

IT Governance-An Integrated Framework and Roadmap: How to Plan, Deploy and Sustain for Improved Effectiveness

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ABSTRACT

The issues, opportunities and challenges of effectively managing and 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.

This paper proposes a comprehensive and integrated IT governance framework and roadmap which identifies the appropriate current and emerging best practices 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 any organization to select and customize the appropriate approach applicable to its environment, plans, priorities, capabilities and available resources.

The findings and implications are based on extensive primary and secondary research and are grounded in a review of current and emerging industry and government best practices and select case studies of leading global and regional organizations based on the recently published book by the author entitled, "Implementing Effective IT Governance and IT Management," published by Van Haren Publishers, 2015.

Keywords: IT demand, IT governance, IT framework, IT management

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 IT investments, delivery services and new or change authorizations and compliance with regulations, laws and organizational policies. It formalizes and clarifies oversight, accountability and decision rights (Bainbridge, 2008; (Board Effectiveness Partners, 2004; Calder, 2009; De Haes, 2013; Weill, 2004).

The purpose of IT Governance is to direct and manage IT initiatives to ensure that the performance meets the following objectives:

- Aligns IT investments and priorities more closely with the business

- Manages, evaluates, prioritizes, funds, measures and monitors requests for IT services and the resulting work and deliverables, in a more consistent and repeatable manner that optimizes returns to the business
- Responsible and efficient utilization of resources and assets
- Ensures that IT delivers on its plans, budgets and commitments
- Establishes and clarifies accountability and decision rights (clearly defines roles and authority)
- Manages risks, change and contingencies proactively
- Improves IT organizational performance, compliance, maturity and staff development
- Improves customer service and overall responsiveness

In reviewing the relevant literature and current practices, a growing number of IT governance and related frameworks have been developed to help organizations deal with the various components of IT governance, including CobiT®, PMMM, PMBOK, ITIL, CMMI, Prince2, ISO 9000, ISO 17799, Balanced Scorecard, 6 Sigma, CGEIT, Lean IT, OPBOK, BABOK, AGILE and others (PMI, 2013), (Crawford, 2014), (ITGI, 2005, 2008, 2013). All of these frameworks represent either standards, guidelines and/or 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 the use of enabling technologies (AASI, 2014). 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 (Selig, 2015):

- 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 the business
- Degree of risk
- Customer and/or sponsor requirements
- 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 and approve and manage major IT investments (capital and operating expenses)
- Improves overall profitability
- Formalizes the selection, contract administration and management of vendor/outsourcing initiatives
- Optimizes assets and human capital resources
- Advances organizational effectiveness and maturity
- Facilitates compliance and audits (e.g. SOX, FDA, HIPPA, BASEL III, etc.) by documenting processes controls and decision authority

RESEARCH METHODOLOGY

The intent of this applied research paper is to develop a high level comprehensive IT Governance framework referencing current and evolving standards, guidelines and practices such as PMI, CoBiT, ITIL, Strategy Planning, select ISO Standards, CMMI, TOGAF, OPBOK, the Balanced Scorecard and others.

The author views IT governance as the focal point for more effective IT management around which there are many important issues such as alignment, leadership, planning, execution, accountability, metrics, controls and related topics.

None of this is easy, or obvious, and this research is intended to pull together, from about 100 secondary sources, current and emerging standards and guidelines and drawn from over twenty IT governance company case studies of large and medium sized domestic and global organizations. One of these case studies is included in the paper.

In reviewing the current literature, completing over twenty case studies by interviewing CIOs, CFOs & direct reports and conducting numerous private and public IT governance workshops and consulting assignments both domestically and internationally over the past few years attended by thousands of executives, managers and practitioners on IT/Business Alignment, Planning, Deployment (e.g. Program/Project Management, IT Service Management & Outsourcing) and Governance, much has been written and documented about the individual components of IT Governance. However, much less has been written about a comprehensive and integrated IT/Business Alignment, Planning, Execution and Governance approach that represents a balanced approach consisting both of a strategic top down framework and roadmap together with bottom up implementation principles and practices that address the broad range of IT issues, constraints and opportunities in a planned, coordinated, prioritized, cost effective and value delivery manner.

The purpose of the article is not to repeat in greater details, what has been published previously, but to describe each of the major components in an overall comprehensive framework and roadmap

in sufficient detail for practitioners to use as a guideline for any organization in any industry to formulate and tailor an effective approach to IT governance for its environment and to help transition the IT organization to a higher level of maturity, effectiveness and responsiveness.

THE CRITICAL PILLARS OF EFFECTIVE IT GOVERNANCE

Effective IT Governance is built on several critical pillars. These pillars include: leadership, organization and decision rights, flexible and scalable processes and the use of enabling technology (Prasad, 2009), (Weill, 2004).

- **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 skills and competencies
 - Meaningful metrics and key performance indicators
 - CIO is a change agent who links process to technology within the business and provides the sponsorship and tools for enablement, innovation and transformation
- **Flexible and scalable processes & controls** – the IT governance model places heavy emphasis on the importance of process implementation and improvement:
 - Processes are well defined, documented and measured (e.g. Planning, Project Management, IT Service management, Vendor management, Alignment, etc.)
 - 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, financial, asset and performance management and scorecards, etc.).
 - Tools provide governance, communications and effectiveness metrics to facilitate decision support, follow-up and management actions

If anyone of the above pillars is missing or ineffective, the IT governance initiative will not be effective or sustainable. In addition, over dependence on one dimension over the others will result in sub-optimal performance.

As an integral part of the leadership and organization pillar, Peter Weill and Jeane Ross 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.

OVERVIEW OF THE INTEGRATED IT GOVERNANCE FRAMEWORK AND ROADMAP

Grounded in industry best practice research and required to plan, develop, deploy and sustain a cost effective approach to IT Governance, the integrated IT governance framework consists of five (5) to six (6) critical IT Governance imperatives (which leverage best practice models and are “must do’s”) and address the following work areas:

- **Business strategy, plan and objectives (Demand Management)** - This involves the development of the business strategy and plan which should drive the IT strategy and plan.
- **IT strategy, plan and objectives (Demand Management)** – This should be based on the business plan and objectives and will provide the direction and priorities of the IT functions and resources. This should also include portfolio investment management investments, a prioritization scheme and identify the decision rights (who influences decisions and who is authorized to make the decisions) on a wide variety of IT areas. In addition, the CIO is responsible for the infrastructure investments such as servers, networks, systems software and management.
- **IT plan execution (Execution Management)** – This encompasses the processes of program and project management, IT service management (including ITIL – IT Infrastructure Library), risk and threat management, change management, security, contingency plans, outsourcing, data management and others.
- **Performance management, risk management and management controls (Execution Management)** – This includes such areas as the Balanced Scorecard, key performance indicators, CoBiT, and regulatory compliance areas.
- **Vendor Management and Outsourcing Management (Execution Management)** – Since companies are increasing their outsourcing spending, selecting and managing the vendors and their deliverables has become critical.
- **People Development, Continuous Process Improvement and Learning** - It is critical to invest in people, knowledge management and sustain continuous process improvement and innovation initiatives.

For each IT governance imperative, a description of the key components, select standards, guidelines and select references are identified.

Figure-1 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); 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 select sources.

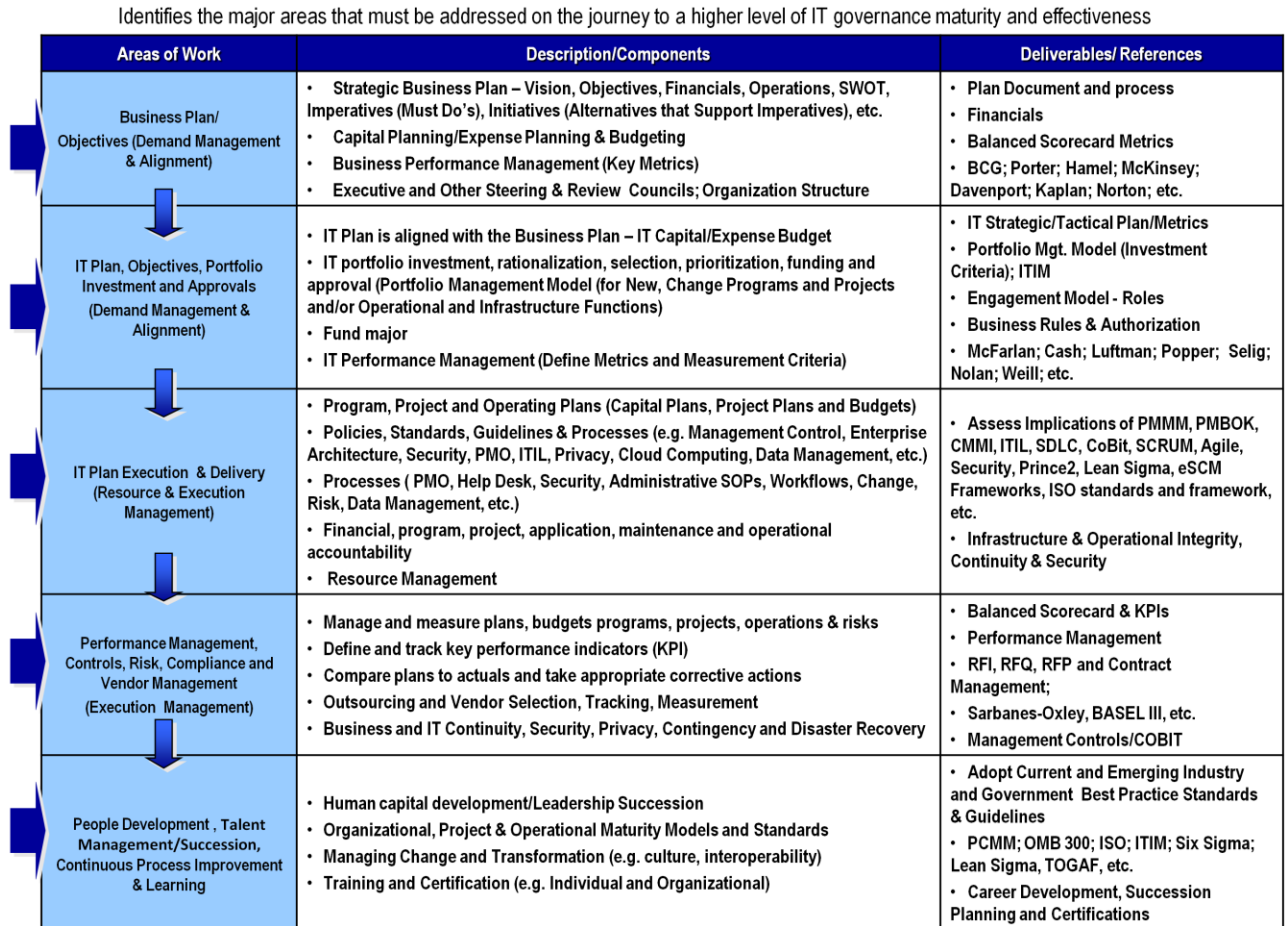


Figure – 1: Integrated IT Governance Framework and Roadmap

The remaining parts of the paper provide a high level overview of select critical components of the IT governance framework, many of which were identified in the company case studies. 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 the approach that will lead to continuous improvements and higher levels of effectiveness and maturity in their respective IT environments (Selig, 2015; De Haes, 2008; Debreceeny, 2009; ISACA, 2002; ITGI, 2013; Weill, 2004; Prasad, 2009).

BUSINESS/IT ALIGNMENT AND DEMAND MANAGEMENT

Requests or 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

requirements) and discretionary (could do's if aligned, 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. The following factors will further facilitate more effective business/IT alignment:

- Clearly define and relate the value (e.g. cost reduction, containment and avoidance; increased revenues; faster access to information; shorter time to market, improved innovation, 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 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-2), and
- Develop a strategic IT plan that identifies major initiatives, technical/architecture, security, operational, organizational, people development and financial objectives and measurements in parallel with the business strategy.

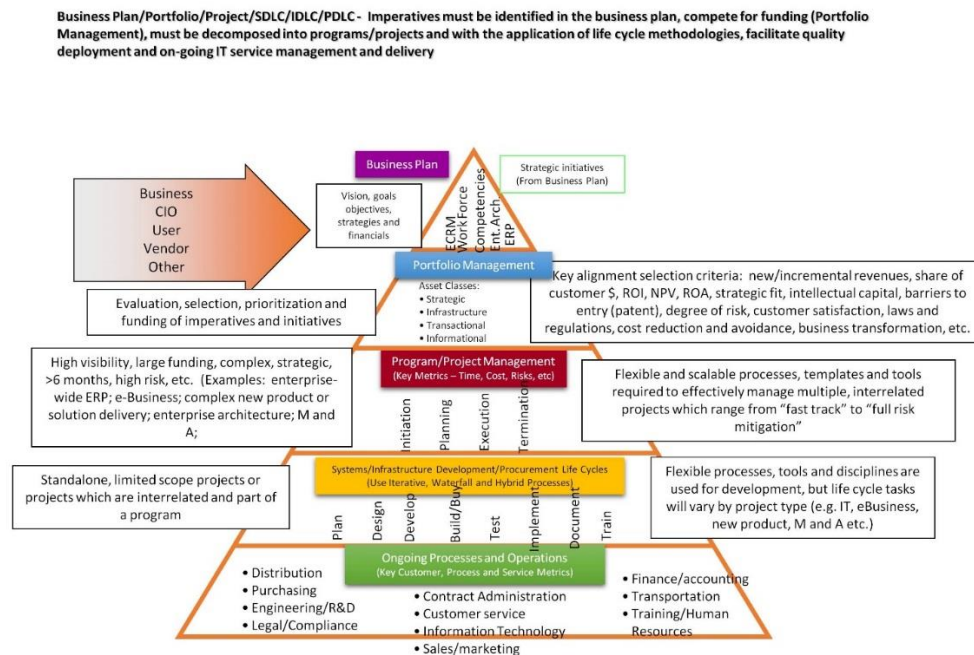


Figure – 2: Business/IT Alignment and Portfolio Investment Management Triangle

Input to Figure-2 comes from the business or IT and should be evaluated based on consistent portfolio investment management criteria (e.g. ROI, Strategic Fit, Customer Satisfaction, Improvement, etc.) Once a portfolio of projects is approved, the Project Management or Vendor Management or Product Management process and controls should be utilized to help implement the initiative on time, on budget with high quality and to the customers' satisfaction.

EXECUTION MANAGEMENT

Major components which are part of this IT governance category include program and project management, process management, resource management, IT service management, strategic sourcing and vendor management and performance management.

Program and project management

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, organizations are increasingly implementing a flexible and scalable PM/SDLC life cycle (e.g. fast track versus full risk mitigation). Figure-3 illustrates the life cycle phases and their key components. In addition, the following factors will facilitate an effective PM culture and environment (Adusumilli, 2011; Fink, 2014; Kerzner, 2013; Meredith, 2015; PMI, 2013):

- 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)
- Key roles and responsibilities must be formally agreed to upfront and communicated to all of the constituencies in the form of a **RACI** Matrix (**R**esponsible, **A**pprove, **C**onsult, and **I**nform)
- 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 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
- Risk management should be used to develop contingency plans for high probability of occurrence and high impact
- 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. A growing number of organizations are establishing enterprise-wide PMOs to track all types of strategic initiatives

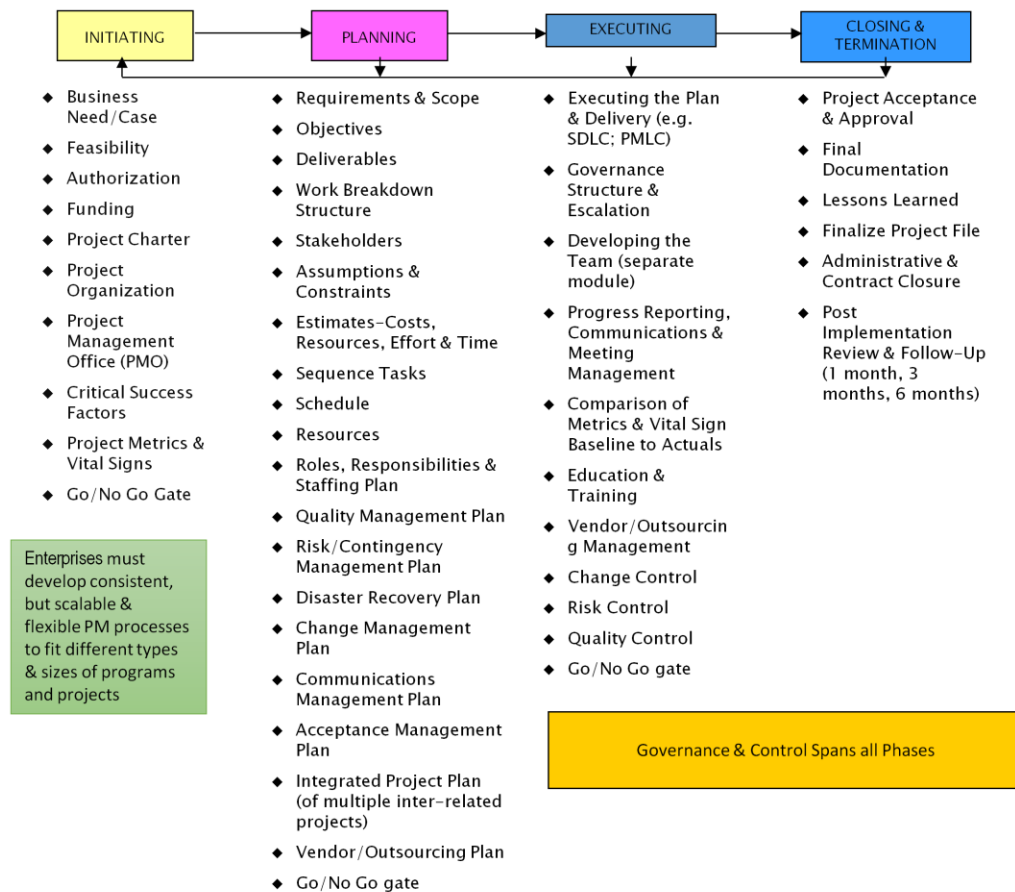


Figure – 3: Project Management Life Cycle Phases & Key Components - Overview

IT service management

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 to: reduce the total cost of operations, improve service quality, improve customer satisfaction and improve compliance. IT service management 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:

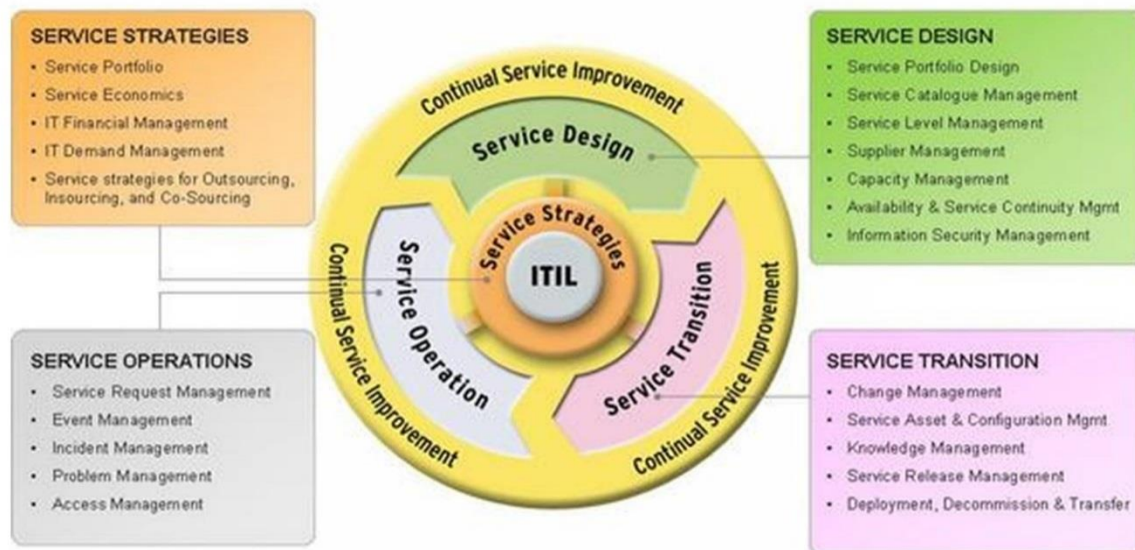
- Streamline service delivery and support processes
- Develop and document repeatable processes and procedures
- Reduce number of service incidents and outages
- Implement standards and guidelines to do things right the first time and reduce defects and rework
- Perform proactive analysis, prevention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

- Accurately allocate and recover costs
- Audit, manage and improve IT processes
- Develop an IT security strategy and contingency and recovery plans

Information technology infrastructure library (ITIL) – 2011 lifecycle phases

The ITIL framework provides an effective foundation for higher quality and effective IT service management. ITIL involves a standardized approach, common processes and terminology and industry supported tools and technologies. Key practices for ITIL excellence include (Axelos, 2014), (Bernard, 2013), (Moeller, 2013), (Zhang, 2013):

- 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 (e.g. of the IT Operational and Infrastructure functions)
- The ITIL 2011 framework consists of five process areas. Figure-4 illustrates the ITIL process areas and a way to rank the maturity level of each process. Today, a rapidly growing number of organizations have or are in the process of adopting and deploying ITIL such as KPMG, Lucent, National Westminster Bank, Oracle, Vodafone, Microsoft, Unilever, Computer Associates and others



Source: Axelos

Figure – 4: Overview of ITIL® 2011 Lifecycle Phases and Processes

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 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

STRATEGIC SOURCING AND VENDOR MANAGEMENT

Outsourcing has become a major IT strategy for many organizations to reduce costs, focus on core competencies, accelerate time to market, improve innovation and staff augmentation. The scope of strategic sourcing is broad and complex and is beyond the scope of this paper (Brown, 2005), (Bullen, 2010), (Deloitte, 2005).

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 (Catucci, 2005), (Chew, 2013), (ISACA, 2013), (Kaplan, 1996). Figure-5 illustrates high level business and IT balanced scorecard categories. 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.

Should link Critical Success Factors (CSFs) to Key Performance Indicators (KPI's) for business and IT (Illustrative Example)

Balanced Score Card – Key Performance Measures - Business*

- Financial (including compliance) – revenue &, profit growth, budgets/expenses, ROA, ROI, NPV, cost reduction, laws and regulations, etc.
- Strategic/Customer - new product/service development, intellectual property, asset management, portfolio valuation, customer satisfaction, improvement in employee and organizational skills and maturity, etc.
- Internal/External Processes – process and/or technology innovation and transformation in sales and marketing, productivity, regulatory compliance, human resources, operations, engineering, manufacturing, customer service, IT, purchasing, vendor management, etc.
- Learning and Growth – people development, education, training, certification, job rotation, mentoring, etc.



Balanced Score Card – Key Performance Indicators - Information Technology*

- Financials – revenue and profit growth, cost reduction & self funding, budgets/actuals/variances, ROI, Payback, NPV, cost per IT customer, % of IT budget to revenue
- Strategic – competitive positioning, business value, alignment, differentiation through technology, growth, etc.
- Customer (User) Satisfaction – ownership, commitment, involvement, part of team, level of service
- Employee Satisfaction/People Development – training, certification, productivity, turnover
- Program/Project Management Process* – time/schedule, budget/cost, deliverables, scope, quality, resources, number of risks, number of changes, key issues, earned value, % of rework, etc.
- Service (Operations) Process* – service levels, uptime, service delivery, reliability, redundancy, availability, problem reporting and control, scalability, backup & disaster recovery plans, mean time to repair, response times, amount of errors and rework, etc.

* (Note: For each category, more granular metrics are available, depending what needs to be measured)

Figure – 5: Select Balanced Score Card Metrics for Business and IT Governance Executive Summary

Asset management

As the investments in IT have increased, more attention is being given to manage the IT assets more effectively. That 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 process and procedure should be developed for evaluating, funding, approving, tracking and documenting the change from the current to the new baseline. There are a variety of change management tools available today that span both 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 & 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.

COBIT® – control objectives for information and related technology

COBIT® defines high level business control and audit objectives for the IT processes, linked to business objectives, and supports these with detailed control objectives to provide management assurance and/or advice for improvement. The control objectives are further supported by audit guidelines which enable auditors and managers to review specific IT processes to help assure management where controls are sufficient or to recommend changes.

COBIT® 5 is about linking business goals to IT objectives (note the linkage here from vision to mission to goals to objectives). COBIT® 5 (launched April 2012) provides metrics and maturity models to measure whether or not the IT organization has achieved its objectives.

COBIT® is owned and supported by ISACA.

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
- 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. Figure-6 illustrates a self-assessment template that can be used to assess the level of maturity for key IT governance components and helps to determine the priorities in planning an IT governance strategy.
- Develop a "future state" IT governance blueprint (where you want to be), always keep it in focus.
- 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.
- 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, etc.).
- Implement a scalable and flexible governance policy and process.
- Utilize technology as on-ramps to facilitate the journey to improved IT governance.

The template can be used to assess the level of IT Governance and its major component, level of, maturity and effectiveness (1=low; 5=high). For an organization to develop a prioritized plan of action.

Additional IT Governance components from COBIT®, CMMI®, ISO® or others may be added across the horizontal axis as required.

Maturity	Attributes	Values																						
Level 5	• Optimized process																							
	• Metrics driven process improvements																							
Level 4	• Process managed and used by all																							
Level 3	• Enterprise wide process and standards																							
Level 2	• Basic Process																							
	• Basic Knowledge																							
Level 1	• Ad hoc																							
	• No established practices or processes																							
Major IT Governance Components		Business Plan																						
		IT Plan																						
		Portfolio Investment Management																						
		Other																						
		Program/Project Management																						
		Resource Management																						
		Risk Management																						
		ITSM + ITIL																						
		Vendor Management																						
		Enterprise Architecture																						
		Cloud Computing																						
		Data Management																						
		Other																						
		Critical Success Factors/CSFs																						
		Key Performance Indicators																						
		MBO's and Incentives tied to CSFs																						
		Controls and Audit (COBIT)																						
		Other																						
		Continuous Process Improvement																						
		Knowledge Management																						
		Education, Training and Learning																						
		Succession Planning																						
		Other																						
		Demand Management and Business / IT Alignment	Execution Management				Performance Management and Controls				People Development and Learning													

Figure – 6: IT Governance Maturity Level – Self Assessment Template

SELECT TECHNOLOGY SOLUTIONS AND ON-RAMPS TO ENABLE AND ACCELERATE IT GOVERNANCE DECISION SUPPORT

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. 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

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.

Planning, alignment and portfolio investment management

- Demand and Customer Relationship Management – process requests, work flow, authorization, accommodate multiple designations (discretionary, mandatory and/or strategic; planned or unplanned; new, enhancements, maintenance and/or keep the lights on), etc.
- Portfolio Management – investment & alignment evaluation criteria, rankings vis-à-vis alternatives, priorities, approval, tracking, etc.
- Work Flow and Process Management and Tracking and Authorization - processes, phases and templates (imbedded and/or custom designed), go/no go gates, etc.
- Planning - Link initiatives and track to strategic/tactical/capital/budget plans and initiatives

Asset, people and program/project management

- Program and Project Life Cycle Support – Phases, templates, reviews, authorization, progress tracking and reporting; required to be updated and accessible at multiple levels; ability to link tasks to related tasks and/or projects and/or programs and record and/or report on multiple key performance indicators – budget, schedule and actuals with variance reporting, status of deliverables, current period, prior period, next period projections, year to date, inception to date, base lining and re-base lining comparisons, etc.
- Asset Management – inventory of assets, \$ value, utilization, aging, depreciation, asset refresh planning, asset retirement and disposal tracking, etc.
- Configuration Management - asset functions, features, costs, location, protocols supported, version and release control, etc.
- Resource Management – skills inventory, labor rates, labor hours, facilities, inventory, forecasting, level loading, etc.
- Cost Management – labor rates, procurement rates, committed costs, overhead rates, budget versus actual by labor or procurement category for this period, last period, year to date, inception to date, cost at completion, by product/service, etc.
- Time Management – from lowest level (activity or tasks) to highest level (project or program), time reporting, budget versus actual by labor or procurement category, etc.

Manage IT services

- Product/Service Catalogue – list of standard repetitive IT product and service solutions offered by IT with pricing and estimated deployment time, etc.
- Service Level Management and Support – incident and problem reporting, tracking and resolution; help desk support; capacity and availability planning and forecasting; usage based tracking, charge backs and cost allocation, quality control, security, etc.
- Change Management – templates, process, recording, reporting, authorization, original base line and re-base line tracking, version control, etc.
- Release Management – 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.)
- Issues and Problem Management – tracking, reporting and resolution
- Financial Management – support capital and expense budgets, cost management, budget and forecasts, accommodate multiple base lines and changes, etc.

- Compliance Management – documentation, traceability, secure third party access, audit support, etc.
- Strategic Sourcing and Vendor Management – Link to vendor governance and reporting, contract management, license tracking, escalation, etc.
- Performance Management – support and reporting of multiple balanced scorecard metrics - planning, project, operational and service performance dashboards, continuity management, etc.
- Communications Management – manage expectations of customers and constituents - types and frequency of reports, graphs, comparisons, method and frequency of communications supported (e-mail, web-casts, formal reviews, other)
- Security – access control and authorization data base, etc.
- Best Practice Knowledge Management – maintain a data base of internal and external IT governance best practices and continuous improvement ideas and innovations; enable access for select constituents, etc.

On-ramps are tools that facilitate the start of as well as can be used to improve IT maturity and governance decision support activities. Depending on where an organization's strategic value disciplines are focused should determine which technology solution on-ramps become priorities. For example, if an organization is cost driven, then asset management could be one of the first on-ramps deployed. If an organization is customer driven, then demand management and portfolio investment management could become priority on-ramps. If process capability is a key driver, then either project management and/or ITIL on-ramps can be used.

CASE STUDY

The case study is of a regional financial services organization and its framework for IT governance. The issues, methodology and results by major IT governance component, lessons learned and critical success factors are identified.

Environment

- Asset range - \$25 – 40 Billion
- Business Units – Commercial Banking, Retail Banking and Wealth Management
- Number of Employees – 4,000 – 6,000
- Number of IT Employees – 200 – 400
- Very competitive industry with many mergers and consolidations
- Conservative management (risk averse)
- High use of technology for product delivery and business unit support
- CIO reports into President and CEO and is a member of the Executive Management Team

Issues and Challenges

- Align IT more closely with the business
- Increase profitability and growth
- Make IT more customer facing and focused

- Facilitate and sustain compliance requirements
- Integrate new acquisitions as seamlessly as possible.

Approach

- Adopted COBIT as the general framework to guide IT process improvements for development and operations.
- Reviewing ISO 38500 (IT Governance) for potential applicability.
- Adopted ISO 27000 framework for IT security
- Executive Capital Committee approves major investment funding in IT.
- IT Steering Committee (business and IT relationship model) establishes IT priorities, reviews progress and approves major changes
- Revised general IT principles which guide how IT is managed (e.g. trust, flexibility, security, speed, transparency [IT is transparent to business]).
- Established decision authority over major IT decisions with definitive parameters, roles and responsibilities for such items as funding approvals, architecture, security, projects
- Established a strong Project Management Office with Certification requirements

Results - Alignment

- Capital budgeting process is linked to strategic and annual operating plan for IT and business
- IT/Business Steering Committee assures a closer alignment of IT support for business
- Balanced scorecard and report card metrics are linked to critical success factors of business and IT (speed, financials, cost, performance, quality, etc.)
- Established a customer/IT engagement (single point of contact) model to improve relationships, build trust and focus on priorities
- Closer alignment is being improved continuously

Results - Program/Project Management

- Established a PMO center of excellence staffed with certified PMPs
- Developed a flexible and scalable PM process to handle agile and complex projects
- Educated and trained both IT and user community on PM best practices
- Created a booklet on, "How to Get Your IT Projects Approved"
- Significant improvement in delivering projects on time and within budget (20-30%)

Results -IT service management

- A variety of metrics and tools are used to measure the efficiency, capacity and availability, utilization and service-ability of the operations and infrastructure assets and group
- Adopted select ITIL processes.

Results - performance management & management controls

- COBIT, ISO 27000 and select ITIL processes are used as the frameworks to define, develop and deploy the IT management and security controls

- Select IT metrics are included in the company's balanced scorecard: financial
- Keep lights on spend; IT spend versus company revenues; IT spend per employee); non-financial (e.g. turnover; quality; risk mitigation index, etc.)
- Quarterly IT report card (financial; projects; production /operations, etc.

Cloud computing and data management

- Private Cloud Computing is being deployed at the company for select applications
- The issues of "data" privacy, access, security, sharing and data element dictionary are being addressed in the development of the data management policy, procedure and technology.

Strategic sourcing and outsourcing

- A centralized procurement function manages all contract
- It works closely with the procurement department on all IT vendor agreements.

Critical success factors

- Executive sponsorship is critical and support of CEO
- CIO and executive team must be proactive and provide oversight
- IT governance must be decomposed and assigned to process owners with schedules , budgets, deliverables and metrics
- Metrics should be linked to business and IT critical success factors

Lessons learned

- IT governance is a journey towards continuous improvement
- It is harder than you think and takes longer than you estimated
- The improvements in time, speed, flexible discipline, cost reduction, alignment and compliance are beneficial
- Integrating IT Governance principles and practices is not simple with new acquisitions. It takes lots of work.

SUMMARY AND IMPLICATIONS FOR THE FUTURE

IT is an integral part of most organizations today and will certainly become more integral 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.

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