IT Governance — An Integrated Framework and Roadmap: How to Plan, Deploy and Sustain for Competitive Advantage

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**Executive Summary**

“Firms with superior IT governance had 20% higher profits than firms with poor governance given the same strategic objectives.”

*Dr. Peter Weil, Director of the Center for Information Research, MIT (Based on a study of 250 enterprises in 23 countries - C.2)*

“IT Governance is the responsibility of the Board of Directors and executive management. It is an integral part of enterprise governance and consists of leadership and organizational structures and processes that ensure that the organization’s IT sustains and extends the organization strategies and objectives.”

*IT Governance Institute Board Briefing, 2003 (C.5)*

The issues, opportunities and challenges of effectively governing an organization’s Information Technology (IT) demands, investments and resources has become a major concern of the Board and executive management in enterprises on a global basis. A rapidly growing number of organizations have become increasingly dependent on a broad array of technologies to manage and grow their businesses. IT is an integral part of most organizations today and will certainly become more critical in the future. Therefore, IT governance must be an integral part of enterprise governance.

IT governance represents a journey (not an end state in itself), which focuses on sustaining value and confidence across the business. Today, many companies start on a narrow path or shot gun approach and focus on the compliance component (e.g. Sarbanes-Oxley) of IT governance, without developing a balanced approach consisting of both a top down framework and roadmap together with bottom up implementation to address the broad range of IT governance issues and opportunities in a planned, coordinated, prioritized and cost effective manner.

While there is no single right way for organizations to approach improvements in IT governance, this paper proposes a comprehensive and integrated IT governance framework and roadmap which identifies the appropriate current and emerging best practice methodologies for each of the major IT Governance components that must be addressed in any approach. The framework can serve as a guideline for any organization to tailor an approach to its environment, strategies, priorities, capabilities and available resources. Thus, a balanced approach consisting of both a top down framework and roadmap together with bottom up implementation is essential. In addition, effective IT Governance is built on several critical foundations — leadership, organization and decision rights; flexible and scalable processes and the use of enabling technology solutions.

The role technology solutions play in building an effective IT governance framework will also be discussed in the paper. Since IT governance is a journey, and represents a continuous series of process improvements, this paper will discuss how technology solutions, when used appropriately can deliver greater IT governance effectiveness and efficiency. In particular, we’ll look at how technology solutions can help: speed up the decision making processes, improve the quality of IT services and streamline the technical and financial stewardship of IT assets, resources and project portfolios.

The findings and implications of the research are based on extensive primary and secondary research (see references) and are grounded in a review of current and emerging industry and government best practices and select case studies of leading private and public organizations.

**IT Governance Definition, Purpose and Benefits**

Governance is a collection of management, planning and performance reporting and review processes with associated decision rights, which establish controls and performance metrics over key investments, operational and delivery services and new or change authorizations and compliance with regulations, laws and organizational policies. It formalizes and clarifies oversight, accountability and decision rights. (C.2, C.5)

**The purpose of IT Governance is to:**

- Align IT investments and priorities more closely with the business.
- Manage, evaluate, prioritize, fund, measure and monitor requests for IT services and the resulting work and deliverables, in a more consistent and repeatable manner that optimizes returns to the business.
- Manage the responsible utilization of resources and assets.
- Ensure that IT delivers on its plans, budgets and commitments.
- Establish and clarify accountability and decision rights (clearly define roles and authority).
- Manage risks, change and contingency proactively.
- Improve IT organizational performance, compliance, maturity and staff development.
- Improve customer service and overall responsiveness.

In reviewing the relevant literature and current practices, a growing number of IT governance frameworks have been
developed to help organizations deal with the various components of IT governance, including CobiT® (C.9 and C.10), PMMM (B.6), PMBOK (B.2), ITIL (D.1, D.2 and D.6), CMMI (B.3 and B.5), Prince2 (B.7) ISO 9000, ISO 17799, Balanced Scorecard (A.5, C.3, C.7 and C.8) and others. All of these frameworks represent guidelines and tools. In addition to these tools, which focus primarily on process improvements, other critical components necessary for effective governance include strong leadership, an empowered and motivated workforce, a shared vision and value proposition that is marketable, beneficial and measurable and enabling processes and technologies.

A key challenge faced by organizations is: How much IT governance is required and when is enough, enough? This very much depends on a number of the following factors:

- Investment $ in IT (new applications, technology refresh, keeping the lights on).
- Degree of business dependency on technology.
- Strategic corporate value proposition and alternatives for focus of the organization (e.g. growth-centric [segments into customer-centric and product/service (innovation)-centric], cost-centric and/or technology centric).
- Management philosophy and policies (e.g. first mover versus follower).
- Complexity, size and duration of initiatives.
- Scope — enterprise wide versus a subset of the enterprise; number of locations; domestic versus International.
- Number of interfaces and integration requirements with business and/or other systems (e.g. ERP systems).
- Degree of risk.
- Customer and/or sponsor requirements, involvement and desired visibility.
- Regulatory, control and documentation compliance.
- Level of security required.
- Degree of accountability required and desired.
- Audit and control requirements.

Effective IT governance is critical for business success and provides the following benefits:

- Formalizes IT oversight and accountability to ensure more effective and ethical management.
- Improves planning, integration, communications and performance between the Business Units and IT Groups and within IT Groups (across silos).
- Improves ROI based demand management (IT requests and Total Cost of Ownership) decisions to analyze, prioritize, fund, approve and manage major IT investments (capital and operating expenses).
- Improves overall profitability (C.2).
- Formalizes the selection, contract administration and management of vendor/outsourcing initiatives.
- Optimize assets and human capital resources.
- Advances organizational effectiveness and maturity.
- Facilitates compliance and audits (e.g. SOX, FDA, HIPPA, etc.) by documenting processes, controls and decision authority.
The Role of the CEO

The role of the CEO and the executive management team in achieving business growth, improving profitability and creating an effective governance environment is complex and requires a balance between achieving sustainable growth, increased profitability and optimizing organizational effectiveness. Figure 1 identifies many of the components and key attributes essential for successful and profitable growth and links the role of the CEO to effective execution of business strategy. Some of the critical success enablers include: strong leadership and motivational skills, scalable business processes, pragmatic and realistic balanced scorecard metrics and controls and the use of enabling technologies (A.1, A.5, A.6 & A.7).

As Michael Cinema, President and CEO of Etienne Aligner Group stated, “The Board of Directors is well aware of its role to oversee the company’s organizational strategies, structures, systems, staff, performance and standards. As President, it is my responsibility to ensure that they extend that oversight to the Company’s IT as well, and with our growing reliance on IT for competitive advantage, we simply cannot afford to apply to our IT anything less than the level of commitment we apply to overall governance.”(C.5)

The Critical Pillars of Effective IT Governance

Effective IT Governance is built on three critical pillars. These pillars include: leadership, organization and decision rights, flexible and scalable processes and the use of enabling technology (A.8, C.2, C.5, and C.12):

- **Leadership, Organization and Decision Rights.** Defines the organization structure, roles and responsibilities, decision rights (decision influencers and makers), a shared vision and interface/integration touch points:
  - Roles and responsibilities are well defined with respect to each of the IT governance components and processes, including the steering and review hierarchies for investment authorizations, resolution of issues and formal periodic reviews.
  - Clear hand-off and interface agreements/contracts exist for internal and external work and deliverables.
  - Motivated leaders and change agents with the right talent competencies, attitude and bench strength.

- **Flexible and Scalable Processes.** The IT governance model places heavy emphasis on the importance of process implementation and improvement:
- Processes are well defined, documented, measured and continuously improved.

- Processes define interfaces between organizations and ensure that workflow spans boundaries or silos (organization, vendors, geography and technology) effectively.

- Processes should be flexible, scalable and consistently applied, with common sense.

- **Enabling Technology.** Leverage leading tools and technologies that support the major IT governance components:

- Processes are supported by information requirements that support the IT imperatives and components (e.g. planning and budgeting, portfolio investment management, project management, risk and change management, IT service management and delivery, financial, asset and performance management and scorecards, etc.).

- Tools provide governance, communications and effectiveness metrics to facilitate decision support.

As an integral part of the leadership and organization pillar, Peter Weill and Jeane Ross (C.2) further describe how top performing companies manage IT decision rights for superior results. Most top performing companies also have established multi-level and multi-disciplinary business/IT steering and governance boards with clear roles and responsibilities to ensure appropriate commitment, sponsorship, escalation and visibility of the Board, Executive Management and other constituents.

### Integrated IT Governance Framework and Roadmap

Figure 2 illustrates a high level IT Governance framework and roadmap that identifies the major components (imperatives) of governance (e.g. strategic and tactical planning — business and IT); demand management (e.g. portfolio and investment selection and prioritization); execution management (e.g. program/project management, process management, resource management, service management, etc.).

<table>
<thead>
<tr>
<th>AREAS OF WORK</th>
<th>DESCRIPTION/COMPONENTS</th>
<th>DELIVERABLES/REFERENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Plan/ Objectives (Demand Management and Alignment)</td>
<td>• Strategic Business Plan — Vision, Objectives, Financials, Operations, SWOT, Imperatives (Must Do’s), Initiatives (Alternatives that Support Imperatives), etc. • Investment Rationalization and Justification — Capital Planning/Expense Planning and Budgeting • Business Performance Management (Key Metrics) • Board Oversight; Executive and Other Steering and Review Councils; Organization Structure</td>
<td>• Plan Document • Financials • Balanced Scorecard Metrics • BCG; Porter; Hamel</td>
</tr>
<tr>
<td>IT Plan, Objectives, Portfolio Investment and Approvals (Demand Management and Alignment)</td>
<td>• IT Plan is aligned with the Business Plan — IT Capital/Expense Budget • IT portfolio investment, rationalization, selection, prioritization, funding and approval (Portfolio Management Model (for New, Change Programs and Projects and/or Operational and Infrastructure Functions) • Manage risks and have contingency/disaster recovery plan • IT Performance Management (Define Metrics and Measurement Criteria)</td>
<td>• IT Strategic/Tactical Plan/Metrics • Portfolio Mgt. Model (Investment Criteria); ITIM • Engagement Model — Roles • Business Rules and Authorization • McFarlan, Cash; Luftman; Popper, others</td>
</tr>
<tr>
<td>IT Plan Execution and Delivery (Resource Management, Program/Project Management and Service Management)</td>
<td>• Tactical, Project and Operating Plans (Capital Plans, Project Plans and Budgets) • Policies, Standards, Guidelines and Processes (e.g. Management Control; Enterprise Architecture, Security, PMO, ITIL, etc.) • Processes (PMO, Help Desk, Security, Administrative SOPs, Workflows, Service Mgt., etc.) • Financial, program, project, application, maintenance and operational accountability</td>
<td>• Assess Implications of PMMM, PMBOK, CMMI, ITIL, SDLC, CoBiT, Security (ISO 17799) Frameworks on Company’s Processes • Infrastructure and Operational Integrity and Continuity</td>
</tr>
<tr>
<td>Performance Management, Controls and Vendor Management</td>
<td>• Manage and measure plans, budgets programs, projects, operations • Define and track key performance indicators (KPI) • Compare plans to actuals and take appropriate corrective actions; Change Management • Outsourcing and Vendor Selection, Tracking, Measurement</td>
<td>• Balanced Scorecard and KPIs • Performance Management • RFI, RFQ, RFP and Contract Management • Risk Management</td>
</tr>
<tr>
<td>People Development and Continuous Process Improvement</td>
<td>• Human capital development • Organizational, Project and Operational Maturity Models and Standards • Managing Change and Transformation (e.g. culture, interoperability) • Training and Certification (e.g. Individual and Organization)</td>
<td>• Adopt Current and Emerging Industry and Government Best Practices Standards and Guidelines • PCMM; OMB 300; ISO; ITIM • Career Development and Certification • Center for Creative Leadership</td>
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*Figure 2. Illustrative integrated IT Governance framework and roadmap example.*
management and delivery); performance management, metrics and controls, vendor and outsourcing management, people development and continuous process improvements that must be addressed, resourced, steered, measured and, potentially changed in order for organizations to achieve improved alignment, satisfactory investment returns, and higher levels of customer satisfaction, performance accountability, compliance and maturity. For each IT governance imperative, a description of select key components is provided as well as the key deliverables and references.

The remaining parts of the paper provide a high level overview of select critical components of the IT governance framework. Each of the components has its own body of knowledge. It is beyond the scope of the paper to provide the details for each of these areas. It is the intent of this paper to provide an integrated framework and roadmap, to be used in conjunction with more detailed best practice frameworks in each area, as a guide for organizations to tailor and adopt an approach that will lead to continuous improvements and higher levels of effectiveness and maturity in their respective IT environment.

Business/IT Alignment and Demand Management

Demands for IT services generally come in several flavors — mandatory (must do’s such as service interruptions, standard maintenance, keeping the lights on and/or regulatory compliance) and discretionary (could do’s if aligned, feasible, cost justified, strategic and/or a standard repetitive request). In an ideal world, both mandatory and discretionary requests should be approved by the business/IT leadership in the IT strategic and operating plans or in accordance with an organization’s decision rights and approval authority guidelines. Due to the pace of rapid change, IT needs may be identified outside of the plan and approved budget, which must be addressed sooner than later and should be factored into the alignment, funding and prioritization process. In reality, demands of IT services most often exceed the ability of IT to complete these requests on a timely basis. This may necessitate the need for staff supplementation or outsourcing.

Figure 3. High level flow — from IT/business alignment, portfolio management, PM/SDLC and to steady state operations.
The following considerations will further help align business needs with IT:

- Clearly define and relate the value (e.g. cost reduction, containment and avoidance; increased revenues; faster access to information; shorter time to market etc.) that IT provides in support of the Business.
- Identify value adding activities (e.g. value chain and other business models/attributes) and strategies that would enhance them through IT.
- Focus on listening to the voice of the customer.
- Ensure that all IT initiatives are evaluated using a consistent, but flexible set of investment selection, prioritization and review criteria to assure a strong link to the business plan, project implementation and on-going operations (see Figure 3).
- Develop a strategic IT plan that identifies major initiatives, technical/architecture, operational, organizational, people development and financial objectives and measurements in support of the business.
- Be flexible and make provisions to allow for evaluating and aligning unanticipated, but necessary, requests that were identified outside of the plan.

Figure 4 illustrates an example of mandatory and discretionary IT investment categories and the percent of investments in each category for one organization. These must be driven by business needs and priorities and will vary by organization from year to year based on its strategy.

*Figure 4. Example of mandatory and discretionary IT investment categories and the percent of investments in each category for one organization. These must be driven by business needs and priorities and will vary by organization from year to year based on its strategy.*
Execution Management

Major components which are part of this IT governance category include program and project management, process management, resource management, IT service management and delivery and strategic sourcing and vendor management. Note: Outsourcing has become a major IT strategy for many organizations to reduce costs, focus on core competencies, accelerate time to market and staff augmentation. The scope of strategic sourcing is broad and complex and is beyond the scope of this paper.

Program/Project Management (PM)

In many of the case studies analyzed, organizations continue to struggle with establishing and enforcing a formal program/project management policy and process that is sustainable. Since all programs and projects are not equal in complexity, value, risk and benefits, organizations are increasingly implementing a flexible and scalable Project Management/Systems Development Life Cycle (PM/SDLC) — for example, fast track versus full risk mitigation. In addition, the following factors will facilitate an effective PM culture and environment:

- A formal governance calendar should be published which identifies Steering Counsel meetings, project and operational reviews, required and discretionary phases, tasks, checklists, score cards and status reports (e.g. weekly, bi-weekly, monthly, quarterly).
- Key roles and responsibilities must be formally agreed to upfront and communicated to all of the constituencies in the form of a RACI Matrix (Responsible, Approve, Consult, and Inform).
- Program/project scope, requirements and deliverables (as in a charter) should be approved upfront by the sponsor and monitored throughout the development or procurement, testing, training and implementation phases.
- Consistent program and project metrics should be instituted based on time, cost, resources, quality, risk and customer satisfaction (including earned value, where applicable). There are a number of tools that can help with estimating, resource allocation, level loading and resource utilization.
- The creation of a Program Management Office (PMO) as a center of excellence to develop and maintain PM/SDLC processes, coordinate staff training, development and certification, manage select large projects and facilitate project plan, status reports and reviews.

IT Service Management and Delivery

Well executed IT service management and delivery is about maximizing the ability of IT to provide services that are cost-effective and meet or exceed the needs and expectations of the business: reduce the total cost of operations, improve service quality, improve customer satisfaction and improve compliance. IT service management and delivery concerns itself with minimizing and avoiding business disruptions and assuring the continuity of IT services. Key principles for IT service management and deliver excellence include:

- Streamline service delivery and support processes.
- Develop and document repeatable processes and procedures.
- Reduce number of service incidents and outages.
- Implement standards and guidelines to do things right the first time and reduce defects and rework.
- Perform proactive analysis, prevention and resolution.
- Plan for and ensure future capacity, redundancy, security and disaster prevention and recovery.
- Define clear services, service level targets and costs.
- Accurately allocate and recover costs.
- Audit, manage and improve IT processes.

Key practices for IT service management and delivery excellence include:

Information Technology Infrastructure Library (ITIL)

The ITIL framework provides an effective foundation for higher quality and effective IT service management and delivery. ITIL involves a standardized approach, common processes and terminology and industry supported tools and technologies. Key practices for ITIL excellence include:

- Assure that the organization complies with the evolving ITIL (Information Technology Infrastructure Library) framework and processes to assure more effective and consistent IT Service Management and Delivery (e.g. of the IT Operational and Infrastructure functions).
- The ITIL framework, consisting of twelve processes within the two Service Management areas of Service Support and Service Delivery. Today, a rapidly growing number of organizations have or are in the process of adopting and deploying ITIL such as Bristol-Myers Squibb, KPMG, Lucent, National Westminster Bank, Oracle, Vodafone, Microsoft, Unilever, CA and others.

Operations and Infrastructure Accountability

- All operations (e.g. PBX, Data Center, Help Desk, Servers, Network, etc.) must have a primary secondary owner for backup.
- The overall budget and services for IT Operations and support should be divided into a set of defined solution (IT service catalogue), so that all IT costs can be mapped to specific business services and the solution can be deployed on a routine basis.
- Identify and monitor key operational metrics (e.g. SLAs [Below, Meets, Exceeds], ITIL process metrics and other dashboard metrics).
• Status reports should be produced on a pre-defined basis (e.g. daily, weekly, monthly report cards, other) using a consistent format.
• A formal escalation process, accountability and roles should be established to resolve key operational issues, risks, disruptions, and recovery procedures (E.1, E.2 and E.3).

Performance Management, Risk and Change Management and Management Controls
This section covers the components of performance management, risk and change management and controls.

Performance Management
A performance management plan must be developed for IT. The development of the performance plan should be a collaborative effort between the business and IT. It should be based on a number of objectives such as strategic, financials, quality, operational and service effectiveness which support an organization’s vision, mission, plans, objectives and financials.

The execution of these plans and objectives must be monitored and measured by a combination of balanced scorecard key performance indicators (KPIs) as well as formal and informal status review meetings and reports (e.g. report cards, dashboards). The outcomes should link critical success factors to KPIs that are measurable, part of a standard reporting system and linked to a governance component. If one cannot measure it, it does not count.

Asset Management
As the investments in IT have increased, more attention is being given to manage the IT assets more effectively. This requires a number of functions including resource allocation and utilization, financial and cost management, asset inventory and tracking, configuration management, license management and people management, time and cost reporting and recovery, including chargeback systems. Tools that support asset management should optimize asset usage across the entire lifecycle from procurement to disposal and retirement.

Change Management
Changes in scope, systems, software, hardware, networks and applications are inevitable. Change management impacts most of the IT governance components. In well managed organizations, changes are classified into various categories (major, minor, mandatory, etc.) depending on a number of different attributes (e.g. scope, benefits, costs, need, etc.). A change management policy, process and procedure should be developed for evaluating, funding, approving, tracking and documenting the change from the current to the new baseline. Look for change management tools that manage change across development and operational boundaries, are process-centric and leverage portfolio management to prioritize change activities and funding. In essence, the scope of change management is becoming enterprise wide with the use of consistent, flexible and shared processes.

Risk Management
Risk analysis is the systematic identification of potential areas of uncertainty or concern. In IT, there are many risks such as failed projects, disruption of service, intentional sabotage, poor requirements and inadequate scope definition. These risks could result in costly rework, cost and time overruns, loss of revenues, unhappy customers and unsatisfactory regulatory compliance and controls (e.g. Sarbanes-Oxley, FDA, FCC, and SEC). There are three primary aspects of risk management to be considered: risk identification and analysis, risk quantification and risk response, mitigation and contingency plan development.

Management Controls
Regulatory, audit and management requirements generally determine the level of management and administrative controls a company deploys. As an example, Section 404 of Sarbanes-Oxley focuses on financial controls and requires IT to be able to document and trace a company’s financials (e.g. profit and Loss, Balance Sheet, etc.) back to the systems, software and operational processes and sources of the transactions that comprised the numbers. A company has to demonstrate a documented audit trail to be in compliance and to further demonstrate how an organization plans to sustain that compliance. In addition, the CobiT® framework also provides a guideline for controls suggested for IT. For example CobiT® Control Objective (AI6) specifies the four IT domains and related processes that need to be in place to manage and control IT more effectively (e.g. define a strategic IT plan, define and manage service levels, manage changes, manage projects, etc).
Steps in Making IT Governance Real and Sustainable

The integrated IT governance framework and its components proposed in this paper addresses the objectives previously identified: it fosters strategic and tactical alignment of IT with the business; it relates the investment and cost of IT to the value created for the business; it facilitates the management of risks; it enables a more effective approach to deployment and execution of IT programs and projects and IT service management and delivery through in-sourcing and outsourcing and facilitates compliance. The following prerequisites will help to make IT governance more real and help transition enterprises to a higher level of IT governance maturity and effectiveness:

Prerequisites for Developing and Implementing an Effective IT Governance Program

- The Board and the Executive Leadership Team are committed to implementing and sustaining a robust Governance environment.
- Do Homework — Educate yourself on past, current and emerging best practices.
- Market the IT governance value propositions to the organization and communicate its goals and objectives.
- Develop, adopt, integrate, leverage and tailor current and emerging best practices models, frameworks and standards to make them work for the enterprise — create an integrated IT governance framework and roadmap for your organization.
- Complete an assessment of the “current state” of the level of IT governance maturity and identify gaps. One approach to conduct an IT governance maturity assessment is to use a leading best practice process such as CMMI or equivalent to assess and define current state maturity levels for each IT governance process and function.
- Develop a “future state” IT governance blueprint (where you want to be), always keep it in focus. Develop a plan to transition and transform an organization from its current state to its targeted future state.
- Decompose the IT Governance components into well defined work packages (e.g. Alignment, Portfolio Investment Management, Program/Project Management, ITIL processes, etc.), assign an owner and champion to each component and develop a prioritized roadmap and action plan that concentrates on delivering a series of short term incremental deliverables to facilitate deployment, create visibility and demonstrate progress.
- Sponsor organizational and individual certifications in the IT Governance component areas (e.g. project management, ITIL, outsourcing, information security, quality, etc.).
- Implement a scalable and flexible governance policy and process.
- Utilize technology as on-ramps to facilitate the journey to improved IT governance.

Technology Solutions and “On-Ramps” to Enable and Accelerate IT Governance

Technology provides one of the critical enabling foundations for IT governance. Technology solutions should provide information that supports IT governance functions, work flows, processes and decision support activities (A.10, B.4, C.2, C.6 and C.12). The benefits of using technology based solutions include:

- Accelerated decision support and the resultant savings in time, costs and related resources.
- Improved customer relationship, service and perception by focusing on the right priorities, streamlining the appropriate approval processes and access to more timely and accurate information.
- Better managed and higher quality project, operational and infrastructure deliverables, disciplines and services.

Selecting the correct technology “on-ramp” will depend on many factors and be influenced by conditions and business drivers unique to a particular organization. Many organizations will be primarily focused on reducing costs and improving efficiencies, while others will be more embracing of technology innovation to drive business growth. Consistent, however, across all IT organizations is the need to create a business-aligned strategy that manages and translates business demand into cost effective IT services and measures the results in terms of business value. Managing business demand is critical, since all IT organizations — whatever their cultural and organizational makeup — will be required to demonstrate strong IT Governance principles and practices based upon disciplined decision making when prioritizing a growing number of requests for IT services. There should be consistency in the way the IT organization presents its services to the business and how it delivers and measures the performance of those services. Finally, investment and cost optimization either by optimizing assets, people and projects or via improved process efficiencies is a must-have for any organization today.
The following list, while not intended to be all inclusive, represents key functions and processes that should be accommodated by either an integrated enterprise wide solution or special purpose solutions that support one or more of the IT governance components.

**Service Lifecycle Management**

IT Service Management — should be driven from a lifecycle perspective. That is, IT services should be developed, delivered and optimized to not only meet initial business requirements, but also encourage more desirable behavior in the use of finite IT resources (see Figure 5). Key components include:

- **Demand Management.** Organizations should consider implementing a Service Catalog mechanism, by which users self-select and subscribe to standardized product and service solutions offered by IT. These services may be priced (notional or actual) and leverage workflow and process based integration to automate service activation and fulfillment procedures.

- **Enterprise Change Management.** Comprehensive process-centric change management across operations and software development, including: planning and prioritization, impact assessment, authorizations etc. Change management should be tightly integrated with Release Management to ensure that all aspects of a new or revised release (e.g. hardware, software, documentations, checklists and rollouts) are coordinated and approved by the impacted constituents (e.g. development, operations, client, sponsor, etc.). Change management should also support compliance related initiatives through documentation, secure access, and auditing.

- **Service Level Management.** No service can be a service without building service commitments and managing service levels. Critically, IT needs to provide insight into service level metrics that the business understands and cares about, such as application response time, time to resolve an issue, or assure x number of business transactions processed within a particular time frame. Many service level management implementations fail because IT focuses too much on technology centric measurements specific to individual domains. Increasingly, however, success will be dependent on building and measuring service based contracts. Not only will this encourage more purposeful dialog between IT and the business, but will also encourage the unification of IT practices across the technologies supporting applications and business processes.

- **Incident and Problem Management.** As organizations develop a business focused service level management strategy; integrated technologies enable the automatic recording of service level deviations, optimizing incident and problem procedures. Facets that play a key role here, are Service Desk functions that (acting as a “Front-Office”) facilitate self-help, knowledge sharing and other customer support services, while integrating the “back-office” processes needed to identify the root cause of recurring problems and initiate remedial activities.

- **Service Costing.** The final component of the service lifecycle is service costing. This is about providing financial visibility into the costs of providing IT services. By providing this kind of visibility, organizations can help manage and optimize further business requests and demands placed on IT, as well as facilitating strong governance through more mature cost allocations and chargeback strategies.
Asset Management

As noted in the section on Management Controls, the role of IT Asset Management has become increasingly important as organizations strive for stronger governance, risk mitigation and more effective financial stewardship over increasingly diverse asset investments. Again, strong and mature Asset management involves optimizing technology and financial practices across a lifecycle (from Asset procurement and deployment to retirement and disposal — see Figure 6), building disciplines that encourage optimum usage and facilitate stronger decision making capability. Strong IT Asset Management is a critical component in supporting revenue growth and business enablement projects, since when fully optimized, it can both ensure a reliable technology foundation for new IT-Business services and help free-up the amount of discretionary funding available for strategic growth initiatives. Elements of technology that help deliver this vital capability include:

- **Asset Inventory and Tracking.** There’s an old saying in IT — “You can’t manage what you don’t know”, which today remains extremely relevant. Asset Inventory and tracking enables organizations to automate the process of building comprehensive and accurate inventories of both software and hardware assets. Supplemented by “intelligence” based reporting, such technologies enable IT to institute capability towards more effective strategies for IT Asset consolidation and rationalization to further drive down costs and increase operational efficiencies.

- **Configuration Management.** Once organizations have a comprehensive inventory, the next critical step is ensuring that assets are configured properly and that appropriate updates and security patches can be delivered quickly. Many organizations are moving towards standardizing to a limited number of operating systems, hardware and software versions deployed in their environments in order to better manage risk and reduce ongoing support costs. Configuration management solutions with migration capabilities are an important enabler toward this end.

- **Software License Management.** In the age audits, ensuring software license compliance has never been more important, and it is imperative that organizations have the policies and controls needed to prevent the introduction or use of unlicensed software into the environment. Written policies should be supported with automated capabilities that can reconcile and track what the organization owns against what the organization is actually using. Additionally, the Service Catalog capability discussed above is an effective mechanism to control rogue buying and procurement practices by providing users with a standard list of approved IT assets (both software assets), that may be requisitioned against a pre-approved and negotiated contracts. In addition to supporting and controlling licenses, such capability lowers support costs by ensuring that unsupported assets do not enter the business environment and if they do, they can be identified and removed.

- **Contract and Financial Management.** While an organization can have strong IT asset discovery and tracking functions, it may still make poor business decisions with regards to the procurement and ongoing management of IT assets across the lifecycle. These capabilities should include contract and lease management facilities together with accounting disciplines and reliability metrics that help drive down per-unit costs and increase the effectiveness of the entire asset base.

*Figure 6. Asset management.*
People and Project Management

IT departments never have enough people to support every project requested. So, it comes down to setting priorities and making sure that the right people are assigned to the right projects at the right time. By introducing a formalized people and project management process, backed with supporting technology, IT departments should aim to adopt and tailor select project management and development best practices as illustrated by the Project Management Institute’s “Project Management Body of Knowledge” (PMBOK) (B.2), Prince2 (B.7) and/or the SEI’s Capability Maturity Model Integrated (B.5) These critical processes and functions (see Figure 7) integrate such components as:

- **Resource Management.** In an era of rapid application development or application agility, the optimum allocation of skilled resources becomes increasingly critical. Effective resource management technologies supplement skills inventories with advanced search capabilities, matching people to project requirements. Additional capabilities should include resource capacity planning/forecasting and what-if scenario analysis, to simulate different resource conditions and to effectively plan against resource and skill shortfalls.

- **Project Management.** Solutions should have the flexibility to support any level of project planning. Project Management staffs should be able to develop project plans and schedules based on work breakdown structures, tasks, time and cost estimates and key deliverables. Additional capability should extend to providing pre-defined methodologies to quickly build project plans, critical paths and risk assessments according to proven best practices and repeatable procedures.

- **Time and Cost Accounting.** Enables organizations to report on status and progress made on projects. It also provides insight into how staff members are spending their time, and, if desired, enables IT to allocate and charge other departments for project work. Flexible time and cost accounting records lowest level (activity or tasks) to highest level (project or program), time reporting, budget versus actual by labor or procurement category, etc.

- **Process Management.** Ensures best practices are being followed to maximize staff and project efficiency and ensure compliance. These should include templates and workflows to automate processes, and distribute best practice methodologies. Additionally, collaboration and document management systems can help effectively engage distributed and/or virtual teams.

Increasingly, leading companies are looking beyond basic IT Project Management technologies towards solutions that can address enterprise-wide project management needs. Flexibility here means seamlessly linking IT project management to IT portfolio planning (discussed below), managing new product development or product lifecycles, and even overseeing compliance related projects and other such corporate governance initiatives.

![Figure 7. People and project management.](image-url)
**IT Portfolio Investment Management**

For IT and the business to drive growth, both parties need an effective collaborative framework upon which to approve opportunities, perform analysis, and evaluate IT portfolio investments. If people and project management is about doing “things right”, then IT Portfolio Management involves doing the “right things” — ensuring that the right investment decisions are made for the business based on sound and actionable decision making criteria.

IT Portfolio Management technology facilitates effective IT and Business communication at all stages of a project lifecycle. Before even assessing new projects, effective IT Portfolio Management should enable IT to create a portfolio of existing investments and evaluate these against specific organizational measurement criteria (for example NPV, cost avoidance or revenue enhancement). This approach forms a common platform upon which to assess and evaluate new investments or major enhancements or changes to current systems or infrastructure resources, while immediately exposing gross misalignment, accidental investments, and even “sacred cows”.

At the beginning of new projects, the business and IT representatives (e.g. business relationship managers) may use IT Portfolio Management technology to jointly examine new project requests and ideas. At this stage IT Portfolio Management plays a critical role, empowering IT steering committee representatives with the effective analytical capability needed to correctly assess the expected business value and return on investment for new projects and IT investments. Once IT has scoped out the project, they can utilize technology to provide the business with insight into the level of effort, outcomes and the performance a project can deliver and at what costs. Technology here should also enable stakeholders to examine all in-stream projects, with the ability to re-prioritize projects whenever necessary. Throughout the execution of IT initiatives, IT Portfolio Management should provide updates on progress made and risks that may cause the project to run late or over-budget. At the end of a project, this facility should extend into detailing whether the expected ROI was achieved as well as lessons learned.

Mandatory elements of IT Portfolio Investment Management include:

- **Portfolio Planning Analysis.** Link IT initiatives and track according to strategic/tactical/capital/budget plans.
- **Portfolio Management.** Investment and alignment evaluation criteria (see Figure 3), rankings vis-à-vis alternatives, priorities, approval, tracking, etc.
- **Portfolio What-If Planning.** Enabling portfolio managers to include or exclude investments, change start and end-dates, adjust budgets and re-evaluate priorities.
- **Workflow, Process Management, Tracking and Authorization.** Processes, phases and templates (imbedded and/or custom designed), go/no go gates, etc.
- **Highly Configurable.** The ability to model the IT Portfolio with metrics most appropriate to the business (e.g. ROI, Break-Even, Cost Avoidance, Revenue Return, etc.)
- **Integrated Capability.** Enabling projects to be seamlessly initiated, and incorporating asset and software development costs to be incorporated and thus improving the accuracy of ongoing portfolio assessment and project prioritization.
- **Integrated Dashboards and Scorecards.** Drive better decisions by providing real-time portfolio performance information in personalized views (for example: cost/benefit summary, risk versus reward, ROI versus alignment, balance bubble charts etc.) See Figure 8.
Key Leadership and Managing Change Principles and Practices for Creating and Sustaining a Successful IT Governance Environment

To sustain and continue to make progress on the journey to achieving higher levels of IT maturity, an organization should adopt select principles from managing and accelerating change and transformation, which include the following key elements:

- **Proactively Design and Manage the IT Governance Program.** Requires executive management sponsorship, an executive champion and creating a shared vision that is pragmatic, achievable, marketable, beneficial and measurable. Link goals, objectives and strategies to the vision and performance metrics and evaluations.

- **Mobilize Commitment and Provide the Right Incentives.** There is a strong commitment to the change from key senior managers, professionals and other relevant constituents. They are committed to make it happen, make it work and invest their attention and energy for the benefit of the enterprise as a whole. Create a multi-disciplinary empowered Tiger Team representing all key constituents to collaborate, develop, market and coordinate execution in their respective areas of influence and responsibility.

- **Make Tradeoffs and Choices and Clarify Escalation and Exception Decisions.** IT governance is complex, continuous and requires tradeoffs and choices, which impact resources, costs, priorities, level of detail required, who approves choices, to whom are issues escalated, etc. At the end of the day, a key question that must be answered is, “When is enough, enough?”

- **Making Change Last, Assign Ownership and Accountability.** Change is reinforced, supported, rewarded, communicated (through the Web and Intranet), recognized and championed by owners who are accountable to facilitate the change so that it endures and flourishes throughout the organization.

- **Monitoring Progress, Consistent Processes, Technology and Learning.** Develop/adapt common policies, practices, processes and technologies which are repeatable across the IT Governance landscape and enable (not hinder) progress, learning and best practice benchmarking. Make IT governance an objective in the periodic performance evaluation system of key employees and reward significant and sustainable progress and achievements.

Summary and Implications for the Future

IT is an integral part of most organizations today and will certainly become more important in the future. Therefore IT governance must be an integral part of enterprise governance. There are numerous alternative models and standards for companies to help plan, deploy and manage an IT Governance initiative which focuses on reaching higher levels of IT maturity and effectiveness.

While there is no single right way for organizations to approach improvements in IT governance, this paper proposes a comprehensive and integrated IT governance framework and roadmap which identifies the appropriate current and emerging best practice methodologies for each of the major IT Governance components that must be addressed in any approach and is critical for companies to achieve more effective alignment and management of IT. The framework can serve as a guideline for organizations to select and customize the appropriate approach applicable to their environment, priorities, capabilities and available resources. A balanced approach consisting of both a top down framework and roadmap together with bottom up implementation is essential for success.
Select References

A. Strategic Planning, IT/Business Alignment and Portfolio Investment Management


B. Program/Project Management and Life Cycles


C. Governance, Performance Management and Management Controls


D. IT Service Management and Delivery (including IT Infrastructure Library)


E. Vendor Management and Outsourcing

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Dr. Gad J. Selig, PMP is Managing Partner and founder of GPS Group, Inc., a consulting, research and training firm that focuses on marketing, strategy formulation, new product development/product management, information/network solutions, IT governance, program/project management, outsourcing managing, accelerating change and process innovation issues and opportunities for clients.

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GPS Group encourages and is committed to team innovation and seamless collaboration with other senior alliance partners who complement our core competencies with theirs to create a win-win environment for our clients. Dr. Selig is also a Partner of The CIO Group, which consists of former seasoned CIO’s and senior IT professionals, who provide interim consulting services in strategy, technology and business/technology process improvement. He is also affiliated with TAC (The Advisory Council) as a subject matter expert consultant.

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