure and corresponding Canadian Government hierarchical levels

3 Policy and Standard Formulation

The policy and standard formulation function, that must be performed by the governance, plays a key role in delimiting the boundaries of the IT investments. Policies normally address the business boundaries of the investments such as desired outcomes from IT investments, the decision criteria to be used when selecting the investments, and the processes to be implemented in support of the realization of the investment plan. Standards normally address more technical boundaries such as technical directions (e.g. TBITS), operating environments, and database management systems. Going through the decision model defined in section 1 (eg. select, implement, evaluate), this function provides the boundaries for making decisions regarding the IT investments that will be selected. During the implementation phase, governance makes decisions regarding policy and standards issues that may unduly prevent the achievement of the objectives. Finally, during the evaluation phase, governance assesses its policy and standard framework in order to determine its validity and contribution to improving department's return on their IT investments.

The Governance guidelines applicable to this function include:

- a. Select, document, and promote policies and standards for IT investments and expenditures (Guideline 2);
- b. Address policies and standards issues emerging from IT investments and expenditures (Guideline 3); and
- c. Assess policy and standard framework used for IT investments and expenditures (Guideline 4).

The following paragraphs detail each of the guidelines applicable to this function.

Guideline 2:			
Select, document, and promote policies and IT standards.			
	Select	Implement	Evaluate
Policy			
Leadership			
Decision			
Oversight			

Governance must provide the boundaries and clearly define the decision environment for the selection phase. Specifically, it must clearly state the policies to be enforced throughout the life of an investment, including its operation, and the standards to which investments must comply. This function is normally performed by the corporate governance and enforced by the direct governance individuals. Key criteria to be addressed by governance in this guideline include:

- a. **Criteria 1.** Governance must establish clear policies concerning the acceptable outcomes from an IT investment or an IT expenditure. These acceptable outcomes are normally different from one organization to another but should address desired return on investment, internal rate of return, payback period, consult P.A. Strassman "The Squandered Computer" for further coverage of these topics. These outcomes should be expressed in terms of ranges and thresholds. These acceptable outcomes will form the decision criteria for the proposed investments or expenditure. Criteria should as well be assigned a weighting factor to reflect their relative importance against the other criteria. Specific guidance regarding this criteria can be found in <<**TBS to provide internal references. State other body of knowledge here**>>.

- b. **Criteria 2.** Governance must clearly specify the selection process that will lead to the decision. These policies will determine the required rigor to be applied to different levels of investments or expenditure. The policy should clearly identify the need and format of business cases to be used as part of the proposal, both for new investments and for maintenance expenditures. Definitions should also be provided in order to standardize the contents on the investment or expenditure proposals. The TBS is currently recommending the use of its published guide entitled "Justifying IT investments ..." for new projects. This guide can be found on the TBS web site (include URL here).

- c. **Criteria 3.** Governance must establish clear policies regarding the planning processes to be implemented when developing IT investment or expenditure proposals. Specific process areas to be addressed include those found in <<**supply reference here**>>. Details of these models can be found in Appendix <<**to be determined**>>.

- d. **Criteria 4.** Governance must develop departmental policies regarding the level at which investments or expenditures must be reviewed and approved. This policy must be developed within the TBS spending authority and procurement policies. Specific guidance can be found in << **TBS to provide internal reference. State body of knowledge here**>>.
- e. **Criteria 5.** Governance must clearly define the policy regarding the exceptions to the process. Legislative changes for instance are examples that should override the normal criteria for investing or spending in IT. These exceptions will differ from one organization to another but need to be documented and communicated.
- f. **Criteria 6.** Governance must emphasize the use of accepted standards that will influence the selection and direction of the IT investments and expenditures. The Government's commitment to shared systems and the TBITS suite of standards are examples of these standards. Organizations may also have their own set of standards. Areas to be addressed include technology, communications standards, security, operating environments, programming languages, database management systems, tools, and any other relevant area that will contribute to increasing the project's likelihood of success and alignment with organizational directions. Specific guidance can be found in << **TBS to provide internal reference. State body of knowledge here**>>.
- g. **Criteria 7.** Governance must clearly state, through a policy, the information requirements of the governance structure in order to provide sound control over the project in the upcoming implementation phase.

Guideline 3:

Address policies and standards issues emerging from IT investments and expenditures.

	Select	Implement	Evaluate
Policy			
Leadership			
Decision			
Oversight			

Governance must address, in a timely fashion, issues emerging from the implementation of the investment or expenditure plans with respect to policies and standards. Specifically, it must be prepared to assess, amend, replace or eliminate existing policies and standards in order to ensure that expected benefits from IT investments and expenditures are realized. It must be prepared to execute the proper trade-offs in order to balance the benefits of one investment or expenditure and the collective benefits of the entire portfolio. This function is normally performed by the corporate governance and enforced by the direct governance individuals. Key criteria to be addressed by governance in this guideline include:

- a. **Criteria 1.** Governance must establish the proper communication channels to allow individual investment and expenditure initiatives to raise issues concerning policies and standards. These channels will typically consist of extensions to the problem reporting and resolution processes or escalation procedures found within the individual initiatives. Specific guidance regarding this criteria can be found in <<State body of knowledge here. If any?>>.
- b. **Criteria 2.** Governance must identify the people best able to support the need to assess, amend, replace or eliminate existing policies and standards as a result of issues emerging from the individual investments or expenditures. Specific guidance regarding this criteria can be found in <<State body of knowledge here. If any?>>.
- c. **Criteria 3.** Governance must establish clear trade-off guidelines in order to balance the requirements of individual investments or expenditure with the remaining portfolio. Specific guidance regarding this criteria can be found in <<State body of knowledge here. If any?>>.
- d. **Criteria 4.** Governance must make decisions regarding policies and standards in a timely fashion in order to minimize the impact of decision delays on individual investments or expenditures. Specific guidance regarding this criteria can be found in <<State body of knowledge here. If any?>>.

Guideline 4:			
Assess policy and standard framework.			
	Select	Implement	Evaluate
Policy			
Leadership			
Decision			
Oversight			

Governance must determine how well the policy and standard framework helped the individual investments or expenditures meet their objectives. It must identify barriers imposed by the policy and standard framework and opportunities it provided. Governance must then take the appropriate actions based on the results of this assessment and similar assessments made on other investments or expenditures. This function is normally performed jointly by the corporate and direct governance. Key criteria to be addressed by governance in this guideline include:

- a. **Criteria 1.** Governance must, as part of a post investment review, determine how well the policy and standard framework helped the investment or expenditure to meet its objectives. It must identify barriers imposed by the policy and standard framework and opportunities it provided. Specific guidance regarding this criteria can be found in <<**State body of knowledge here. If any?>>**>.
- b. **Criteria 2.** Governance must document and communicate the results of the assessment with the resulting actions taken to the accountable individuals who will be involved in the next stage of the investment or expenditure and who will have to select where to allocate resources. Specific guidance regarding this criteria can be found in <<**State body of knowledge here. If any?>>**>

It is important at this stage to remind the reader that guidelines 2, 3 and 4 should be implemented through every functions of the investment or expenditure as identified in section 1.2. As stated, this would allow operation in an timely and structured fashion.

4 Strategy and Leadership

The strategic leadership function, that must be performed by the governance, plays a key role in providing the strategic directions of the IT investments and expenditures and in formulating the value proposition to the organization. The function provides the strategic directions through a series of documents such as the business plans, the strategic information technology plans, and performance management systems such as the balanced scorecard⁵. This function also ensures the proper alignment of the investments and expenditures to the corporate directions and priorities. It focuses on the high level portfolios (e.g. financial systems, human resource systems, etc.) and highlights the contribution of each portfolio to the overall performance of the organization.

The Governance guidelines applicable to this function include:

- a. Provide strategic framework to the acquirer and supplier organizations (Guideline 5);
- b. Address strategic issues emerging from IT investments and expenditures (Guideline 6); and
- c. Assess the strategic framework applied for IT investments and expenditures (Guideline 7).

The following paragraphs detail each guideline applicable to this function.

⁵ Will add reference for Norton and Kaplan's scorecard.

Guideline 5:

Provide the strategic framework to the acquirer and supplier organizations.

	Select	Implement	Evaluate
Policy			
Leadership			
Decision			
Oversight			

Governance must provide the strategic framework within which investments and expenditures are selected and decisions are made. Within the context of IT investments, this framework is typically provided in the departmental Business Plan and Strategic Information Technology Plan (SITP). Within the context of IT expenditures, this framework is typically provided by the regular updates to the SITP and the business priorities identified at the beginning of each budgeting exercise. This function is normally performed by the corporate governance and enforced by the direct governance individuals.

Many models of these plans exist, nevertheless, key criteria to be addressed by governance in this guideline include:

- a. **Criteria 1.** Governance must clearly articulate the directions and goals of the organization in order to provide a focus for IT investments and expenditures as well as a framework to ensure strategic alignment of IT portfolios with the corporate directions. This framework also provides the foundation for the selection process for investment opportunities and the prioritizing process for expenditures. Specific guidance regarding this criteria can be found in <<Will refer to strategic planning bodies of knowledge. State body of knowledge here>>.
- b. **Criteria 2.** Governance must identify IT investment and expenditure priorities within the context of the organization's strategic objectives as part of the SITP and its regular updates. These priorities are normally established as a result of a gap analysis between the current situation and the desired situation regarding IT as well as an analysis of the value propositions. Specific guidance regarding this criteria can be found in <<GGF to provide references on approving business cases as well as support of the BDP process. State additional body of knowledge here>>.
- c. **Criteria 3.** Governance must ensure that each investment's and expenditure's value proposition is clearly documented and used in the selection process. Currently, TBS is recommending the use of its published guide entitled "Justifying IT investments ..." for IT investments.
- d. **Criteria 4.** Governance must ensure that the investment and expenditure proposals available are within industry and departmental performance ranges. This criteria is

fundamental to making a final decision as it establishes the credibility of the proposals against best and worst performers within the industry and past departmental performances. Industry ranges can be obtained through databases such as the ISBSG. Details regarding the ISBSG database are provided in Appendix X.

- e. **Criteria 5.** Governance must also provide the corporate justification for IT expenditures. Based on the assessment of expenditure performance and the evaluation of the lessons learned, governance should be able to align improvement needs with those needs of the organization to deliver services faster, cheaper and better. The mix of improvements with other expenditures such as provision for corrections and user support should be determined for each applications in a portfolio based on the value for the supported business.

This guideline is equally applicable to the maintenance and development activities.

Guideline 6:

Address strategic issues emerging from IT investments and expenditures.

	Select	Implement	Evaluate
Policy			
Leadership			
Decision			
Oversight			

Governance must address, in a timely fashion, strategic issues emerging from the execution of the investment and expenditure plans. Specifically, it must be prepared to assess, amend, replace or eliminate elements of the existing strategic framework in order to ensure that expected benefits are realized. It must be prepared to execute the proper trade-offs in order to balance the benefits of one investment or expenditure and the collective benefits of the entire portfolio. Governance must ensure that the investments and expenditures are proceeding as planned against the strategic directions of the organization. At this level, governance may use a “corporate dashboard” to monitor the investments and the expenditures. This function is normally performed by the corporate governance and enforced by the direct governance individuals. Key criteria to be addressed by governance in this guideline include:

- a. **Criteria 1.** Governance must establish the proper communication channels to allow individual investments and expenditures strategic issues to be raised. These channels will typically consist of extensions to the problem reporting and resolution processes or escalation procedures found within the individual initiatives. Specific guidance regarding this criteria can be found in <<State body of knowledge here. If any?>>.
- b. **Criteria 2.** Governance must develop and communicate its corporate dashboard for IT investments and expenditures. These types of performance measurement tools, at the governance level, are numerous and include Dr. Rubbin’s dashboard and the balanced scorecard referred to earlier <<GGF will provide references>>. Specific guidance regarding this criteria can be found in <<State body of knowledge here. If any?>>.
- c. **Criteria 3.** Governance must identify the people best able to support the need to assess, amend, replace or eliminate elements of the existing strategic framework as a result of issues emerging from individual investments or expenditures. Specific guidance regarding this criteria can be found in <<State body of knowledge here. If any?>>.
- d. **Criteria 4.** Governance must establish clear trade-off guidelines in order to balance the requirements of individual investments or expenditures with the remaining of the portfolio. Specific guidance regarding this criteria can be found in <<State body of knowledge here. If any?>>.

This guideline is equally applicable to the maintenance and development activities.

Guideline 7:			
Assess the strategic framework.			
	Select	Implement	Evaluate
Policy			
Leadership			
Decision			
Oversight			

Governance must determine how well the strategic framework helped the investment and expenditures meet their objectives. It must identify barriers imposed by the strategic framework and opportunities it provided. Governance must then take the appropriate actions based on the results of this assessment and similar assessments made on other projects. This function should be performed jointly by the corporate and direct governance but is rarely done in organizations. Key criteria to be addressed by governance in this guideline include:

- a. **Criteria 1.** Governance must, as part of an operation review, determine how well the strategic framework helped the investment or expenditure meet their objectives. It must identify barriers imposed by the strategic framework and opportunities it provided. Specific guidance regarding this criteria can be found in <<**State body of knowledge here. If any?>>**
- b. **Criteria 2.** Governance must document and communicate the results of the assessment with the resulting actions taken to the accountable individuals who will be involved in the next stage of the investment or expenditure and who will have to select where to allocate resources. Specific guidance regarding this criteria can be found in <<**State body of knowledge here. If any?>>**
- c. **Criteria 3.** Governance should examine the practices that led to the results and determine which ones should be improved or eliminated. Several methods are available to perform this task including the Internal Process Improvement method <<**GGF will provide reference>>** and others identified in Appendix Y. A government practice benchmark is also available in a TBS publication <<**GGF will provide reference>>**. Other specific guidance regarding this criteria can be found in <<**State body of knowledge here. If any?>>**.

It is important at this stage to remind again the reader that guidelines 5, 6 and 7 should be implemented in every functions of the investment or expenditure as identified in section 1.2. As stated, this would allow timely and structured operation.

5 Decision-Making

The decision-making function, which must be performed by the governance, is at the core of governance. It is used to mobilize the resources and implement the decisions made regarding investments or expenditure to pursue. It also makes the final decision on the “how” of investments and expenditures. It approves the final plans and approaches to deliver the benefits. As the prime source of decision for individuals implementing investments or expenditures, governance must be integrated into the life cycles and live with the constraints they imposed on their delivery teams.

The Governance guidelines applicable to this function include:

- a. Mobilize resources against available investment and expenditure opportunities (Guideline 8);
- b. Decide whether to cancel, modify, continue, or accelerate investments and expenditures (Guideline 9); and
- c. Determine the future directions of the IT investment and expenditure (Guideline 10).

The following paragraphs detail each guideline applicable to this function.

Guideline 8:

Mobilize resources against investment and expenditure plans.

	Select	Implement	Evaluate
Policy			
Leadership			
Decision			
Oversight			

Governance must make the final decision regarding the mobilization of resources against investment and expenditure plans. This decision process should include all stakeholders identified in the governance structure. The decision is normally based on the criteria identified in the policy framework and bounded by the annual planning process mandatory within the government. The use of the various committees established as part of the governance structure will likely increase during this process in order to establish cross-functional priorities. Clearly established conflict resolutions procedures should be documented by the governance structure in order to ensure timely decisions are made and communicated to the organizations tasked to execute the priorities. Key criteria to be addressed by governance in this guideline include:

- a. **Criteria 1.** Governance must synchronize the departmental planning and budgeting processes in order to reflect the IT investment and expenditure resource requirements into the organizations overall budgets. Planning and budgeting gates should be explicitly documented and integrated into the decision making process. Specific guidance regarding this criteria can be found in <<**TBS to provide internal references. State body of knowledge here. If any?>>**>.
- b. **Criteria 2.** Governance must have all the required information to make the appropriate decision including: Clearly identified sponsorship, clear business alignment, clear identification of the benefits (qualitative and quantitative), detailed cost/benefit analysis, detailed alternative and sensitivity analyses, clearly identified and estimated risks. Knowledge of the outcome is also essential. Key product characteristics including nature, size and complexity should be obtained. Mobilization of resources can then take place with full knowledge of the parameters that may impact the implementation of the investment or expenditure. Specific guidance regarding this criteria can be found in Appendix Z <<**references to PMI BOK, ISBSG, etc... State other body of knowledge here. If any?>>**>.
- c. **Criteria 3.** Governance must roll up investment and expenditure proposals along the lines of portfolios in order to assess the distribution of IT resources and determine the correlation between the areas of investment and expenditure and the priorities and core businesses of the department (Top-down, bottom-up approach). This criteria also aims at ensuring an adequate allocation of departmental resources to the various functional areas of the organization. Specific guidance regarding this criteria can be found in <<**State body of knowledge here. If any?>>**>.

- d. **Criteria 4.** Governance must ensure that the investment and expenditure are consistent with the maturity level of the organization. This criteria is also fundamental to making a final decision regarding the mobilization of resources. This criteria calls for organizational risks awareness throughout the project management function. Specific guidance regarding this criteria can be found in the Software Engineering Institute's Capability Maturity Models (CMM). CMM Based Appraisal - Internal Process Improvement technique can also be used to make this determination. Details of these models and techniques can be found in Appendix X.
- e. **Criteria 5.** Governance must obtain all the required approvals and conduct the required reviews to formalize the decision and ensure its compliance to TBS and departmental guidelines on approving and committing funds.
- f. **Criteria 6.** Governance must formalize the decisions made regarding IT investments and expenditures in order to clearly document the expectations of the acquirer and supplier organizations as well as their respective roles and responsibilities vis-à-vis the realization of the expected benefits. This agreement can take various forms including a contractual arrangement, a memorandum of understanding, and a Project Charter. Specific guidance regarding these vehicles can be found in Appendix X.

This guideline is equally applicable to the maintenance and development activities.

Guideline 9:

Decide whether to continue, modify, accelerate, or cancel investments and expenditures.

	Select	Implement	Evaluate
Policy			
Leadership			
Decision			
Oversight			

Governance must exercise its duty to make decisions in support of investment and expenditure plans implementations in two ways:

- a. In an ad hoc fashion to support the unexpected decision requirements; and
- b. at pre-determined points or gates.

These decisions must be made with the policy and standard as well as the strategic frameworks in mind. They must be timely and should reflect the information provided by the individuals planning and controlling the investments or the expenditures on a day-to-day basis. The direct governance normally performs this guideline. Key criteria to be addressed by governance in this guideline include:

- a. **Criteria 1.** Each investment or expenditure should have clearly identified review points at which governance people must make the decision to continue, modify, accelerate or cancel it. These reviews should include as a minimum interim deliverables, process related issues that have arisen, technical issues and problems, schedule and cost variances, the business alignment, and the likelihood of realizing the expected benefits and the risks associated with the investments or the expenditure. A review of the business case should also be conducted as part of these planned reviews. Reviews performed during a given stage must address all the areas mentioned above. Reviews conducted as part of the evaluation phase of the decision model identified in section 1.2 are even more formal and likely involve both level of governance whereas those discussed herein normally involve the direct governance and the project individuals. Specific guidance regarding this criteria can be found in <<**State body of knowledge here. If any?>>.**
- b. **Criteria 2.** Governance should consider augmenting its ability to conduct these reviews through the use of Quality Assurance, Independent Verification and Validation agents, and Auditors. Specific guidance regarding this criteria can be found in <<**State body of knowledge here. If any?>>.**
- c. **Criteria 3.** Governance must document and communicate its decisions in order to ensure that there is a broad understanding of the direction chosen and that all stakeholders are working towards a common, and agreed upon, objective. Documenting decisions will also provide an audit trail during the evaluation phase.

Specific guidance regarding this criteria can be found in <<**State body of knowledge here. If any?**>>.

- d. **Criteria 4.** Governance should document its process of making decisions in order to ensure consistency and repeatability. The process should also stipulate what investment or expenditure data and information must be submitted to governance individuals. The process should also clearly identify the members of the governance structure that are involved in the review process as well as who is ultimately accountable to make the decision. Specific guidance regarding this criteria can be found in <<**State body of knowledge here. If any?**>>.
- e. **Criteria 5.** Governance should ensure that decisions are signed off by all organizations involved in the governance structure and impacted by the investment or the expenditure.
- f. **Criteria 6.** Direct governance must escalate issues that are beyond its decision authority to corporate governance. Guidance in escalating issues can be obtained from the policy framework defined by the corporate governance.

This guideline is equally applicable to the maintenance and development activities.

Guideline 10:

Determine adjustments for directions of the IT investments and expenditures.

	Select	Implement	Evaluate
Policy			
Leadership			
Decision			
Oversight			

Governance must assess the investments and expenditures in terms of their compliance to the plan and determine their future. This constitutes the gating process that ensures that only sound investments or expenditures that will benefit to the organization will proceed. Key questions to be answered include (1) does the current investment or expenditure meet organizational needs, (2) should the organization invest more resources to modify/evolve the work products, (3) is a new investment or expenditure needed to best meet the needs of the organization, or (4) should the investment or expenditure be re-directed towards alternative solutions such as outsourcing or alternate service delivery. Key criteria to be addressed by governance in this guideline include:

- a. **Criteria 1.** Governance must, as a result of the Production Review, have answers to the following questions in order to apply appropriate governance (1) how effective was the investment or the expenditure, (2) Were the initial assumptions justifying the investment or expenditure valid, (3) what is the current status of the investment or expenditure, are changes required. Specific guidance regarding this criteria can be found in <<State body of knowledge here. If any?>>.
- b. **Criteria 2.** Governance must document and communicate the results of the assessment with the resulting actions taken to the individuals who will be involved in the next stage of the investment or expenditure and who will have to select where to allocate resources. Lessons learned should be documented. Specific guidance regarding this criteria can be found in <<State body of knowledge here. If any?>>
- d. **Criteria 3.** Governance should examine the practices that led to the results and determine which ones should be improved or eliminated. Several methods are available to perform this task including the SEI's Capability Maturity Model Based Appraisal - Internal Process Improvement method <<will provide reference>> and others provided in Appendix Y. A government practice benchmark is also available in a TBS publication <<will provide the reference>>. Other specific guidance regarding this criteria can be found in <<State body of knowledge here. If any?>>.

6 Oversight

The oversight, which must be performed by the governance, is at the interface point between governance and planning and control. It is used to oversee the activities of the investments or expenditures and to convert the data into governance information. It can be seen as governance intrusion into the investments and expenditures. It is key to improving investment's and expenditure's success.

The Governance guidelines applicable to this function include:

- a. Determine whether investment and expenditure proposals followed sound selection and planning processes (Guideline 11);
- b. Identify variances to investment and expenditure plans early (Guideline 12); and
- c. Revise the selection and control phases based on lessons learned (Guideline 13).

The following paragraphs detail each guideline applicable to this function.

Guideline 11:

Determine whether investment and expenditure proposals followed sound selection and planning processes.

	Select	Implement	Evaluate
Policy			
Leadership			
Decision			
Oversight			

Governance must play an active role in the selection process. It is the governance's responsibility to ensure that the proper process to develop the investment or expenditure proposals has been followed and that the sources of information used to quantify cost, benefits and risks are valid. Similarly, governance must ensure that the planning process used to identify, allocate, cost and phase resources was sound and in agreement with generally accepted practices. Key criteria to be addressed by governance in this guideline include:

- a. **Criteria 1.** Governance must actively monitor the progress of the investment or expenditure proposals and highlight potential deviations to policies, standard processes or generally accepted processes. Whereas monitoring is a generally understood process, specific guidance regarding the generally accepted planning practices can be found in <<**State body of knowledge here. If any?**>>.
- b. **Criteria 2.** Governance must provide some validation of the proposals as they are rolled up to the higher levels of decision making and governance. The validation should include as a minimum: reviewing the assumptions, assessing the alternatives that were analyzed, reviewing the cost and benefit estimates, evaluating the risks identified, and evaluating the sensitivity of the analyses. Specific guidance regarding this criteria can be found in the TBS published guide entitled "Justifying IT investments ...". This guide can be found on the TBS web site (include URL here).
- c. **Criteria 3.** Governance must provide some validation of the plans as they are rolled up to the higher levels of decision making and governance. The validation should include as a minimum: reviewing the assumptions, the work breakdown structures, the resource allocation matrices, the network logic schedules, and the validity of the plans given the constraints of the organization. Specific guidance regarding this criteria can be found in the PMI...<< **GGF will add the references**>>
- d. **Criteria 4.** Governance must report to the appropriate individuals and committees in the governance structure charged with selecting IT investment or expenditure irregularities in the processes used to develop the proposals. Governance must also identify those proposals that qualified for the exception policies established early in this phase. Finally, governance must, based on the performance on the criteria above establish the required governance and oversight to be applied to the project

including potential gates. Specific guidance regarding the gating process within the federal government can be found in Appendix X.

This guideline is equally applicable to the maintenance and development activities.

Guideline 12:

Identify variances to plans early.

	Select	Implement	Evaluate
Policy			
Leadership			
Decision			
Oversight			

Governance must play an active role in identifying variances to plans. Governance must identify the data it requires to perform this guideline and leverage existing processes within investments or expenditure to obtain it. Process areas such as quality assurance, configuration management, project tracking and oversight, requirements management, and others are good candidate. Governance's roles are to identify to the owners of these processes the data it needs to perform its oversight function. Investment and expenditure work products, records of decisions, and cost/schedule information are typical examples of information required by governance. Variances should address all aspects of the investments or expenditures including: Product, process and people. The direct governance individuals normally perform this function. Key criteria to be addressed by governance in this guideline include:

- a. **Criteria 1.** Governance must familiarize themselves with the engineering and management processes used to deliver the desired outcomes. They must identify the interim work products as well as their characteristics and determine whether the work products delivered fit within these characteristics. Again, as mentioned above, governance can and should use the investment and expenditure level processes to provide the information. Specific guidance regarding this criteria can be found in <<**State body of knowledge here. If any?>>**>.
- b. **Criteria 2.** Governance must familiarize themselves with the cost schedule control processes used to track the progress of the investments or expenditure. They must identify the baseline and be able to identify cost and schedule variances early in the process. Again, as mentioned above, governance can and should use the investment or expenditure level processes to provide the information. Specific guidance regarding this criteria can be found in <<**State body of knowledge here. If any?>>**>.
- c. **Criteria 3.** Governance must establish the proper communication channels to allow variance data to be raised at the governance level. These channels will typically consist of extensions to the project tracking and oversight, requirements management, quality assurance, configuration management processes. Specific guidance regarding this criteria can be found in <<**State body of knowledge here. If any?>>**>.

This guideline is equally applicable to the maintenance and development activities.

Guideline 13:

Revise the selection and control phases based on lessons learned.

	Select	Implement	Evaluate
Policy			
Leadership			
Decision			
Oversight			

Governance must continuously improve its performance when investing or spending in IT. As a result it must revise the function it performs based on the lessons learned on specific investments or expenditures. Possible actions may include:

- a. changing the governance structure;
- b. changing decision criteria;
- c. changing the measures used to control the investments or expenditures;
- d. changing the review/gate schedules;
- e. modifying the early indicators during oversight as well as thresholds; and
- f. modifying the Production review process.

Again this evaluation must address all aspects of the investments or expenditure including: Product, process, and people. This function is normally performed jointly by the corporate and direct governance. Key criteria to be addressed by governance in this guideline include:

- a. **Criteria 1.** Governance must, as a result of the Production Review, have answers to the following questions in order to apply appropriate governance (1) how effective was the decision model, (2) Were the processes adequate, (3) what is the current status of the processes, (4) are changes required. Then governance must make the decisions highlighted at the beginning of this guideline. Specific guidance regarding this criteria can be found in <<**State body of knowledge here. If any?**>>.

This guideline is equally applicable to the maintenance and development activities.

7 Governance Information

Several tools are available to support the governance process. One of the most obvious and essential tools is information and more precisely performance information regarding the industry and organizational lessons learned. The following table provides some types of information available to individuals implementing governance.

Guideline 14:
Governance is based on key measures and facts.

Governance key measures and their organization to be inspired by ISBSG "Venturi Corporate – Requirements specification", January 1998.

8 Concluding Remarks

<<To be completed at the end>>

8.1 Recommendations

8.2 Next Steps

8.3 Conclusion

Appendices

The appendices will provide “how to” information for the guidelines above.