

# **IT Governance: An Integrated IT (Information Technology) Framework and Roadmap: Planning, Deploying and Sustaining for Competitive Advantage**

**Dr. Gad J. Selig, PMP**

**Managing Partner, GPS Group, Inc &  
Associate Professor, Management and Technology and  
Director, Center for Business Information Technologies  
University of Bridgeport**

**Cell: 203-521-9664 e-mail: [gjselig@optonline.net](mailto:gjselig@optonline.net)**

**Draft – 5/5/05 – Work-in-Progress**

<b><u>Contents</u></b>	<b><u>Page</u></b>
Abstract	1
Introduction	2
Why Organizations Need an IT Governance Policy and Process	4
Integrated IT Governance Framework	4
Effective IT Governance is Built on Three Critical Pillars	5
Alignment of IT to the Business (Demand Management)	6
Execution and Resource Management	9
Program/Project Management Excellence	9
IT Service Management, Delivery and Infrastructure Excellence (including ITIL)	10
Vendor and Outsourcing Management	11
Performance Management, Risk Management and Management Controls	12
Steps in Making IT Governance Real and Sustainable	13
Summary and Implications for the Future	14
Appendix A – Select Examples of Relevant Reference Models, Frameworks, Regulations and Standards	15
References	17

## **Abstract:**

“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 the oversight to the company’s IT as well. In today’s economy and with our 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.”

Michael Cangemi, President and CEO  
Etiene Aigner Group, Inc.

“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

The issues, opportunities and challenges of effectively governing an organization’s Information Technology (IT) demands and resources has become a major concern of the Board and executive

management in enterprises on a global basis. In this paper, IT governance is defined broadly as a collection of management and performance reporting policies, processes and actions with associated decision rights, which establish plans and controls (including clear roles and responsibilities) over key business and IT investments, programs, projects, service delivery and continuity and compliance with regulations and organizational policies and procedures.

Since a rapidly growing number of organizations have become increasingly dependent on a broad array of technologies to manage and grow their businesses, an integrated and comprehensive approach to the governance of IT and its resources is becoming critical to more effectively align, invest, measure, deploy and sustain the strategic and tactical direction and value proposition of IT in support of the business. The paper presents an integrated approach and suggests a comprehensive IT governance framework and roadmap that is pragmatic and actionable, which addresses the following objectives:

- Align IT with the business to harness opportunities and optimize its investment value
- Responsible utilization of assets and resources
- Ensures that IT delivers on its plans and commitments
- Clearly define the role and touch-points of the board, executive and IT management, the customer and the vendors
- Increase IT productivity, accountability, reliability, audit-ability, compliance, performance, competency and maturity

The findings and implications are based on extensive primary and secondary research (see references) and is grounded in industry and government best practice frameworks, models, standards, select company cases, processes and tools. While there is no single right way for all organizations to approach improvements in IT governance, this paper proposes a comprehensive and integrated IT governance framework which identifies the appropriate best practice models and standards applicable for each of the major IT Governance components that must be addressed in any approach and are critical for companies to achieve more effective business and IT alignment and a higher level of IT maturity.

## **Introduction**

The challenge to effectively govern and manage the growing investment and impact of IT on business is increasingly complex in a business environment that is characterized by rapid changes, more demanding customers, globalization, pressures to reduce and contain costs, business transformation, increased profitability, assure that any capital or expense investments are allocated to the highest business value added activities and manage risks and contingencies prudently.

In reviewing select relevant literature and current practices (see Appendix A), most approaches to IT governance today are narrowly focused on one or at a minimum, a few of the components that should be addressed in a more comprehensive and broader approach. Most organizations have yet to achieve the level (stage) of IT governance, alignment, integration, performance and maturity suggested by current and emerging industry best practice models. 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 factors such as:

- Investment \$ in IT
- Value proposition of investment (new applications, technology refresh, keeping the lights on)
- Management philosophy and policies (e.g. mandatory versus discretionary)
- Strategic value and visibility
- 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 (e.g. SAP)
- Degree of risk
- Customer or sponsor requirements

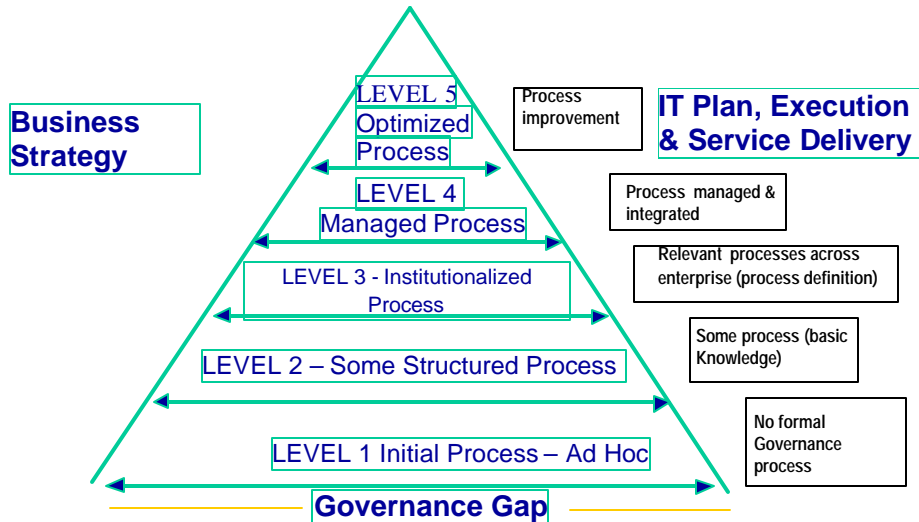
- Regulatory, control and documentation compliance
- Level of security required
- Degree of accountability required and desired
- Audit findings and requirements

In addition to the above factors, IT governance represents a journey (not an end state in itself), which focuses on sustaining value and confidence across the business. At a recent SIM (Society for Information Management) meeting in New York City, Mark Lindig, National Partner in Charge of Information Risk Management for KPMG, suggested that the cost and effort required to achieve a higher maturity level of compliance and governance can be very costly and time consuming depending on what approach companies take. According to Lindig, many companies today start on a narrow path and focus on the compliance component (e.g. SOX) of IT governance, without developing a big picture or more comprehensive roadmap and to address the broad range of IT governance issues and opportunities in a planned, coordinated, prioritized and cost effective manner.

One approach to develop a comprehensive roadmap is to conduct an IT governance maturity assessment using a leading best practice process such as CMMI or equivalent (see Exhibit 1) to assess and define current and target state maturity levels for each IT governance process and function and develop a prioritized roadmap and action plan that concentrates on delivering a series of short term incremental IT governance deliverables to facilitate deployment and sustainability in a more cost effective manner (see Exhibit 2).

*Exhibit 1 - IT Governance Assessment & Maturity Model*

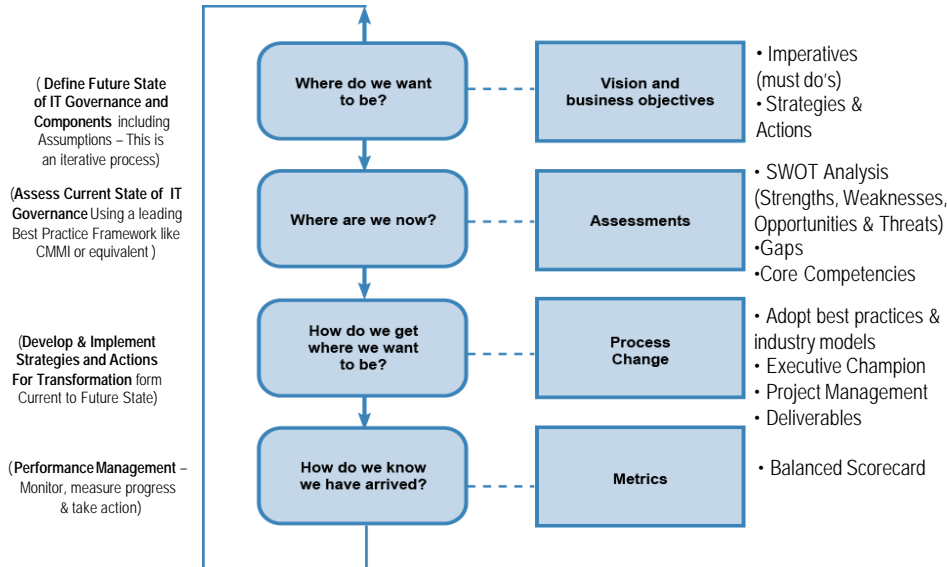
CMMI\* or an equivalent model can be used to assess the level of an enterprise's IT Governance maturity



Source: Modified from Software Engineering Institute's CMMI (Capability Maturity Model Integrated)

*Exhibit 2 - IT Governance Process Improvement Model*

IT Governance Process Improvement Model - In order to develop and/or improve a governance process (business or IT), an organization must address the following questions:



**Why Do Organizations Need an IT Governance Policy and Process?**

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 and approve and manage major IT investments (capital and operating expenses)
- Formalizes the selection, contract administration and management of vendor/outsourcing initiatives
- Optimize assets and human capital resources
- Advances organizational effectiveness and maturity
- Facilitates compliance (e.g. SOX, FDA, HIPPA, etc.) by integrating controls and audits

**Integrated IT Governance Framework**

Exhibit 3 illustrates an integrated IT Governance framework and roadmap that identifies the key components of governance {e.g. planning (strategic and tactical – business and IT); portfolio and investment selection and prioritization; execution and deployment; performance management, metrics and controls, vendor and outsourcing management, risk management and mitigation and continuous process, people and organizational maturity improvements} that must be addressed, resourced, steered, measured and, potentially corrected in order for organizations to achieve improved alignment, investment returns, performance, deployment, accountability, compliance and maturity. For each IT governance imperative, a description of the key components is provided as well as the selected deliverables and references (see Appendix A).

The remaining parts of the paper provide a high level overview of select, but essential components of the IT governance framework. Each of the components has their own body of knowledge (e.g. processes, tools, techniques, standards) and it is beyond the scope of this paper to provide the details for these areas, which are covered in a business and IT leaders and practitioners workshop developed by the author and entitled, “How to Plan, Deploy and Sustain an Effective IT Governance Policy, Process and Environment?” It is the intent of this paper to provide an integrated framework and roadmap as a guide for organizations to customize and select the appropriate approach that will lead to success in their respective environments.

*Exhibit 3 - Integrated IT Governance Framework and Roadmap*

Areas of Work	Description/Components	Deliverables/ References
Business Plan/ Objectives (Demand Management & Alignment)	<ul style="list-style-type: none"> <li>Strategic Business Plan – Vision, Objectives, Financials, Operations, SWOT, Imperatives (Must Do's), Initiatives (Alternatives that Support Imperatives), etc.</li> <li>Capital Planning/Expense Planning &amp; Budgeting</li> <li>Business Performance Management (Key Metrics)</li> <li>Executive and Other Steering &amp; Review Councils: Organization Structure</li> </ul>	<ul style="list-style-type: none"> <li>Plan Document</li> <li>Financials</li> <li>Balanced Scorecard Metrics</li> <li>BCG: Porter; Hamel</li> </ul>
IT Plan, Objectives, Portfolio Investment and Approvals (Demand Management & Alignment)	<ul style="list-style-type: none"> <li>IT Plan is aligned with the Business Plan – IT Capital/Expense Budget</li> <li>IT portfolio investment, rationalization, selection, prioritization, funding and approval (Portfolio Management Model (for New, Change Programs and Projects and/or Operational and Infrastructure Functions)</li> <li>Manage risks and have contingency/disaster recovery plans</li> <li>IT Performance Management (Define Metrics and Measurement Criteria)</li> </ul>	<ul style="list-style-type: none"> <li>IT Strategic/Tactical Plan/Metrics</li> <li>Portfolio Mgt. Model (Investment Criteria); ITIM</li> <li>Engagement Model - Roles</li> <li>Business Rules &amp; Authorization</li> <li>McFarlan, Cash; Luftman; Popper; Selig</li> </ul>
IT Plan Execution & Delivery (Resource Management)	<ul style="list-style-type: none"> <li>Tactical, Project and Operating Plans (Capital Plans, Project Plans and Budgets)</li> <li>Policies, Standards, Guidelines &amp; Processes (e.g. Management Control, Enterprise Architecture, Security, PMO, ITIL, etc.)</li> <li>Processes ( PMO, Help Desk, Security, Administrative SOPs, Workflows, etc.)</li> <li>Financial, program, project, application, maintenance and operational accountability</li> </ul>	<ul style="list-style-type: none"> <li>Implications of PMMM, PMBOK, CMMI, ITIL, SDLC, Cobit, Security Frameworks on Company's Processes</li> <li>Infrastructure &amp; Operational Integrity and Continuity</li> </ul>
Performance Management, Controls and Vendor Management	<ul style="list-style-type: none"> <li>Manage and measure plans, budgets programs, projects, operations</li> <li>Define and track key performance indicators (KPI)</li> <li>Compare plans to actuals and take appropriate corrective actions</li> <li>Outsourcing and Vendor Selection, Tracking, Measurement</li> </ul>	<ul style="list-style-type: none"> <li>Balanced Scorecard</li> <li>Performance Management</li> <li>RFI, RFQ, RFP and Contract Management</li> <li>Risk Management</li> </ul>
People Development & Continuous Process Improvement	<ul style="list-style-type: none"> <li>Human capital development</li> <li>Organizational, Project &amp; Operational Maturity Models and Standards</li> <li>Managing Change and Transformation (e.g. culture, interoperability)</li> <li>Training and Certification (e.g. Individual and Organization)</li> </ul>	<ul style="list-style-type: none"> <li>Adopt Current and Emerging Industry and Government Best Practices Standards &amp; Guidelines</li> <li>PCMM: OMB 300: ISO</li> <li>Career Development and Certification</li> </ul>

Each component in the IT governance framework is enabled by organization, process and technology.

### Effective IT Governance is Built on Three Critical Pillars

The three pillars for effective IT governance are organization and people resources, flexible, scalable and repeatable processes and the use of technology.

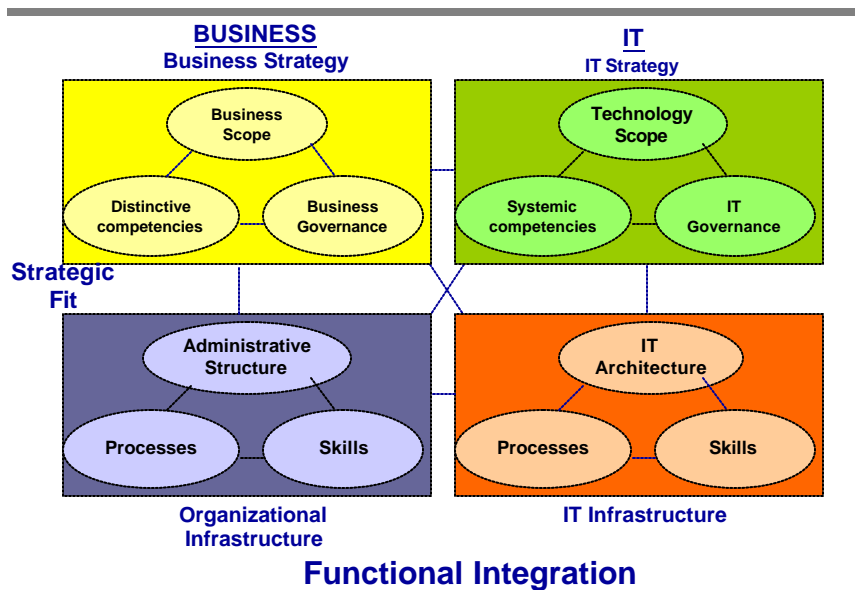
- Organization and People** – defines the organization structure, resources, roles and responsibilities, decision rights (decision influencers and makers) and interface/integration touch points:
  - Roles and responsibilities are well defined with respect to each of the IT governance components and processes, including the steering and review hierarchies for investment authorizations and issue resolution
  - Clear hand-off and interface agreements/contracts exist for internal and external work and deliverables
  - Motivated leaders and change agents with the right skills and competencies
- Process** – the IT governance model places heavy emphasis on the importance of process implementation and improvement:
  - Processes are well defined, documented and measured
  - Processes define interfaces between organizations and ensure that workflow spans boundaries (organization, vendors, geography and technology effectively)
  - Processes should be flexible, scalable and consistently applied, with common sense
- Technology** – leverage leading tools and technologies that support the major IT governance work areas and components:

- Processes are supported by information requirements that support the IT imperatives and components (e.g. planning and budgeting, portfolio management, project management, risk management, IT service management and delivery, IT help desk call center, configuration management, performance scorecards, etc.).
- Tools provide governance, communications and effectiveness metrics for the customer, the vendor and management.

### Alignment of IT to the Business Excellence (Demand Management)

According to Luftman, every business is an information business. Information is the glue that binds value chains and organizations together by aligning IT and business strategy, creating better links to customers and vendors and enhancing corporate-wide processes. Exhibit 4 illustrates Luftman's strategic business/IT alignment model. Strategic alignment should link business strategy imperatives with IT initiatives and services that are measurable (e.g. customer intimacy --- CRM systems --- customer satisfaction). More details on key performance indicators are provided in the performance management section of the paper.

*Exhibit 4 – Strategic Business/IT Alignment Model\**

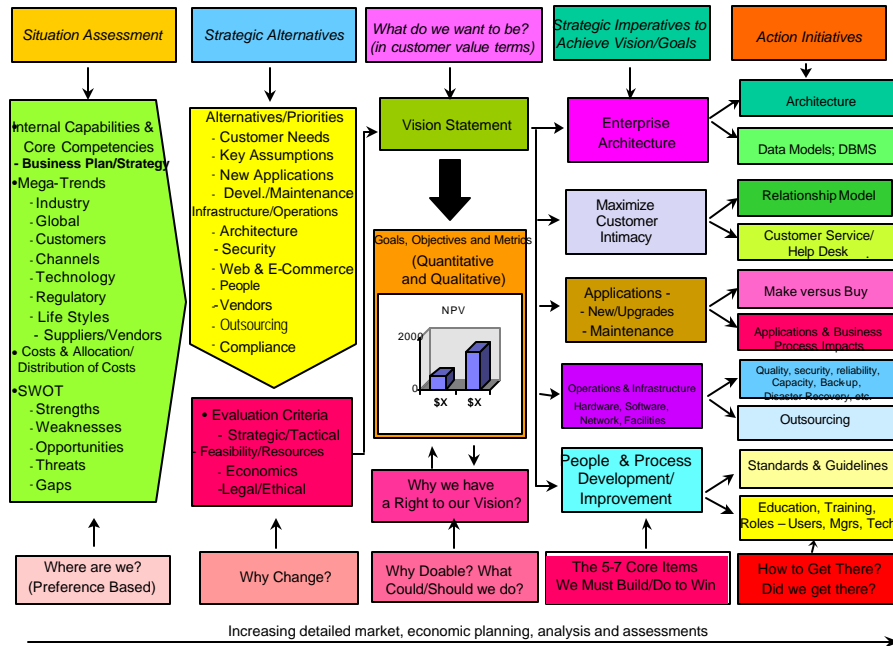


Source: Luftman

The following factors will further facilitate more effective alignment:

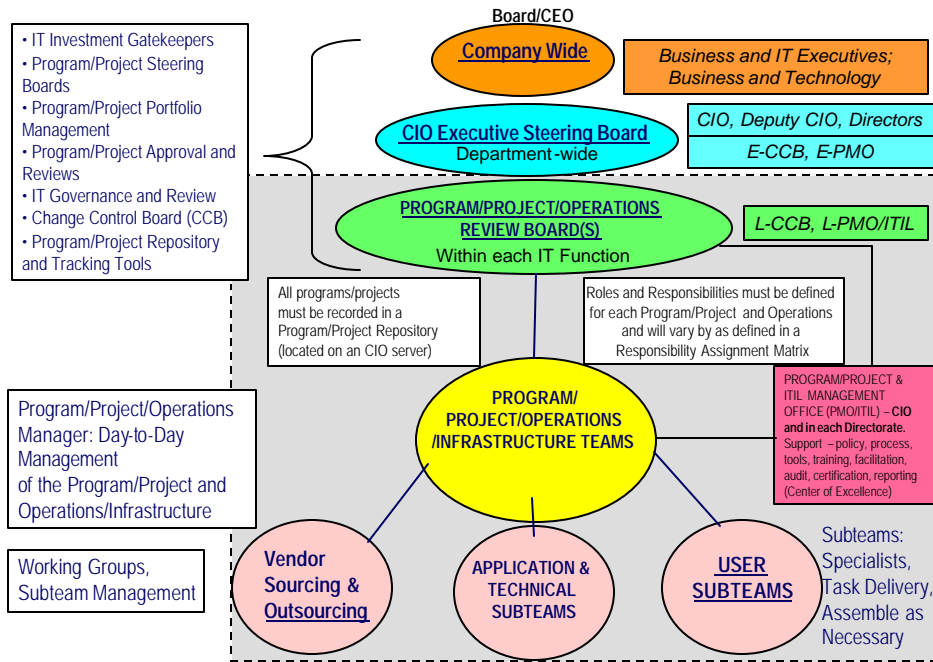
- Clearly define and relate the value (e.g. cost reduction, containment and avoidance; increased revenues; faster access to information; shorter time to market etc.) that IT provides in support of the Business
- Develop a strategic IT plan that identifies major initiatives, technical/architecture, operational, organizational/people and financial objectives and measurements in parallel with the business strategy (see Exhibit 5)

Exhibit 5 - Information Technology Vision and Strategy Plan Framework



- Identify value adding activities (e.g. value chain and other business models/attributes) and strategies that would enhance them through IT
- Focus on the voice of the customer
- Ensure appropriate commitment, sponsorship and participation of the Board, Executive Management and the Senior Management team, including formalizing the Business and IT Executive Steering Governance and Working Councils and clearly define their decision rights, roles, responsibility and authority including influencers and decision makers (see Exhibit 6)

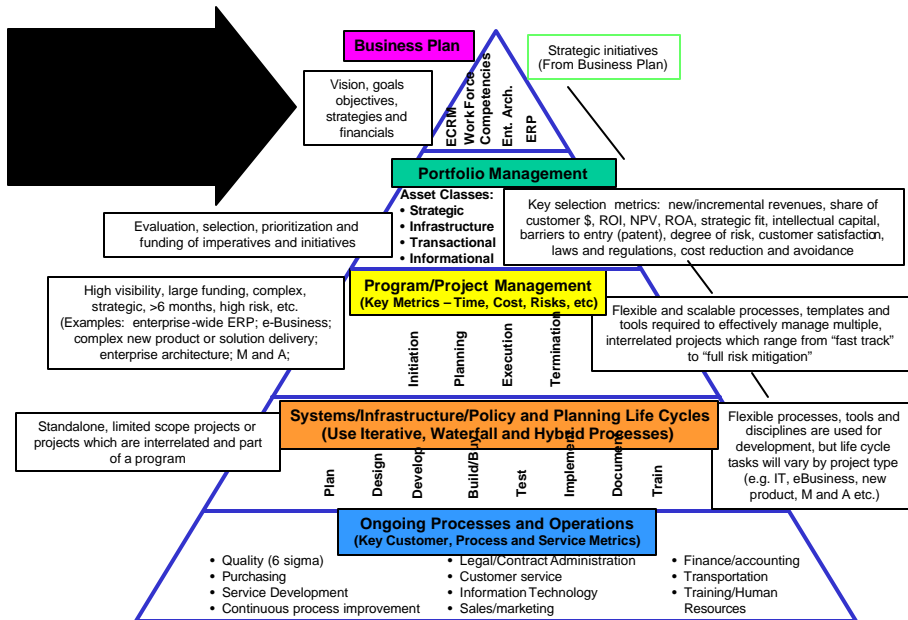
Exhibit 6 - IT/Business: Multi-level and Multi-Disciplinary Governance Steering, Review and Escalation Roles



- Ensure that all IT initiatives are evaluated using a consistent process (e.g. formalize a Portfolio Investment and Management process) based on a consistent, but flexible set of investment selection, prioritization and review criteria to assure a strong link to the business plan (see Exhibit 7)

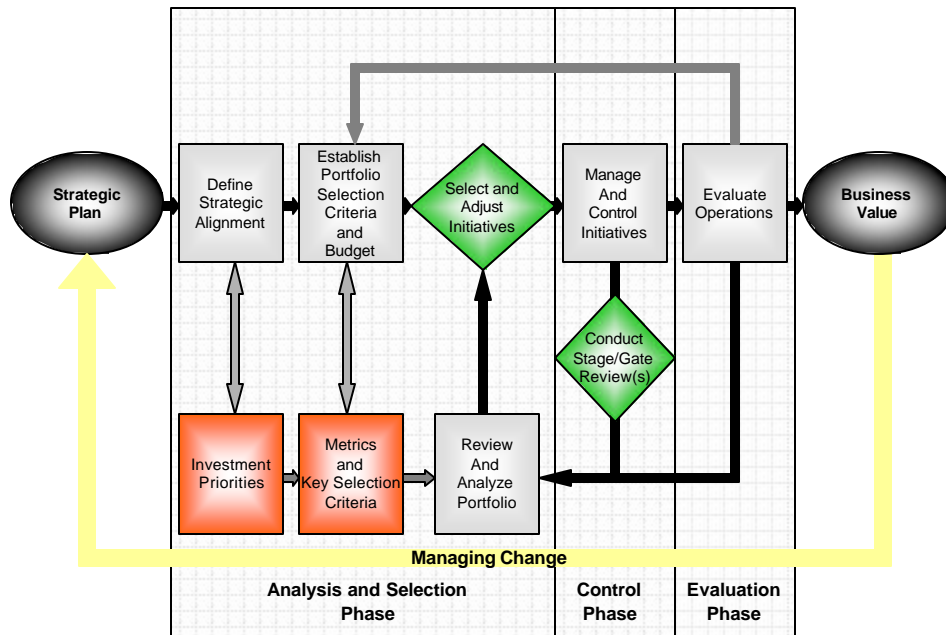
Business Plan/Portfolio/Project/SDLC/IDLC/PDLC - imperatives must be identified in the business plan; compete for funding (Portfolio Management), must be decomposed into programs/projects and with the application of life cycle methodologies, facilitate quality deployment

Exhibit 7 - IT/Business Alignment



- Establish an iterative process linking Business and IT plans and budgets Capital Planning and Investment Control, Budget (Capital and Expense), Projects, Services and Outsourcing (see Exhibit 8)

*Exhibit 8 - IT/Business Governance Linkage - High Level Flow*



### Execution and Resource Management

Major components that are part of this IT governance category are program and project management, IT service management and delivery (including keeping the lights on) and vendor and outsourcing management.

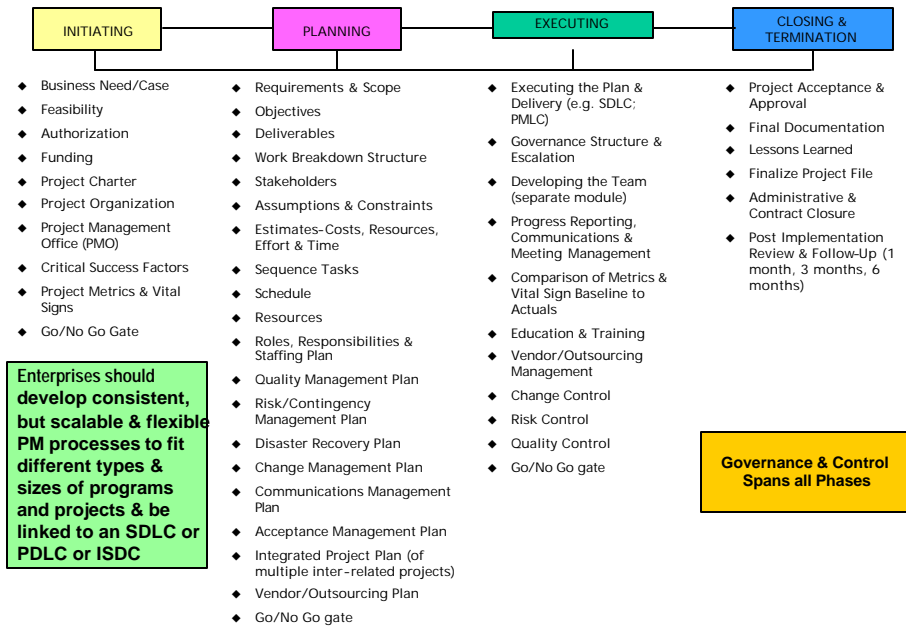
**Program/Project Management Excellence-** includes investing, selecting, prioritizing and resourcing the right programs and projects, implementing them successfully (e.g. on-time, on-budget, within scope, with high quality and to the customers satisfaction) and creating a sustainable PM environment and culture.

### Program/Project Management (PM) Governance Policy and Sustainability

- A formal PM policy and process should be established defining the components of the policy and identify what is mandatory and what is discretionary.
- A formal governance calendar should be published which identifies Steering Counsel meetings, project and operational reviews, required and discretionary score cards and status reports (e.g. weekly, bi-weekly, monthly, quarterly)
- A flexible and scalable PM process (e.g. fast track versus full risk mitigation, including phases, gates, deliverables, templates, tools, approvals, roles and responsibilities) should be established, enforced and continuously improved (see Exhibit 9) and be linked to an SDLC (Systems Development Life Cycle process)

Exhibit 9 - Project Management Life cycle

**Project Management Life Cycle Phases & Components - Overview**



- 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 should be approved upfront by the Sponsor during the Initiation Phase and monitored throughout the development or procurement, testing, training and implementation phases.
- Key and consistent Program and project metrics should be instituted based on time, cost, resources, quality and customer satisfaction (including earned value, where applicable).

**IT Service Management, Delivery and Infrastructure Excellence** – includes minimizing/avoiding business disruptions, assuring the continuity of service and delivery (e.g. meet service levels negotiated as well as on time, on budget, with high quality delivery, reliability, back-up and recovery (including disaster recovery), key component redundancy, operational dashboards, security, etc.).

**Infrastructure Accountability**

- All operations (e.g. PBX, Data Center, Help Desk, Servers, Network, etc.) must have a Primary Owner and a Secondary Owner (Backup).
- The overall budget for IT Operations and support should be divided into a set of defined products and services, so that all IT costs can be mapped to valuable business services.
- All the IT services should achieve the desired level of efficiency, productivity and reliability.

**Status Reporting, Key Metrics and Escalation**

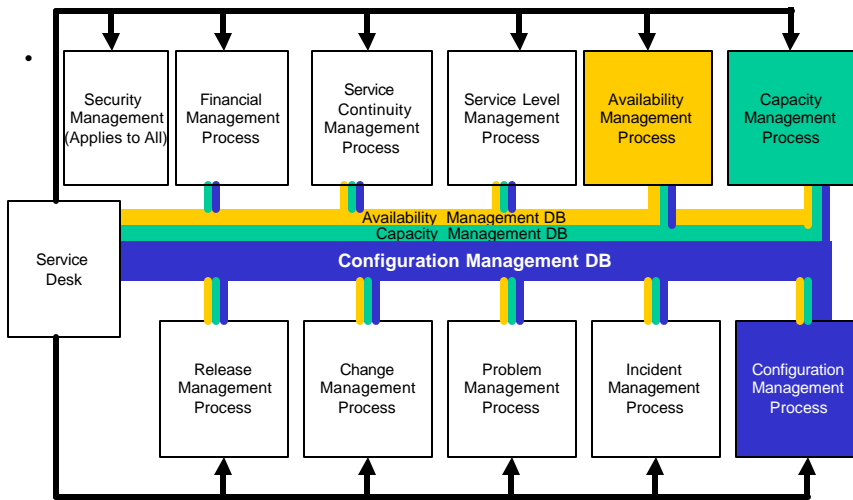
- Identify and monitor key operational metrics (e.g. SLAs [Below, Meets, Exceeds in Program Management, Service Delivery and User Satisfaction]), ITIL process metrics and other dashboard metrics.).
- Operational status reports must be produced on a pre-defined basis (e.g. daily, weekly, monthly report 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.

### Service Management and Delivery (includes ITIL)

- 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, which is currently in its trial period to become an ISO standard, consists of twelve process areas such as problem management, incident management, capacity management, financial management, release management, change management, configuration management, service level management, security management, capacity management, and others (see Exhibit 10).

Exhibit 10 - ITIL Framework

Overview of ITIL (IT Infrastructure Library) Processes – A framework consisting of twelve repeatable, documented processes for improving IT Service Management and Delivery to reduce costs and improve customer satisfaction, service and compliance



### Vendor and Outsourcing Management

Outsourcing has become a major IT cost reduction strategy for many organizations. Exhibit 11 identifies steps helpful in vendor and outsourcing selection, contract negotiation, management and divorce.

## Steps in Vendor/Outsourcing Selection, Negotiations and Management

- Develop a Plan and Build a Business Case
  - Baseline model
  - Requirements & scope
  - Costs (realistic)/savings
  - Contingency Plan
  - Assumptions/Constraint
  - Obstacles
  - Metrics – OLAs, SLAs, Cost, Schedule, +++
- Go/No-Go
  - Communicate decision to stakeholders
- RFP
  - Preparation
  - Narrow the field - RFI, RFQ
  - Invitation to Vendors
    - Vendor briefings
    - Site visits
    - Vendor proposals
- Evaluation & Selection
  - Multidisciplinary team
  - Qualitative & quantitative evaluation criteria
  - Cultural match/bench strength
  - Due Diligence
  - Final selection
- Contract Negotiation/Signing
  - It takes two to tango
  - Contract types
    - Fixed price (well defined)
    - Time & material (not well defined)
    - Cost & fixed fee
    - Cost & variable fee
    - Unit price contract
  - Terms & Conditions
  - Governance and Escalation
  - Disengagement Options & Responsibilities
- Contract Management & Performance Monitoring
  - Assure compliance with project or service objectives, scope, schedule, & deliverables
  - Measure and evaluate delivered work or services
  - Vendor governance and reporting (Metrics)
  - Integrate vendor tasks and deliverables into Project Plan
  - Assign Senior Manager/Director/VP to manage vendor relationship with "clout"
- Disengagement Considerations
  - Transition Plan
  - Who owns what?
  - Who is responsible?
  - What about intellectual capital?
  - People and facility issues

## Performance Management, Risk Management and Management Controls

This section cover the components of performance management, risk 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, operations and others important themes which support an organization's vision, mission, plans and financials . The execution of these objectives must be monitored and measured by a combination of balanced scorecard key performance indicators as well as formal and informal status review meetings, reports (e.g. report cards, dashboards). These balanced score card indicators should focus on critical success factors that are measurable, part of a standard reporting or review system, linked to a governance component (e.g. strategic plan, capital and expense budgets, project management, service levels, financials, etc.), accurate, and verifiable (see Exhibit 12).
- **Risk Management & Mitigation** - 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 scope definition leads to costly rework and lack of or poor regulatory compliance and controls (e.g. Sarbanes-Oxley, FDA, FCC, SEC). There are three primary aspects of risk management to be considered:
  - Risk identification and analysis
  - Risk quantification
  - Risk response, mitigation & contingency plan development

Responses to risk generally fit into one of the following categories:

- Avoidance - eliminate the risk by eliminating the cause
- Mitigation - reduce the monetary value of the risk by reducing the probability, the impact, or both
- Acceptance - simply accept the consequences

There are several responses to potential risks:

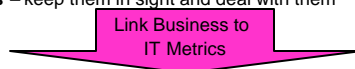
- Outsourcing/Procurement - get additional goods and/or services from outside the project team
  - Contingency Planning - define action steps that will be taken in the event the risk event occurs, and estimating the cost associated with that action
  - Alternative Strategies - consider changing the approach
  - Insurance - insurance policies or bonds may protect against financial losses associated with certain types of risk
- **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 plan to sustain that compliance.

**Exhibit 12 - Balanced Score Card – Overview of Key Business/IT Performance Metrics (KPMs)**

There are many metric options, but those selected should be meaningful, accurate, easily collected as part of routine governance reporting and verifiable.

**Balanced Score Card – Business KPMs\***

- **Financial** - revenues, profits, budgets/expenses, ROA, ROI, NPV, etc.
- **Strategic** - new product/service development, intellectual property, asset management, portfolio valuation, customer satisfaction, process and/or technology innovation and transformation, improvement in employee and organizational skills and competencies, etc.
- **Operational** – sales and marketing, productivity, regulatory compliance, quality, human resources, operations, engineering, manufacturing, customer service, IT, quality, purchasing, etc.
- **Regulatory** – Legal requirements
- **Major Issues and Risks** – keep them in sight and deal with them



**Balanced Score Card – Information Technology KPMs \***

- **Customer (User) Satisfaction**
- **Employee Satisfaction**
- **Program/Project Management\*** – time/schedule, budget/cost, deliverables, quality, resources, risks, number of changes, key issues, earned value, committed costs, etc.
- **IT Service (Operations & )\*** – service levels, uptime, service delivery, reliability, redundancy, availability, problem reporting and control, mean time to response and repair, contingency plans, disaster recovery plans and procedures, etc.
- **Financials** – cost/benefits, budgets/actuals/variances, P & L, ROI, Payback, NPV, etc.
- **Major Issues and Risks** – keep them in sight and deal with them

\* (Note: For each category, additional metrics are available and should be focused on critical success factors)

**Steps in Making IT Governance Real and Sustainable:**

The integrated IT governance framework proposed in this paper addresses the objectives identified previously in this paper: 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 projects and IT service management and delivery through insourcing and outsourcing and facilitates compliance. The following steps will help to make IT governance more real and help transition enterprises to a higher level of IT governance maturity:

- Identify Executive Champion, Steering Committee Multi-Disciplinary Work Groups for each component and component owner
- Do Homework – Educate yourself on current and emerging best practices
- Develop a “Composite of IT Governance Framework ” leveraging current and emerging best practices
- Market the IT governance value proposition and communicate its goals, objectives and benefits

- Conduct a IT governance maturity assessment using a leading best practice process such as CMMI or equivalent to assess and define current and target-state maturity levels for each IT governance process and function and develop a transitional action plan
- Analyze assessment results and establish an IT Governance maturity baseline and develop a roadmap and a plan with priorities for transition.
- Establish a “IT Governance Web Portal” to support information dissemination (e.g. process documentation, policies, tools, templates)
- Celebrate wins

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 elements:

- Change Leadership – identify a champion (s) to actively sponsor, and relentlessly drive the change
- Creating a Shared Need – the value proposition and how it benefits individuals and the organization
- Shaping a vision – The desired outcomes of the change are clear, well understood and realistic
- Mobilizing Commitment – Provide solid reasons why the change is necessary and obtain strong commitment from key constituents – who are committed to make it happen, make it work and invest their energy
- Making Change Last – Change is reinforced, supported and refreshed so that it endures through the use of rewards and recognition, performance reviews and incentives, visibility and exposure to senior management reviews, etc.
- Monitoring Progress and Learning – Progress is measured by comparing a current base line to the transformed base line on such factors as time, cost, level of effort, quality, customer satisfaction and others . Develop and maintain a “lessons learned” data base and make it available to the organization.
- Changing Systems, Structures and Competencies – Policies, systems and practices enable the transformation supplemented by employee education, certification and continuous learning.

### **Summary and Implications for the Future**

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 all organizations to approach improvements in IT governance, this paper proposes a comprehensive and integrated IT governance framework and roadmap which identifies the appropriate frameworks for each of the major IT Governance components that must be addressed in any approach and are critical for companies to achieve more effective alignment and management of IT. The integrated framework and roadmap can serve a guideline for any organization to select and customize the appropriate approach applicable to their environment, priorities, capabilities and available resources.

The material in this paper represents an abstract of a pragmatic and actionable workshop which addresses the overarching issue of “How to Plan, Deploy and Sustain an Effective IT Governance Policy, Process and Environment?,” developed by the author for business and IT leaders and practitioners responsible for planning, developing, implementing, sustaining and continuously improving an IT governance policy and process. It goes into more detail into each of the key components and related models that will enable those responsible to choose and customize the right approaches for their respective organizations.

## Appendix A – Select Examples of Business/IT Strategy and Governance Reference Models

### IT Governance Framework Examples

### IT Governance Framework Examples

#### Select Examples of Business/IT Strategy and Governance Reference Models/Frameworks\*

(\*In general, the models/frameworks/standards referenced in the table have been selected because they are vendor independent & often only address one or more components that must be part of a comprehensive IT Governance Framework solution)

Model Focus	Model Name	Author	Use
Business Strategy	BCG Matrix	Boston Consulting Group (23)	Business Portfolio Management –helps to compare divisions of companies by market share & growth rate
	Competitive Strategies	Porter (17)	Understand factors of competition
	Strategic Management	Hitt, et. al. (36)	Roadmap for Strategic Mgt.
	Reinventing Core Strategies	Hamel (22)	Analyzes if companies can re-invent themselves
IT Strategy	Framework for Evaluating IT Applications	McFarlan, Cash (24); General Accounting Office – ITIM (31)	Application Portfolio Management
	Stages of IT Maturity	Nolan (19); Nolan and Koot (20)	Analyzes IT Stages of Maturity
	Strategic Alignment Model	Cordata (1) Luftman, et al (3); Popper (2); Selig (25)	IT/Business Alignment

### IT Governance Framework Examples

### IT Governance Framework Examples

#### Select Examples of Business/IT Strategy and Governance Models/Frameworks (Cont'd)\*

(\*In general, the models, frameworks and standards referenced in the table are vendor independent & often only address one or more components that must be part of a comprehensive IT Governance Framework solution)

Model Focus	Model Name	Author	Use
IT Governance –General	COBIT Decisions Rights	IT Governance Institute (9); Weil and Ross (4)	A framework which links IT processes to four domains (plan/organize; acquire/implement; delivery; support); Who influences and makes IT decisions
Project Management (PM)	PMBOK – PM Book of Knowledge	Project Management Institute (12, 13)	Defines 9 knowledge & 5 process areas of PM
	OPM3(Organizational PM Maturity Model)		Tool to help organizations self assess their PM Maturity
	PMMM – PM Maturity Model	Crawford (26)	Maps SEI's CMMI (see below) model to PMBOK to provide a PM maturity roadmap based on stages of maturity
	Prince2	CCTA (Central Computer & Telecomm. Agency (UK Government) (27)	A PM methodology that focuses on the business case
Systems/Software Development	CMMI (Capabilities Maturity Model – Integrated)	Software Engineering Institute (SEI) – Carnegie Mellon (14)	Used to analyze 5 stages of maturity for achieving process improvements in systems & software development

*IT Governance Framework Examples*

**Select Examples of Business/IT Strategy and Governance Models/Frameworks (Cont'd)\***

(\*In general, the models, frameworks and standards referenced in the table are vendor independent & often only address one or more components that must be part of a comprehensive IT Governance Framework solution)

Model Focus	Model Name	Author	Use
<b>Systems/Software Development</b>	SSADM (Structured Systems & Design Method)	CCTA (Central Computer & Telecomm. Agency (UK Government))	Structured methodology to develop systems
	DSADM (Dynamic Systems Development Method)	The DSADM Consortium (UK) (28)	Used as a RAD (Rapid Application Development) Methodology
<b>Quality &amp; Security</b>	Six Sigma	Motorola with GE popularizing the concept (30); Breyfogle, et. al. (29)	Framework used to continuously improve processes and reduce errors or defects (can be applied to any process)
	ISO 9000 (Quality) & 14000 (Environment)	International Standards Organization (15)	Focus on quality and environmental management respectively policies and practices of an enterprise respectively
	ISO 17799	International Standards Organization (15)	IT security framework

*IT Governance Framework Examples*  
*IT Governance Framework Examples*

**Select Examples of Business/IT Strategy and Governance Models/Frameworks (Cont'd)\***

(\*In general, the models, frameworks and standards referenced in the table are vendor independent & often only address one or more components that must be part of a comprehensive IT Governance Framework solution)

Model Focus	Model Name	Author	Use
<b>IT Operations, Production &amp; Infrastructure</b>	ITIL (IT Infrastructure Library)	Originated by CCTA (Central Computer & Telecomm. Agency (UK Government)); Currently maintained by Office of Government Commerce (UK); Certification Organizations include: - EXIN (European Examination Institute for Information Science- (International in Scope)) - ISEB (Information Systems Examination Board (UK) (16, 32)	A framework of 12 processes (e.g. Configuration, Change, Release, Capacity, etc.) that provides an effective foundation (repeatable and documented processes) to improve the quality and effectiveness of IT Service & Delivery Management
<b>Human Resources</b>	PCMM (People Capability Maturity Model)	Software Engineering Institute (SEI) – Carnegie Mellon (37)	Model for advancing people and organizational maturity
<b>Performance Measurement</b>	Balanced Scorecard; Critical Success Factors	Kaplan & Norton (37); Caltucci (7,8); Rockhart (18)	Method for strategy focused measures of success

## IT Governance Framework Examples

### Select Examples of Business/IT Strategy and Governance Models/Frameworks (Cont'd)\*

(\*In general, the models, frameworks and standards referenced in the table are vendor independent & often only address one or more components That must be part of a comprehensive IT Governance Framework solution)

Model Focus	Model Name	Author	Use
Regulatory Compliance	Sarbanes Oxley Act (SOX) of 2002;	US Congress – HR 3763	SOX - Law that identifies public company Board and Executive Officers' responsibilities regarding audits, controls, oversight and related matters. Used as a guideline to assist in Public Company compliance, which includes IT.
	FDA HIPPA SEC Others	Various government agencies that apply to either all or select industries	
Outsourcing and Vendor Management	Outsourcing Frameworks	Palvia, S. (34); Casale(33);Brown, et. al. (33)	Various frameworks and guidelines on how to outsource IT and other areas.

### References:

1. Cordite, James, *Best Practices in Information Technology*, Prentice Hall, Upper Saddle River, NJ, 1998.
2. Popper, Charles, *Holistic Framework for IT Governance*, Center for Information Policy Research, Harvard University, January 2000.
3. Luftman, Jerry, *Managing the Information Technology Resource*, Pearson Prentice Hall, Upper Saddle River, NJ, 2004.
4. Weil, Peter and Ross, James, *IT Governance: How Top Performers Manage IT Decision Rights Results*, Harvard Business Press, Cambridge, MA. 2004.
5. Pultorak, David and Kerrigan, Jim, *Conformance Performance and Rapport: A Framework for Corporate and IT Governance*, " NACD – Directors Monthly, February 2005.
6. Board Effectiveness Partners, *A Roadmap: Strengthening Corporate Governance*, Insights, Chapter 1, Version 2.0, January 2004.
7. Catucci, Bill, *Ten Lessons for Implementing the Balanced Scorecard*, Balanced Scorecard, January 15, 2003.
8. Catucci, Bill, *A New Governance Model*, Balanced Scorecard, January 15, 2005.
9. IT Governance Institute, *Board Briefing on IT Governance Report*, Second Edition, ITGI, Rolling Meadows, IL, 2003.
10. Melnicoff, Richard, Shearer, Sandy and Goyal, Deepak, *Is There a Smarter Way to Approach IT Governance?* Outlook, 2005 (Accentor), Number 1.
11. Millard, Elizabeth, *IT, Govern Thyself*, Processor, Volume 27, Number 12.
12. Project Management Institute, *A Guide to the Project Management Book of Knowledge*, 2<sup>nd</sup> Edition, 2000 and 3<sup>rd</sup> Edition, *PMI*, Newtown Square, PA, 2004.
13. Project Management Institute, *OPM3- Organizational Project Management Maturity Model*," *PMI*, Newtown Square, PA, 2004.
14. Software Engineering Institute, *Capabilities Maturity Mode – Version 1.1*, SEI, Carnegie Mellon University, 1993.
15. International Standards Organization: <http://www.iso.org>
16. ITIL Certification Information: EXIN - <http://www.exin-exams.com> ISEB - <http://www.bcs.org.uk/iseb/isme2.htm>

17. Porter, Michael, *Competitive Advantage: Creating and Sustaining Superior Performance*, Free Press, 1985.
18. Rockart, John F., *Chief Executives Define Their Own Data Needs*, Harvard Business Review, March-April, 1979.
19. Nolan, Richard, *Managing the Crises in Data Processing*, Harvard Business Review, Vol. 57, March-April, 1979.
20. Nolan, Richard and Koot, William, *Nolan's Stage Theory Today*, Holland Management Review, Number 31, 1992.
21. Davenport, Tom, *Information Ecology*, Oxford University Press, 1997.
22. Hamel, Gary, *Leading the Revolution*, Harvard Business School Press, 2000.
23. Boston Consulting Group, *Perspectives on Experience*, The Boston Consulting Group, 1974.
24. McFarlan, W., and Cash, J., *Strategic Planning for Information Systems*, Wiley, 1990.
25. Selig, Gad, *Strategic Planning for Information Resource Management- A Multinational Perspective*, UMI Research Press, 1983.
26. Crawford, Ken, *Project Management Maturity Model*, Marcel Decker, Inc., 2002.
27. IBM UK Ltd., (Licensed by) CCTA, *Prince2 – Managing Successful Projects with Prince 2*, Central Computer and Telecommunications Agency, Crown Publishers, 1998.
28. DSDM Consortium, *Dynamic Systems Development Method*, Version 3, 1995.
29. Breyfogle, F., Cupello, J., Meadows, Becki, *Managing Six Sigma*, Wiley, 2001.
30. General Electric Corp., *Six Sigma Training Workshop for Vendors*, GE, 2002.
31. General Accounting Office, *Information Technology Investment Management Model: A Framework for Assessing and Improving Process Maturity*, GAO-04-394G, Version 1.1, March 2004.
32. Cybercan Technology Solutions, *ITIL (Information Technology Infrastructure Library)-Foundation Workshop*, 2005.
33. Casale, Frank, *Darwin and Outsourcing*, Outsourcing Essentials, Vol.2, No. 3 Winter 2004, The Outsourcing Institute.
34. Palvia, Shailendra, *Off Shore Outsourcing – Creating a World of Difference*, Proceeding of the Second Annual International Outsourcing Conference, Center for Global Outsourcing, New York, July, 2003.
35. Brown, Doug and Wilson, Scott, *The Black Book of Outsourcing*, Wiley, 2005.
36. Hitt, M., Ireland, R. and Hoskisson, R., *Strategic Management- Competitiveness and Globalization*, 6<sup>th</sup> Ed., Thomson -South Western, 2005.
37. Kaplan, R. and Norton, D., *The Strategy Focused Company*, Harvard Business School Press, 2001.
38. Weill, Peter and Broadbend. Marianne, *Leveraging the New Infrastructure: How Market Leaders Capitalize on Information Technology*, Harvard Business School Press, 1998.