Courseware Workbook
"A How To Course - Pragmatic and Actionable"

Implementing IT Governance:
A Practical Guide to World Class IT Management Using Current & Emerging Best Practices
"How to Align, Plan, Implement and Govern Information Technology Resources for Improved Competitive Advantage, Profitability and Control in Global Enterprises"

Presented to:
TCMG 533/MGMT – IT Strategy & Governance
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The contents of this workbook are based on principles and concepts described in current periodicals, books, research papers, company case studies and industry associations, as well as lessons learned from over 35 years of industry, consulting and education experience.

It leverages and integrates current and emerging industry and government best practices, standards and guidelines such as BCG, COBIT, COSO, ITIM, Six Sigma, PMBOK, Prince2, Porter, Treacy, Hamel, Weill, ITGI, PMMM, CMMI, ITIL, KANO, IAOP, ITsqc, select ISO standards and others. It is intended to be pragmatic, actionable and useable on Monday morning.

The material provides a guideline for organizations to plan, develop, deploy and sustain the IT Governance Framework and Roadmap (and its components) with the following major objectives:

- Effective strategic alignment of IT with the business or organization
- Assure the successful planning, deployment and integration of IT initiatives and services in collaboration with the business
- Establish and/or improve accountability of all constituents
- Ensure value delivery of IT
- Improve IT services, productivity, reliability, responsiveness, competency and maturity
- Measure the contributions of IT to the business by linking critical success factors to key performance indicators (KPIs)
- Facilitate regulatory compliance, documentation and reporting and lower audit costs

The material represents a living document that will undergo continuous improvement and revisions over time as new strategy and governance processes, standards, techniques, tools and metrics are developed and as gaps in the current standards and guidelines are filled. While every reasonable effort has been taken to assure the highest accuracy and quality of the material, errors or omissions may exist.

This is a "How To Course" that is pragmatic and actionable

GPS Group, Inc.

GPS Group is a marketing, information technology, strategy and program/project management consulting, research, training and management development firm that helps our clients achieve growth, competitive market advantages and organizational effectiveness through information technology, process innovation & leadership.

Strategic Marketing and Business Assessment, Plans & Strategies	Revenue Growth and Demand Generation: Market Assessment; Vision Creation; Business & Marketing Plans; New Product/Service/Business Development & Commercialization; Ideation & Leap Frog Innovation Facilitation; Market Segmentation & Positioning; Competitive Assessment & Intelligence; Best Practices Benchmarking; Customer Retention/Loyalty/Intimacy; Distribution Channels (including Electronic Commerce); Mergers, Acquisitions & Alliance Planning, Due Diligence & Operational Integration
Information Technology, IT Governance & Program/Project Assessment, Plans & Strategies	Strategic e-Business/I.T./Telecomm. Planning; I.T. and e-Business Assessment; e-Business/Systems/Network Integration & Outsourcing; RFP preparation;Outsourcing and Vendor Evaluation, Selection and Negotiations; IT Governance; Program/Project Management/PMO Assessment, Development and Implementation; e-Business/I.T./Infrastructure Development Life Cycle Management; Benchmarking
Executive, Management & Professional Seminars, Tutorials & Briefings	IT Strategy and Governance; Program/Project Management- Fast Track and Full Risk Mitigation; SDLC, IDLC, PDLC; Change Acceleration, Faster Cycle Time and Innovation; Strategic Marketing and Growth, Team Building; Leadership & Ethics; New Product Development; I.T and Telecommunications Planning and Deployment; Electronic Commerce and e-Business; Outsourcing; ITIL

GPS Group, Inc. – Select Clients

- ATMI
- Air Products and Chemicals
- Bank Generale du Luxembourg
- Bristol-Myers Squibb
- Cendant
- Cigna
- Columbia Business School
- Computer Associates
- ESPN - Disney
- First Energy (GPU)
- Fletcher Thompson
- GE Aircraft Engines
- GSA – Federal Technology Services
- Hand Held Products
- National Grid (Keyspan Energy)
- JPMorgan Chase
- Johnson & Johnson
- Lehman Brothers
- Object Edge
- People's Bank
- Purdue Pharma
- Robbins-Gioia
- Starwood Hotels & Resorts
- Syracuse University
- Sprint Nextel
- TDK Electronics, Europe
- Verizon

Select Executive, Management and Professional Briefings and Workshops

(All are grounded in current and emerging industry best practices and can be tailored in time, contents and experience levels of the audience)

- **Winning Business/IT Alignment, Strategy, Execution and Governance**
- **Enterprise Program and Project Management (Optional: 2 Day PMP Certification Exam Prep)**
- **Superior IT Service Management (including ITIL - IT Infrastructure Library)**
- **Managing Accelerating Change and Innovation**
- **Strategic Sourcing, Outsourcing and Vendor Management**
- **Strategic Marketing, Demand Creation and Revenue Growth**
- **Creating and Sustaining World Class Leaders and High Performance Global Virtual and Traditional Teams**
- **New Product Development, Venture Creation and Commercialization**
- **Business Strategy and Plan Development and Implementation**

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• 30+ years of diversified domestic/international executive, management and consulting experience with Fortune 500 and smaller organizations in general management, marketing, planning, operations, program and project management, strategic sourcing, product development and Commercialization and CIO.

• Dr. Selig is the Managing Partner of GPS Group, Inc. a marketing and technology consulting and management development firm. He is also the Director, MS Technology and Dual Graduate Business Degree Programs at the University of Bridgeport. He is a Senior Consultant to The CIO Group and TAC.

• Select clients include: ATMI, Air Products and Chemicals, Bank General of Luxembourg, Bristol-Myers Squibb, Cigna, Columbia University Graduate School of Business, Connecticut Hospital Association, Cendant, Computer Associates, ESPN, GE Aircraft Engines, GSA's Federal Technology Services, Fuji Film, IAOP, Johnson and Johnson, JPMorgan Chase, KeySpan Energy, Lehman Brothers, Nextel, Purdue Pharma, Starwood Hotels and Resorts, Syracuse University, and others.

• Dr. Selig worked for the Marketing Corporation of America, Verizon, Continental Group, Standard Kollsman Industries, CBS and AT&T in executive, management and professional positions.

• He is currently writing his third book and has authored over 50 published articles in journals and conference proceedings. He is a dynamic and popular speaker at industry and corporate conferences. He holds a Top Secret Clearance with the Federal Government.

• Dr. Selig has been a Board member of Telco Research, BIS Group, LTD. and AGS, Inc. Earned degrees from City, Columbia and Pace Universities in Economics, Engineering and Business.

Objectives

- Understand the issues, challenges and growing importance of IT governance
- Develop, deploy and sustain an effective IT governance policy, processes, tools and metrics
- Align IT investments more effectively with business plans & strategies
- Manage, evaluate, estimate, prioritize, fund, measure, assign and track requests for IT investments and services in a more consistent, repeatable and flexible manner
- Allocate IT resources to highest business value add activities (e.g. portfolio investment management)
- Establish and/or improve accountability (clearly define roles and responsibilities)
- Improve organizational performance, responsiveness, reliability, maturity, staff development and compliance
- Provide an overview of select current and emerging industry best practices & standards

Benefits of the Workshop

- Apply the lessons learned from this workshop to plan, manage, deploy and sustain an effective and robust IT Governance framework and its components
- Be exposed to select current and emerging industry and government best practices and select case studies
- Sharpen and refine your knowledge, competencies and increase your value
- Reduce stress for yourself and other stakeholders
- Understand your role in the IT Governance process, regardless of whether you are a Board member, CEO, CIO, CTO, manager or professional
- Help you achieve greater success in your work, regardless of whether you…
  - Know a lot about IT Governance
  - Know very little about IT Governance
  - Are responsible for developing, enforcing and/improving some aspect of IT Governance
- Answer as many questions as the allotted time will allow

How to Get the Most Out of This Workshop

- Keep an open mind
- Respect other's opinions and views - each of you has experiences and/or facts to share
- Participate & contribute your experiences
- Put aside other work or issues
- Please shut off cell phones and/or pagers
- All questions are welcome
- Relax and have fun

1.0 Executive Summary

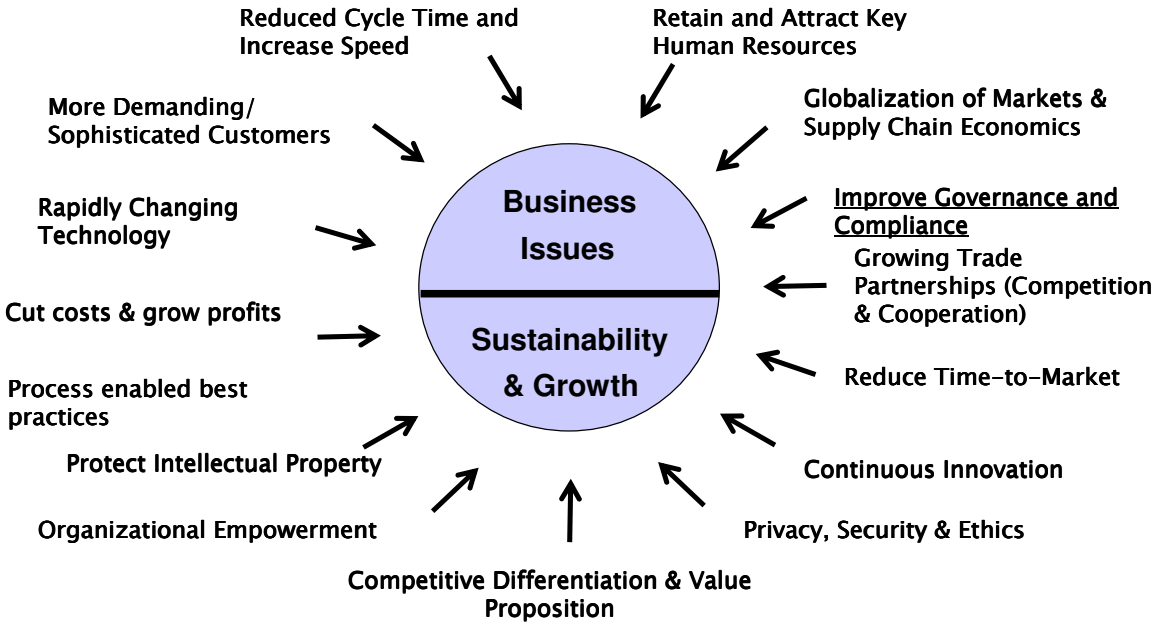
"Firms with superior IT governance had 20% higher profits than firms with poor Governance given the same strategic objectives."

Dr. Peter Weill, Director of the Center for Information Research , MIT (Based on a recent study of 250 enterprises in 23 countries)

"There is nothing more difficult to carry out, nor more doubtful of success or dangerous to handle than to initiate a new order of things."

Nicolo Machiavelli, The Prince

Today's Business Challenges - The pace of change is accelerating



" Enterprise governance constitutes the entire accountability framework of the organization."

International Federation of Accountants (IFAC)

Definition – Enterprise Governance

Enterprise governance is the set of responsibilities and practices exercised by the Board and Executive Management with the goal of providing strategic direction, ensuring that plans and objectives are achieved, assessing that risks are proactively managed and assuring that the enterprise's resources are used responsibly."

Enterprise Governance	Business Governance	IT Governance
Separation of Ownership & Control	**Direction & Control of the Business**	**Direction and Control of IT**
• Roles of Board and Executives • Regulatory Compliance • Shareholder Rights • Business Operations & Control • Financial Accounting & Reporting • Risk Management • Asset Management	• Business Strategy, Plans & Objectives • Business Processes & Activities • Innovation and Research • Intellectual Capital • Human Resource Management • Performance Metrics and Controls	• IT Strategy, Plans & Objectives • Alignment with Business Plans and Objectives • IT Assets and Resources • Demand Management • Value Delivery and Execution Management (PM and ITSMD) • Risk, Change & Performance Management

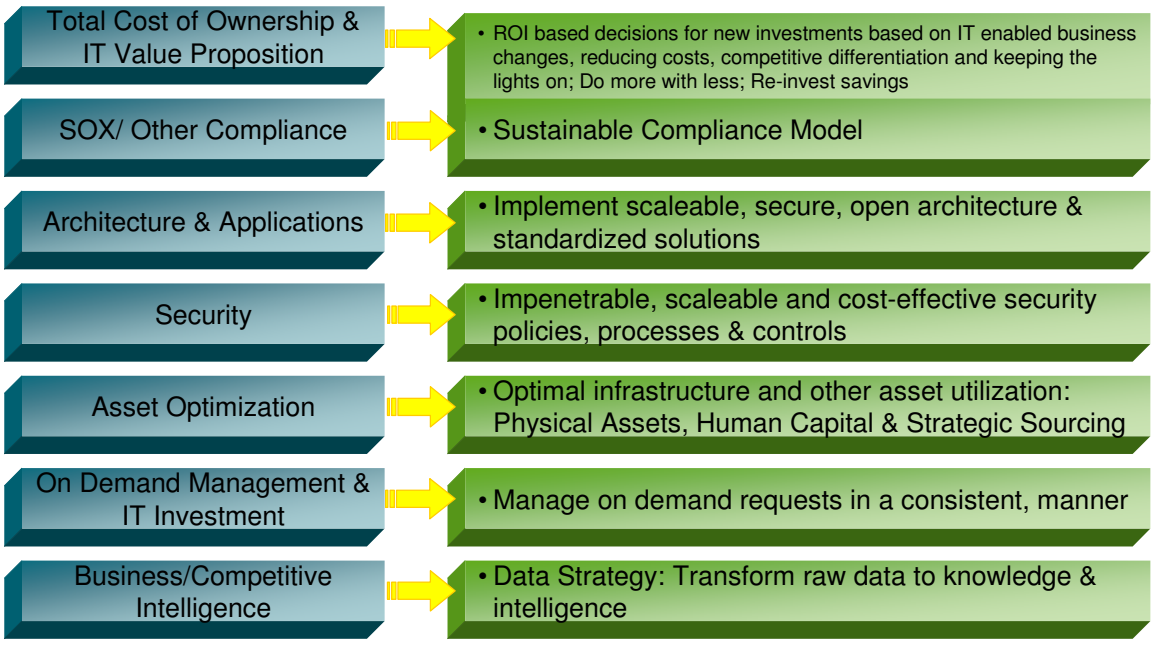
" IT Governance is the responsibility of the Board of Directors and executive management.

It is an integral part of enterprise governance and consists of the leadership and organizational structures and processes that ensure that the organization's IT sustains and extends the organizations strategies and objectives."

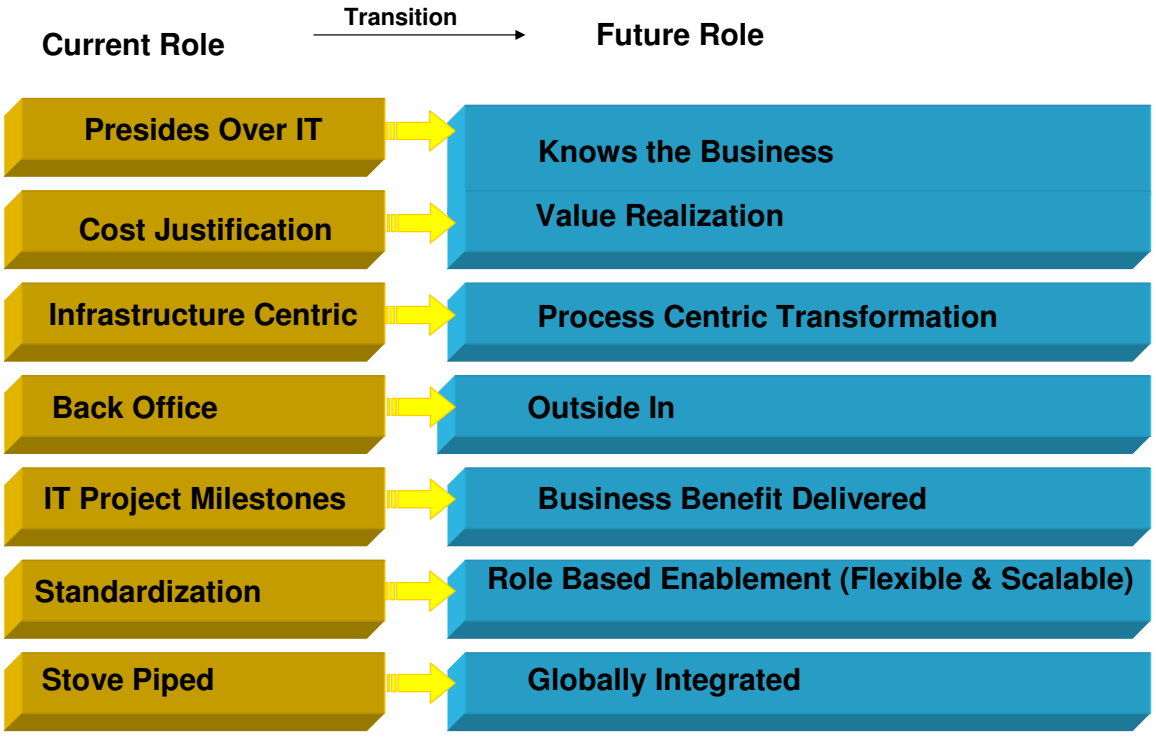
IT Governance Institute Board Briefing, Second Edition, 2003

It's the alligators you don't see that will get you.

Major IT challenges must be dealt with as part of an IT governance process

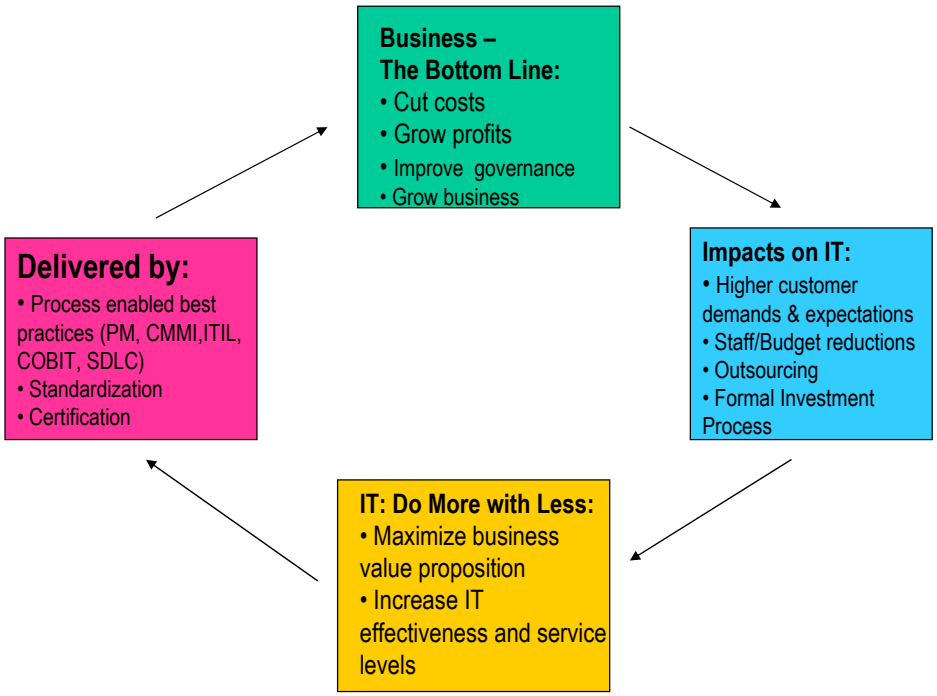


Changing Role of CIO and IT Community at IBM*



* Brian Truskowski, VP and CIO, IBM, Presentation on "Changing Role of CIO at IBM," at SIM Westchester-Fairfield County Chapter, 5/18/06

Pressures on IT – Enable business growth, support business operating environment and continuity and facilitate compliance



Getting Started – Board and Executive Questions for IT

- **Does the IT strategy align with the business strategy?**
- **Is the IT investment justified based on its contributions to the business?**
- **How likely will IT meet or exceed its plans, objectives and initiatives?**
- **Is IT being managed prudent, effectively? How is that measured?**
- **How is IT delivering value?**
- **Is IT developing and maintaining constructive relationships with customers, vendors and others?**
- **Is IT delivering projects and services on time, within scope, within budget and with high quality?**
- **Is IT staffed adequately, wit the right skills and competencies?**
- **Is IT compliant?**
- **How does IT management and operations compare to other best practice organizations?**
- **How is IT managing and planning for contingencies, disasters, security, and back-up?**
- **How is IT measuring its performance? What key performance measures?**
- **How effectively is IT communicating its progress and problems to its constituents?**
- **What controls and documentation have been instituted in IT? Are they sufficient?**
- **Does the Board review and possibly approve the IT strategy?**
- **Is a risk management policy, assessment and mitigation practice followed for IT?**

Definition of Governance:

Governance formalizes and clarifies oversight, accountability and decision rights. It is a collection of management, planning and performance review policies, practices and processes with associated decision rights, which establish controls and performance metrics over investments, plans, commitments and compliance with laws and organizational policies.

Purpose of IT Governance:

- **Align IT investments and priorities more closely with the business**
- Manage, evaluate, prioritize, fund, measure and monitor requests for IT services and the resulting work and deliverables, **in a more consistent and repeatable manner** that optimize returns to the business
- Responsible utilization of resources and assets
- **Establish and clarifies accountability and decision rights (clearly defines roles and authority)**
- **Ensures that IT delivers on its plans, budgets and commitments**
- **Manages risks, change and contingencies proactively**
- Improve IT organizational performance, compliance, maturity and staff development
- **Improve VOC, demand management** and overall customer and constituent responsiveness

Who Benefits from More Effective and Sustainable IT Governance? ALL!

- What Executives Get
  - Business improvements that result from knowledgeable participation in IT decision-making from an enterprise perspective
  - Ensures that key IT investments support the business and provide optimum returns to the business
  - Ensures compliance with laws regulations
- What Mid-Level Business Managers Get
  - Convinces senior business managers that their combined business -IT resources are being managed effectively
  - Helps to communicate with peers in IT to ensure that business services for which they are responsible will meet commitments
- What Senior IT Managers Get
  - Obtains sponsorship and support and a clear focus on important strategic and operational initiatives
  - Improves customer relationships by delivering results in a more predictable and consistent manner, with the involvement of the customer
- What Program/Project and Operations Managers Get
  - Helps in resolving issues, review progress and, enable faster decisions
- What Everyone Gets
  - Facilitates communications about how IT contributes to the business
  - Improves coordination, cooperation, communications and synergy across the organization
  - Less stress

Key Components of Managing Large Scale Change Successfully

- **Engage the Top and Lead the Change**
  - Create the "Value Proposition" & Market the Case for Change
  - Committed Leadership
  - Develop a Plan and Ensure Consequence Management
- **Cascade Down and Across the Organization & Break Down Barriers/Silos**
  - Create Cross-Functional and Global Teams (where appropriate)
  - Compete on "Speed"
  - Ensure a Performance Driven Approach
- **Mobilize the Organization and Create Ownership**
  - Role Out Change Initiative
  - Measure Results of Change (Pre-Change versus Post-Change Baselines)
  - Embrace Continuous Learning, Knowledge and Best Practice Sharing
- **Attributes of Effective Change Teams and Agents**
  - Strong and focused Leader
  - Credibility and Authority (Charter) to Lead the Initiative
  - "Chutzpa", Persistent and Change Zealots
  - Ability to Demonstrate and Communicate "Early Wins" to build the momentum
  - Create a Sense of Urgency and Avoid Stagnation
  - Knock Obstacles Out of the Way, Diplomatically or Otherwise

Value Propositions for Governance from Best-in-Class Companies*

- **Lowers cost** of operations by accomplishing more work consistently in less time and with fewer resources without sacrificing quality **(GM)**
- Provides **better control & more consistent approach to governance, prioritization, development funding and operations (Kodak)**
- Develops a **better working relationship and communications with the customer (Nortel)**
- Provides for a **consistent process for more effectively tracking progress**, solving problems, escalating issues and gate reviews **(Cigna)**
- Aligns initiatives and investments more directly with **business strategy (GE)**
- **Improves governance, communications, visibility & risk mitigation** for all constituents (Robbins Gioia)
- **Facilitates business & regulatory compliance** with documentation & **traceability** as evidence **(Purdue Pharma)**
- **Increases** our **customer satisfaction by listening proactively to the customers (Lucent)**
- **Reuse of consistent & repeatable processes** helps to **reduce time and costs & speeds up higher quality deliverables (IBM)**

* Based on primary & secondary current and emerging best practice research conducted by GPS Group, Inc.

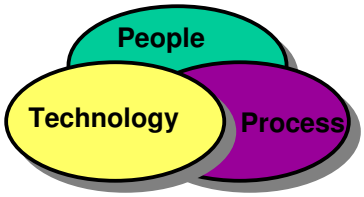
"Firms with superior IT governance had 20% higher profits than firms with poor Governance given the same strategic objectives." Dr. Peter Weill, Director of the Center for Information Research , MIT (Based on a recent study of 250 enterprises in 23 countries)

Successful IT Governance Is Built on Three Critical Pillars

- **Leadership, Organization, Decision Rights and Metrics – defines the organization structure, roles and responsibilities, decision rights, a shared vision and meaningful metrics.**

- **Flexible and Scalable Processes – the IT governance model places heavy emphasis on the importance of process implementation and improvement.**

- **Enabling Technology – Leverage leading tools that support the key IT governance components.**



Results of Ineffective IT Governance Can Be Devastating

• Business losses and disruptions, damaged reputations and weakened competitive positions (Nike lost an estimated $200 million while running into difficulties installing a supply chain software system)*

• Schedules not met, higher costs, poorer quality, unsatisfied customers

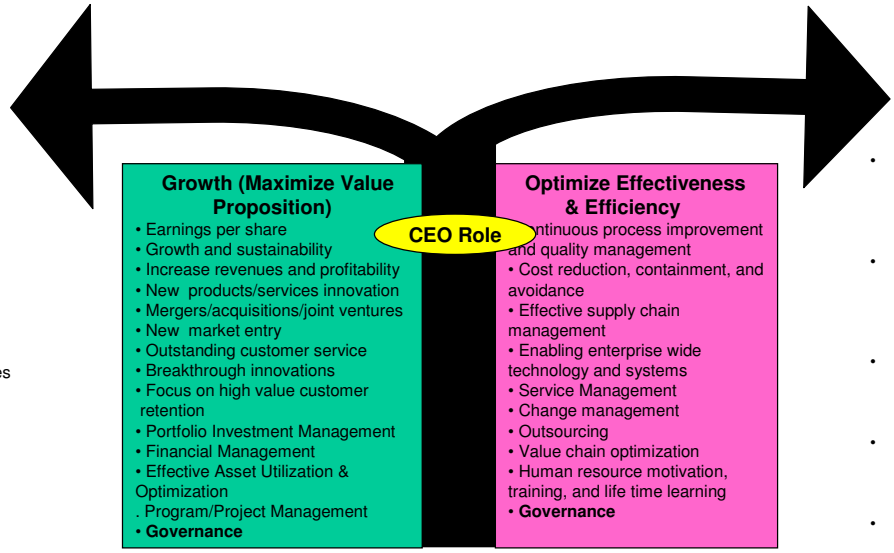
• Core business processes are negatively impacted (e.g. SAP impacts many critical business processes) by poor quality of IT deliverables (An operational meltdown of the Southern Pacific-Union Pacific merger was traced largely to the inability to co-ordinate their IT systems)*

• Failure of IT to demonstrate its investment benefits or value propositions

*Source: IT Governance Institute, "The CEO's Guide to IT Value and Risk," 2006.

Linking the CEO Role in Achieving Business Growth, Improving Profitability and Creating an Effective Governance Environment

Executing enterprise-wide strategic initiatives & effective business operations is a complex undertaking that requires a balance between growth, effectiveness and efficiency



Critical Success Enablers include: superior leadership skills and motivated change agents, flexible and scalable processes, pragmatic and realistic metrics, a clear governance policy and structure and the use enabling technologies.

How Much Governance is Required? (When is enough, enough?)

Depends on a number of factors:

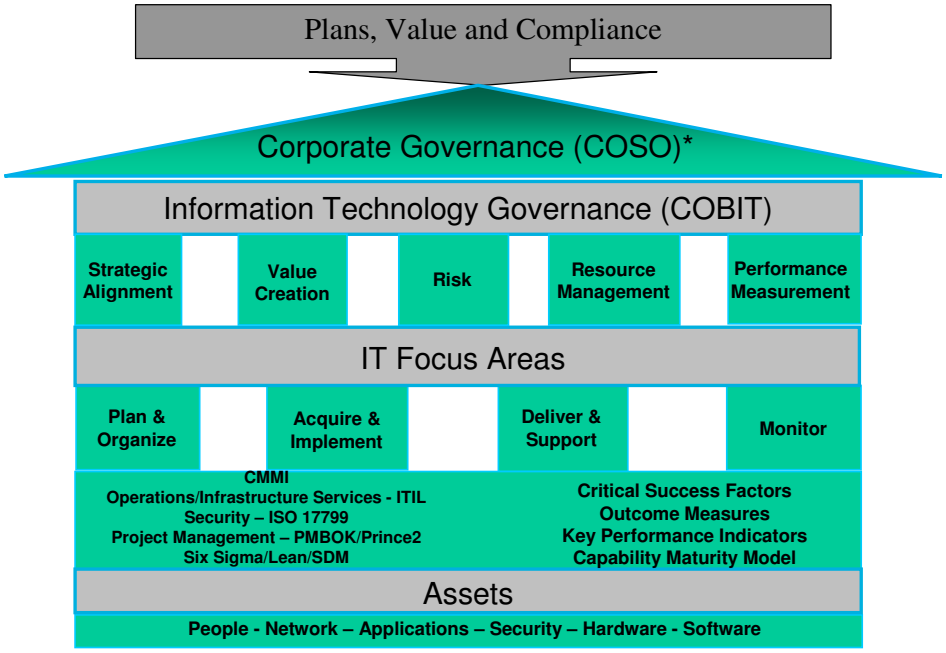
- **Investment $ (capital and expense) criticality to the organization (mission critical)**
- Degree of business dependency on technology
- **Strategic corporate value proposition and alternatives for focus** (e.g. growth centric, customer centric, process centric, cost centric, etc.)
- Management philosophy and policy (e.g. (e.g. first mover versus follower)
- Program/Project and/or Operational importance
- **Complexity, scope, size and duration of initiative**
- Number of interfaces and integration requirements with business
- **Degree of risk and potential impact (of doing or not doing)**
- Number of organizations, departments, locations and resources involved
- Customer or sponsor requirements
- **Regulatory, legal, control, audit and documentation compliance required**
- Degree of accountability desired and required
- **Level of security required or desired**

Key IT Governance Strategy & Resource Decisions*

- **IT Principles –** High level statements about how IT is used in the business (e.g. scale, simplify and integrate; reduce TCO and self fund by re-investing savings; invest in customer facing systems; reengineer business and IT processes, strategic plan directions, PMO, etc.).
- **IT Architecture –** Organizing logic for data, applications and infrastructure captured in a set of policies, relationships, processes, standards and technical choices to achieve desired business and technical integration and standardization.
- **IT Infrastructure –** Centrally coordinated, shared IT services that provide the foundation for the enterprise's IT capability.
- **Business Application Needs –** Specifying the business need for purchased or internally developed IT applications.
- **IT Investment and Prioritization –** Decisions about how much and where to invest in IT (e.g. capital and expense), including development projects, infrastructure, security, people, etc.)
- **People (Human Capital) Development –** Decisions about how to develop and maintain IT leadership, management and technical skills and competencies (e.g. how much and where to spend on training and development, certification, etc.).
- **IT Governance Policies, Processes, Mechanisms and Metrics –** Decisions on composition and roles of Steering Groups, Advisory Councils, Technical and Architecture Committees, Project Teams; Key Performance Indicators (KPIs); Chargeback Alternatives; Performance Reporting, etc.

* Source: Modified from P. Weill & J. Ross, IT Governance, HBS Press, 2004

IT Governance Framework – Based on Current & Emerging Industry Best Practice Frameworks & Standards



*COSO – Committee of Sponsoring Organization of the Treadway Commission –Formed in 1985 to address fraudulent financial practices of public companies.

Executive Summary

Integrated IT Governance Framework & Roadmap – Grounded in Industry Best Practice Research and Required to Plan, Develop, Deploy & Sustain a Cost Effective Approach to IT Governance

- The **Integrated Governance Framework** consists of a composite of five (5) critical IT governance imperatives (which leverage best practice models) and address the following work areas:

  - Business Plan and Objectives (Demand Management)
  - IT Plan and Objectives (Demand Management)
  - IT Plan Execution (Execution Management)
  - Performance Management and Management Controls (Execution Management & Compliance)
  - Vendor Management and Outsourcing Management (Execution Management)
  - People Development and Continuous Process Improvement.

- For each IT governance imperative, a description of the key components are provided which should result in consistent, repeatable, end-to-end and measurable processes

Integrated IT Governance Framework & Roadmap

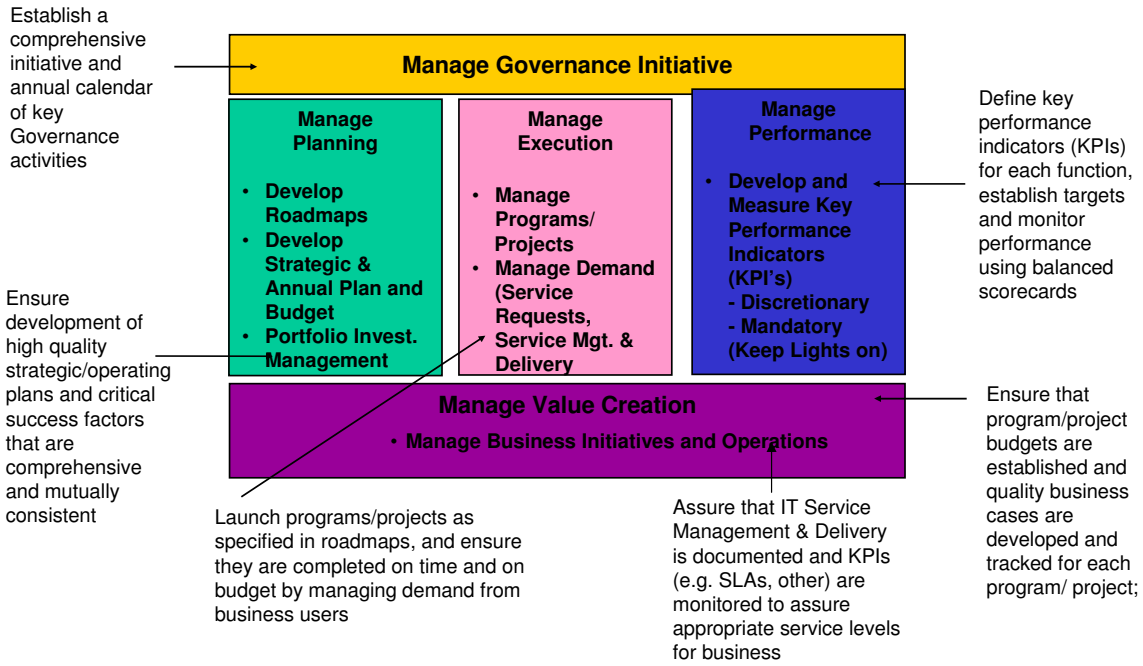
Identifies the major areas that must be addressed on the journey to a higher level of IT governance maturity and effectiveness

Areas of Work	Description/Components	Deliverables/ References
Business Plan/ Objectives (Demand Management & Alignment)	• Strategic Business Plan – Vision, Objectives, Financials, Operations, SWOT, Imperatives (Must Do's), Initiatives (Alternatives that Support Imperatives), etc. • Capital Planning/Expense Planning & Budgeting • Business Performance Management (Key Metrics) • Executive and Other Steering & Review Councils; Organization Structure	• Plan Document • Financials • Balanced Scorecard Metrics • BCG; Porter; Hamel
IT Plan, Objectives, Portfolio Investment and Approvals (Demand Management & Alignment)	• IT Plan is aligned with the Business Plan – IT Capital/Expense Budget • IT portfolio investment, rationalization, selection, prioritization, funding and approval (Portfolio Management Model (for New, Change Programs and Projects and/or Operational and Infrastructure Functions) • Fund major • IT Performance Management (Define Metrics and Measurement Criteria)	• IT Strategic/Tactical Plan/Metrics • Portfolio Mgt. Model (Investment Criteria); ITIM • Engagement Model - Roles • Business Rules & Authorization • McFarlan, Cash; Luftman; Popper; Selig
IT Plan Execution & Delivery (Resource & Execution Management)	• Program, Project and Operating Plans (Capital Plans, Project Plans and Budgets) • Policies, Standards, Guidelines & Processes (e.g. Management Control, Enterprise Architecture, Security, PMO, ITIL, etc.) • Processes (PMO, Help Desk, Security, Administrative SOPs, Workflows, Change, Risk, etc.) • Financial, program, project, application, maintenance and operational accountability	• Assess Implications of PMMM, PMBOK, CMMI, ITIL, SDLC, CoBit, Security (ISO 17799), Prince2 ,eSCM Frameworks • Infrastructure & Operational Integrity, Continuity & Security
Performance Management, Controls, Risk, Compliance and Vendor Management (Execution Management	• Manage and measure plans, budgets programs, projects, operations & risks • Define and track key performance indicators (KPI) • Compare plans to actuals and take appropriate corrective actions • Outsourcing and Vendor Selection, Tracking, Measurement • Business and IT Continuity, Security, Contingency and Disaster Recovery	• Balanced Scorecard & KPIs • Performance Management • RFI, RFQ, RFP and Contract Management; IAOP, ITesq • Sarbanes-Oxley ++ Compliance • Management Controls/COBIT
People Development , Continuous Process Improvement & Learning	• Human capital development • Organizational, Project & Operational Maturity Models and Standards • Managing Change and Transformation (e.g. culture, interoperability) • Training and Certification (e.g. Individual and Organization)	• Adopt Current and Emerging Industry and Government Best Practices Standards & Guidelines • PCMM; OMB 300; ISO; ITIM • Career Development and Certification

Key Work Breakdown Areas for IT Governance

Executive Summary

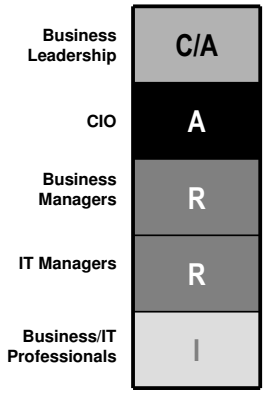
The IT Governance Initiative must be decomposed into manageable and accountable work packages and deliverables and assigned to owners for planning, development, execution and continuous improvement



Key Roles & Responsibilities – IT Governance

Executive Summary

The IT Governance Initiative must have Clearly Defined Roles, Responsibilities and Decision Rights for the Entire Initiative and for Each Major Component of the Integrated IT Governance Framework and Roadmap



Comments / Rationale

- Business Leads sponsor, approve and monitor governance plan, direction, investments, roadmap, deliverables and major changes
- CIO assumes accountability to deliver the IT Governance Roadmap and Related Components – Alignment; Planning; Program/Project Management: IT Service Management & Delivery and Performance Management
- Business Managers assume responsibility for their roles in IT Governance (e.g. Define Requirements, Approve Projects, Process/application ownership, Review progress, Approve Deliverables and Implementation
- IT Managers assume responsibility to develop, deploy and sustain their part of the IT Governance roadmap (e.g. Alignment. Portfolio Investments, Programs, Projects and Service Management & Delivery)
- Professionals informed of governance initiative and what is expected of them

A Approve — The individual who is ultimately accountable for a decision or action; includes yes/no and power of veto. Only one accountable person is assigned to a task.

R Responsible — Individuals who perform a task (doer responsible for execution / action). The degree of responsibility is defined by the accountable person. Responsibilities can be shared.

C Consulted / Participated — Individuals to be consulted prior to a final decision or action being taken. Two way communication.

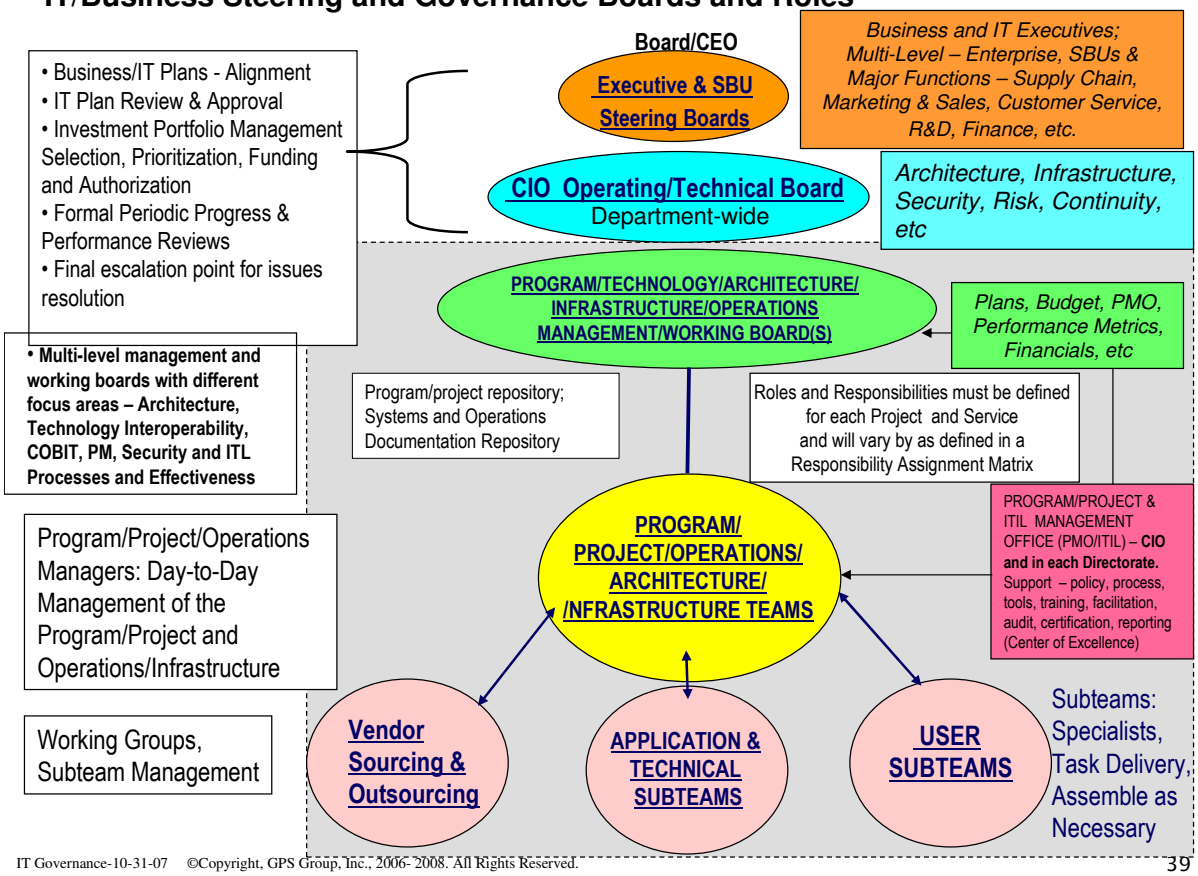
I Informed — Individuals to be informed after a decision or action is taken.

IT Governance – Decision Rights (Illustrative Example)

A Decisions Rights Matrix identifying Decision Influencers and Decision Makers is Necessary to Clarify Decision Roles and Authority Levels for the major IT Governance Components

IT Governance Component	Input to Decision	Decision Authority	Comments/Examples (Varies by Organization)
IT Principles (High value statements about how IT will be used to create business value)	Business Units	IT Senior Leadership Group & CIO; Executive Officer Group	• Scale, simplify, integrate • Reduce cost of IT & self fund • Re-engineer/consitent processes • Invest in customer facing systems • Investment $ Threshold Approvals • Key Performance Indicators/CSFs
IT Investment, Plan, Prioritization, Critical Success Factors and Key Performance Indicators (KPIs)	Business Units	IT Steering Committee (ITSC) (Business & IT Executives); Projects over $500K:	• ITSC recommends priority to CEO for any projects requiring over $500K • Identify, track and measure critical success factors and associated KPIs
Business Applications	Business Units and Corporate Functional Unit Heads	IT Steering Committee	Significant business application spend must be approved during the annual budget process, and if over $500K, approved by ITSC
IT Infrastructure and Architecture	IT Steering Committee	IT Architecture/Technology Review Board (and Business Units (for related applications)	Significant infrastructure spend must be approved during the annual budget process, and if over $500K, approved by ITSC.
Outsourcing & Vendor Management +++ Others	IT Steering Committee + Business Units	Senior leadership (Depends on scope)	Significant outsourcing initiative should be recommended by ITSC & approved by Executive officer Group

IT/Business Steering and Governance Boards and Roles



Illustrative Executive Steering Committee Charter – Why and What? *Executive Summary*

Why?

- Helps to ensure alignment across all of X's businesses. It is recognized that the demand for IT resources will exceed available resources/budget and establishing X's wide priorities is essential.
- Provides forum for investment decision making which is synchronized with the business.
- Builds an enterprise view and helps to eliminate stovepipe systems, processes, and duplication of efforts across X.

What (Charter)?

- To review and approve plans, strategies and major programs/projects and establish priorities among competing requests for resources to ensure that everyone is aligned on those initiatives with highest "value add" to X as a whole.
- To establish and support processes where needed to effectively fulfill the charge outlined in (1) above.
- To conduct formal periodic reviews of major initiatives

Illustrative Business/IT Executive (Operating) Steering Committee Charter – Why and What? (Cont'd)

Roles and Responsibilities

- Review & approve overall IT plans
- Review, prioritize, approve major ATMI IT Investments
- Conduct Formal Periodic Project Progress & Performance Reviews
- Final Escalation Point for Major IT/Business Issues Resolution
- Support and sponsor IT Governance policy and process improvement programs impacting the Executive Steering Board membership organizations and help deploy them in their organizations

Frequency of Meetings

- Monthly initially, unless it is determined that more frequent or less frequent meetings are needed

Other Steering & Working Committees

- Since successful IT Governance requires multi-level participation, we plan on establishing additional Business/IT Steering and Working Committees at the Business Unit Level (e.g. Packaging & Materials), as well as major functional areas such as Supply Chain Management, Global Financials, Marketing and Sales, R & D and others as necessary

IT Demand Management – Classifications (Illustrative Example) Exhibit 6

IT Demand Management Generally Comes in Several Flavors – Mandatory and Discretionary – Both should be identified and resourced in the IT Strategic and Operating Plan and Budgets - If they are not in the plan, each request should be evaluated on its own merits against consistent alignment, investment and service criteria. A steady state (normalized and repeatable) service could be included in a service catalogue.

Classification	Type of Request or Demand Mgt.	Comments/Description
Mandatory (Business Enablement)	**Service Interruption (Break & Fix)**	A problem caused the disruption of IT service and must be fixed and restored as soon as possible
	Maintenance	Scheduled maintenance must be performed to keep applications and infrastructure operating efficiently
	Keep the Lights On and Legal/Regulatory	The costs and resources required to support the basic steady state operations of the business, including some components of infrastructure
Discretionary* (Require ROI)	**Major New/Change (Complex) Initiatives (Full Risk Mitigation)**	Complex new initiatives or major changes (major enhancements or modifications) to systems, processes or infrastructure and provide new or additional functionality or capacity
	Fast Track (New/Change) (Simple or Limited Scope)	Simple new initiatives and minor changes that do not required the rigor and discipline of a complex initiative and be fast tracked.
	Standard (Repetitive) Request	Describe product/ service (functions, features and price and place in a product/service catalogue)
Strategic	**Major initiative – Realistic ROI may not be doable – too early; however, TCO & TBR may apply**	A strategic initiative may fall into several categories – first market mover (new product or service); R & D; competitive advantage, etc.

*Note: Criteria for differentiating between complex or fast track initiatives or service catalogue listings will vary for each organization.

Strategic Questions* - Are we doing the right thing? Is the Investment:

- **In line with our business vision?**
- **Consistent with our business principles, plan and direction?**
- **Contributing to our strategic objectives and sustainable competitive differentiation?**
- **Providing optimum value at an acceptable level of risk?**

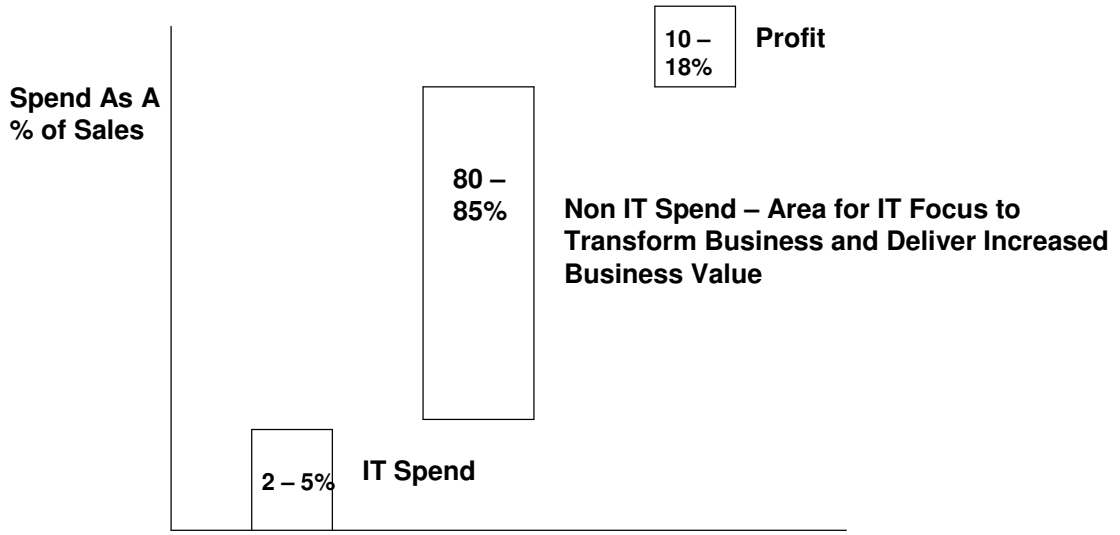
Value Questions – Are we getting the benefits?

- **A clear and shared understanding and commitment to achieve the expected benefits.**
- **Clear accountability for achieving the benefits which should be linked to MBOs and incentive compensation schemes.**
- **Relevant and meaningful metrics.**
- **An effective benefits realization process and sign-off.**

Delivery and Execution Questions – Are we deploying well and effectively?

- Scalable, disciplined and consistent management, governance & delivery processes
- Appropriate and sufficient resources available with the right competencies, capabilities and attitudes

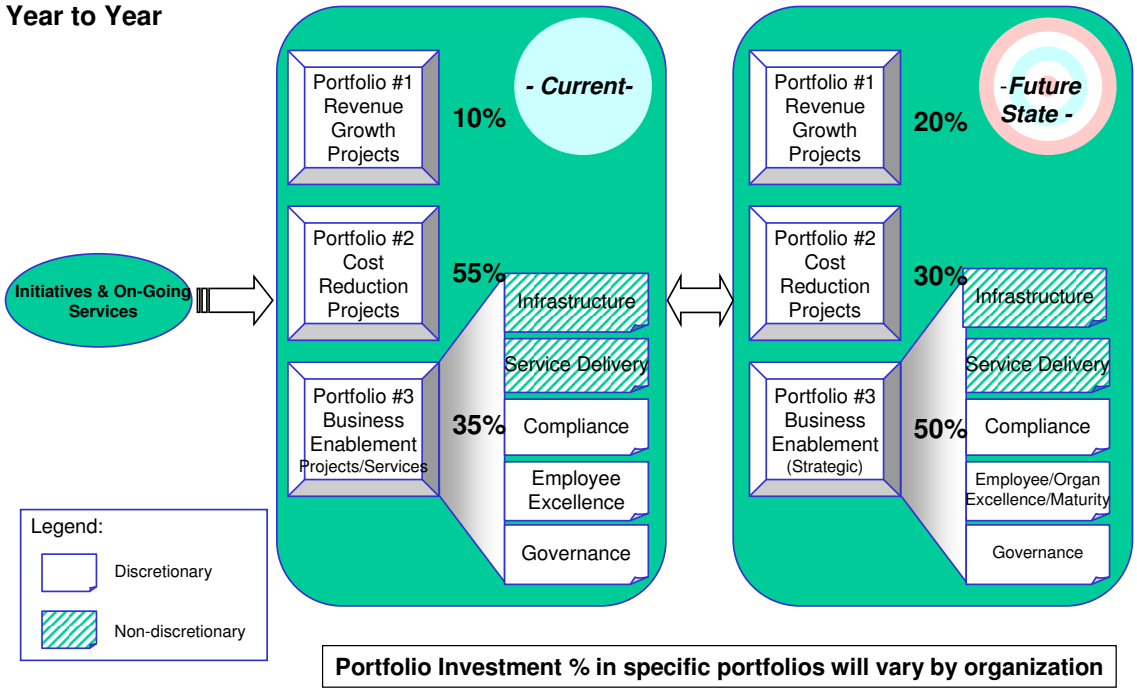
Non-IT Spend on Business Process Transformation Represents a Much Greater Opportunity for IT to Deliver Real Value for an Organization



*** Brian Truskowski, VP and CIO, IBM, Presentation on "Changing Role of CIO at IBM," at SIM Westchester-Fairfield County Chapter, 5/18/06**

Strategic IT Investment Alternatives (Illustrative Example)

IT Investment Management Portfolio Alternatives Consist of Discretionary (Optional), Strategic and Mandatory (Keep the Lights ON) Requirements and the Amount of Investment % in Each Portfolio Should be Driven by Business Needs and Will Change from Year to Year



Portfolio Investment % in specific portfolios will vary by organization

Select Balanced Score Card Metrics for Business and IT Governance Executive Summary

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.

Link Business to IT Metrics

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))
* Modified from Kaplan and Norten, 2001

Compliance: Increasingly Important and Complex

Executive Summary

- Fair and Accurate Transaction Act of 2003
- California Breach Notice Law SB-1386 2003
- **Sarbanes-Oxley Act of 2002**
- USA PATRIOT Act of 2001
- Gramm-Leach-Bliley Act of 1999
- Health Insurance Portability and Accountability Act (HIPAA) of 1996
- EU Data Protection Directive, October 1995
- Telemarketing Sales Rule (includes Do Not Call) 1995
- Telephone Consumer Protection Act of 1991
- Foreign Corrupt Practices Act of 1977
- Fair Credit Reporting Act 1971
- Securities and Exchange Act of 1934
- FDA, FCC, EPA, HSA, etc.

Key Objectives of the Sarbanes-Oxley Act

Executive Summary

The massive investor losses at Enron, Tyco and Worldcom were attributed to the most senior executives – the CEO and CFO

- Consequently, CEOs & CFOs are now legally responsible for their actions and violations are criminal acts

- **Broaden sanctions/penalties**
  - Criminal penalties strengthened when management issues false financial reports
- **Improve reporting/disclosures**
  - New requirement to report on internal control – Section 404
- **Heighten auditor independence**
  - Certain services can no longer be performed by auditors
- **Strengthen corporate governance**
  - New standards for audit committee practices
- **Expand insider accountability**
  - New requirements for code of ethics and protection for whistleblowers
- **Increase oversight**
  - Creation of PCAOB
  - Increased SEC review of company filings on 10-K/10-Q

Sarbanes-Oxley Act of 2002

Key Section's of the Sarbanes-Oxley Act

Section 302: Corporate Responsibility for Financial Reports The first phase of Sarbanes-Oxley took effect in the fall of 2003. Section 302, **requires CFOs and CEOs to personally certify and attest to the accuracy of their companies' financial results**.

Section 404: Management Assessment of Internal Controls, the **most urgent IT challenge for SOX compliance** is found within Section 404, which requires auditors to certify the underlying IT controls and processes companies need to ensure accurate financial reporting at three levels*:

- **General Computer Controls –** addresses the overall IT control environment in which financially significant systems operate
- **Application Controls –** address specific controls within a financially significant application.
- **End User Controls –** (also known as spreadsheets) – involves any tools such as Access, Excel, etc., where users manipulate or process financially significant information.

Section 409: Real-Time Issuer Disclosures - The most difficult aspect of Sarbanes -Oxley compliance, is still planned for the **future**. It calls for real-time reporting of material events that could affect a company's financial performance. The time-sensitive aspect of this regulation will likely put significant pressure on existing IT infrastructures and data management activities.

***Source: Gail Benson, Director, Risk Management, Fiondella, Milone and La Saracina, LLP, 3/06.**

SAS 70 Reports – Type I versus Type II

SAS 70 Type I

Independent auditor reviews a description of internal controls and assesses whether those controls, as described, would be effective and may be relied upon

Design Only No Testing

SAS 70 Type II

The auditor must provide the same opinion as a Type I and then test the internal controls and assess whether the controls in use were, in fact, effective and may be relied upon

Design and Testing

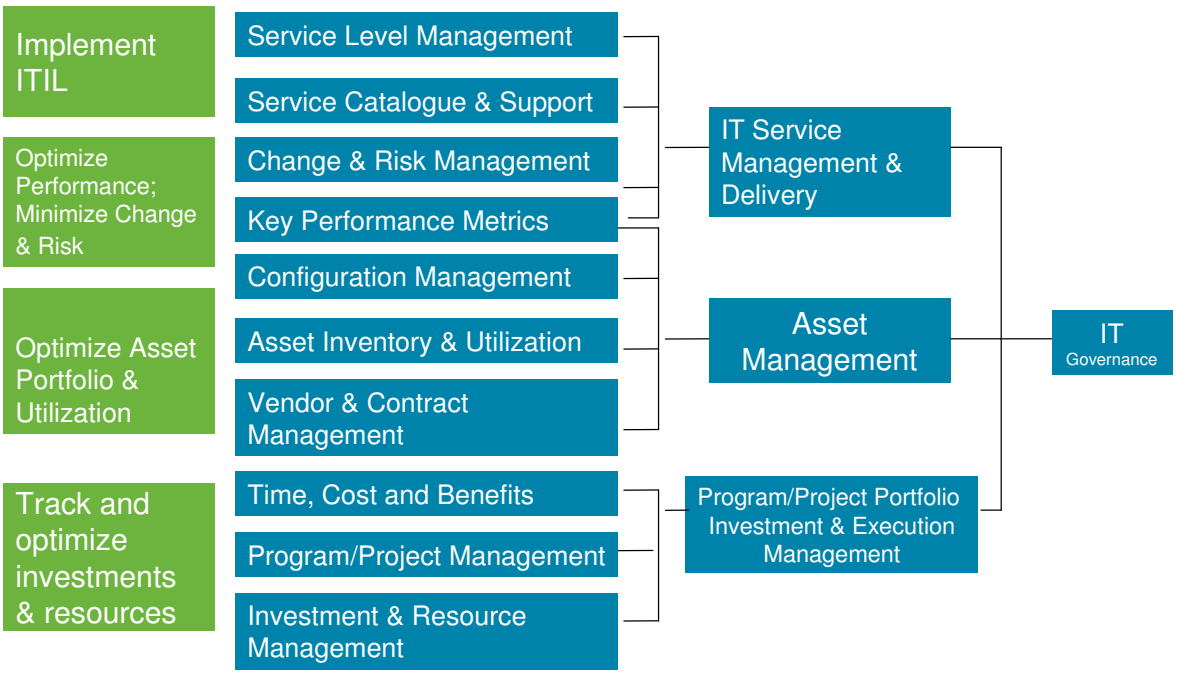
Select Implications of the Sarbanes-Oxley Act on IT

Executive Summary

- **Improve financial reporting/disclosures**
  - New requirement to report on internal controls for financial statements – Section 404
- **Expand insider accountability**
  - New requirements for code of ethics and protection for whistleblowers
- **The external auditors can insist that any gaps in IT controls be addressed before an overall opinion is reached on the effectiveness of the internal company controls.**
- **Requires a backup for all "financially significant files, storage of those files and periodic restoration of backup files."**
- **Requires IT change management tracking and documentation for financial systems.**
- **Requires the maintenance of logs for user access to financial data bases, security logs, administrative logs, problem and incident logs as well as an independent review of the logs to detect any activities that could adversely impact the financials.**
- **Requires systems documentation and verification that data is properly handed off from one system to another.**

Select Technology & Process Solution Enablers to Improve IT Governance (Illustrative Example)

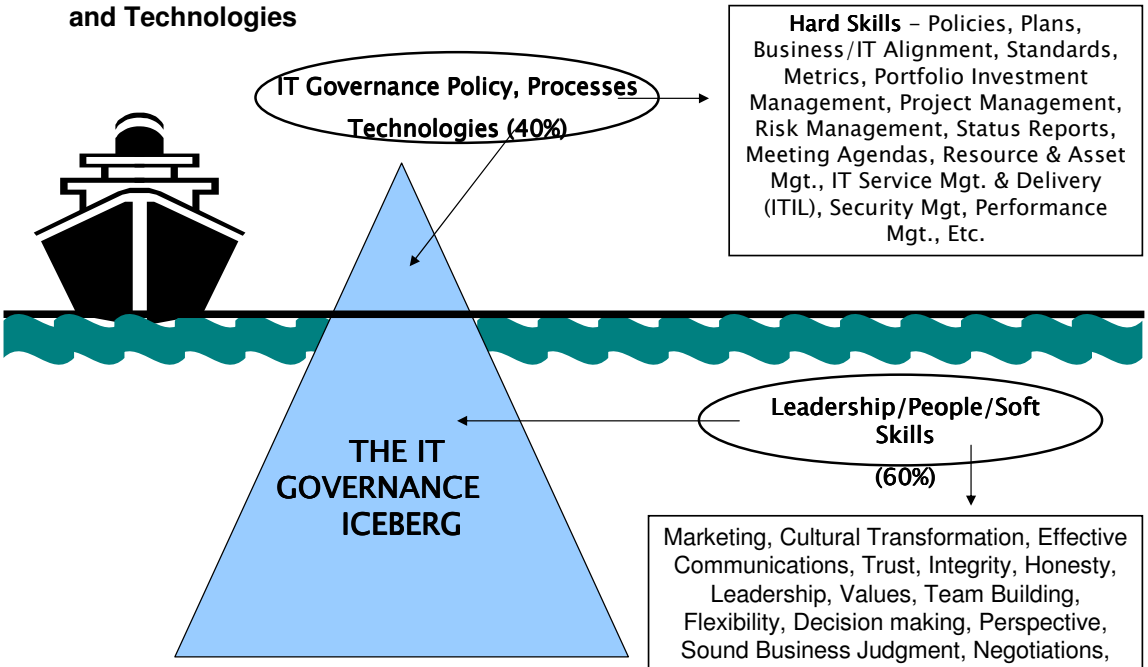
Both Process and Technology Solutions are Necessary To Manage and Sustain Cost Effective IT Governance Decision Support and To Achieve Higher Levels of IT Maturity



- **Treat the implementation initiative as program or project with a series of phases with timetables and deliverables**
- **Remember that implementation requires cultural change and transformation, which requires:**
  - **Marketing of the value proposition**
  - **Manage culture change and transformation**
  - **Obtain executive management buy-in and ownership**
- **Manage expectations of all constituents – IT Governance takes time and represents a series of continuous improvement processes**
- **Demonstrate measurable and incremental improvements in the IT Governance environment and communicate them**

Essentials Skills and Competencies Required for IT Governance *Executive Summary*

The Success of IT Governance is more often determined by Leadership, People Skills and Managing Cultural Transformation well than by Policies, Procedures, Processes and Technologies



Key Leadership Principles for Creating and Sustaining a Successful IT Governance Culture and Environment

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

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

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

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

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

Steps in Making the IT Governance Real and Sustainable

• **Must have a corporate mandate fro the top - the Board and the Executive Leadership Team are committed** to implementing and sustaining a robust Governance environment

• Must have dedicated and available resources - identify **Executive Champion** and **Multi-Disciplinary Team** (to focus on each IT Governance component)

• **Do Homework** – Educate yourself on past, current and emerging best practices

• **Market the benefits and communicate the IT governance value proposition to the organization**

• **Develop a tailored IT governance framework and roadmap for your organization based on current and emerging industry best practices**

• Assess the "**current state**" of the **level IT governance maturity (decompose into its major components)**, using a leading industry best practice framework such as CMMI

Steps in Making the IT Governance Real and Sustainable (Cont'd)

- Develop a **"future state"** IT governance **blueprint** (**where you want to be**) &

keep it i

- **Decompose the IT Governance components into well defined work packages &**

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- Develop an **IT Governance action plan, identify deliverables**, establish priorities, milestones & allocate resources
- **Sponsor organizational and individual certifications in the IT Governance component areas**, where they are available (e.g. PMP, ITIL, IT Security, IT Audit, BCP, Outsourcing, etc.)
- Identify **enabling technologies** to support the IT Governance initiatives
- Establish a "Web Portal" to access IT Governance policies, processes, information and communication wins
- Plan for and sustain IT governance process improvements and link to a reward structure. Create a "Continuous IT Governance Improvement group to sustain the framework

A First Step - Assess Current Maturity of IT Governance

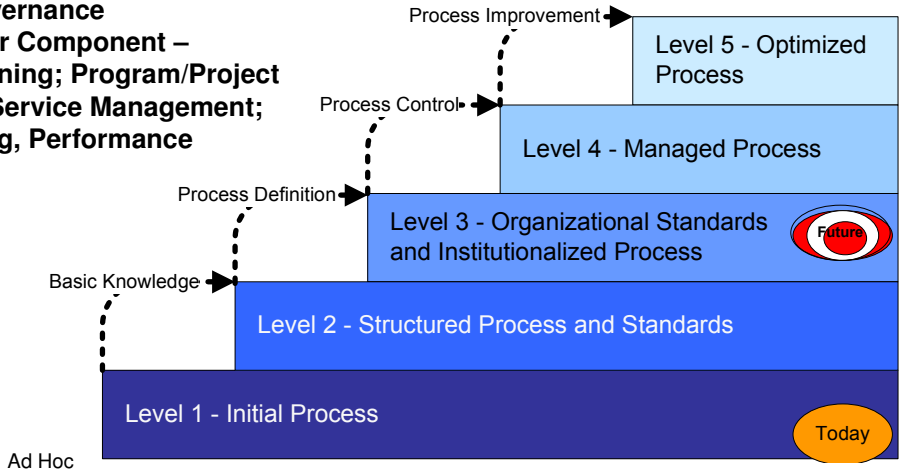
Use an industry best practice – CMMI - framework to analyze current and target state maturity levels for each IT governance component:

1. **Initial Level**: The IT governance process is characterized as ad hoc and occasionally even chaotic, Few processes are defined and success depends on individual efforts.
2. **Repeatable Level**: Basic IT governance processes are established. The necessary discipline are in place to repeat earlier successes.
3. **Defined Level:** The It governance processes are documented, standardized, and integrated into the management policies and procedures. All governance processes are implemented using approved, tailored versions of the IT governance policy.
4. **Managed Level:** Define, collect and make decisions based on each IT governance component's measurements. IT governance processes and metrics are quantitatively understood, reported and controlled.
5. **Optimizing Level:** Continuous process improvement is enabled by quantitative feedback from the process, from piloting innovative ideas and from adopting external industry best practices and standards.

High Level Assessment of Current Level of IT Governance Maturity and Future Target State

Illustrates an Organization's Current and Future Targeted State of IT Governance Maturity. All Organizations Require a Roadmap and Plan to Move Up to Higher Levels of Maturity and Effectiveness

CMMI Model or Equivalent Can Be Used to Assess Stage or Level of IT Governance Maturity (By Major Component – Alignment & Planning; Program/Project Management; IT Service Management; Strategic Sourcing, Performance Management, etc.



IT/Business Alignment Maturity Assessment Model * -

Relates IT/Business alignment criteria to assist enterprises to evaluate their level of maturity and set a direction to improve, in six areas.

Level 5 •Optimized process
- •COMMUNICATIONS: Informal, pervasive
- •COMPETENCY/VALUE: Extended to external partners
- •GOVERNANCE: Integrated across the org & partners
- •PARTNERSHIP: IT-business co-adaptive/improvisational
- •ARCHITECTURE: Evolve with partners
- •SKILLS: Education/careers/rewards across the organization

Level 4 •Improved/ managed process
- •COMMUNICATIONS: Bonding, unified
- •COMPETENCY/VALUE: Cost effective;Some partner value;Dashboard managed
- •GOVERNANCE: Managed across the organization
- •PARTNERSHIP: IT enables/drives business strategy
- •ARCHITECTURE: Integrated with partners
- •SKILLS: Shared risk & rewards

Level 3 •Established focused process
- •COMMUNICATIONS: Good understanding; Emerging relaxed
- •COMPETENCY/VALUE: Some cost effectiveness; Dashboard established
- •GOVERNANCE: Relevant process across the organization
- •PARTNERSHIP: IT seen as an asset; Process driver;Conflict seen as creative
- •ARCHITECTURE: Integrated across the organization
- •SKILLS: Emerging value service provider;Balanced tech & business hiring

Level 2 •Committed process
- •COMMUNICATIONS: Limited business/IT understanding
- •COMPETENCY/VALUE: Functional cost efficiency
- •GOVERNANCE: Tactical at Functional level,occasional responsive
- •PARTNERSHIP: IT emerging as an asset; Process enabler
- •ARCHITECTURE: Transaction (e.g., ESS, DSS)
- •SKILLS: Differs across functional organizations

Level 1 •Initial/Ad-Hoc process
- •COMMUNICATIONS: Business/IT lack understanding
- •COMPETENCY/VALUE: Some technical measurements
- •GOVERNANCE: No formal process,cost center, reactive priorities
- •PARTNERSHIP: Conflict; IT a cost of doing business
- •ARCHITECTURE: Traditional (e.g., acctng, email)
- •SKILLS: IT takes risk, little reward; Technical training

*Source: Luftman

IT Governance Maturity – Self Assessment Model

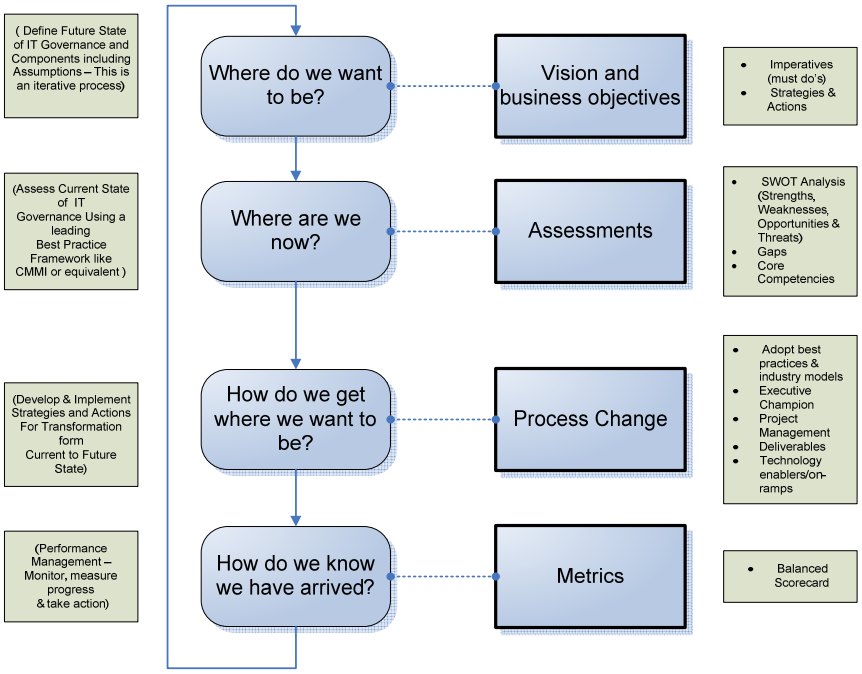
The template can be used to assess the level of IT Governance and its major component, process, maturity and effectiveness (1=low; 5=high).

Additional IT Governance components from COBIT, ISO 17799 or others may be added across the horizontal axis as required.

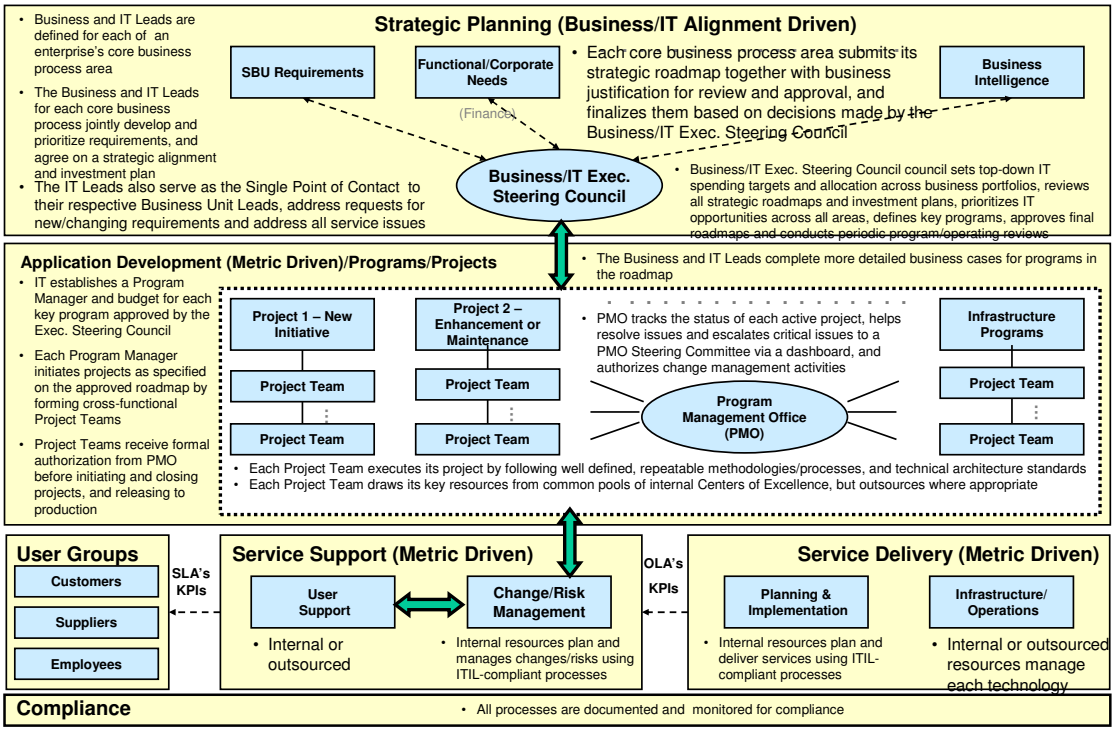
Maturity	Attributes	Values																				
Level 5	• Optimized process																					
	• Metrics driven process improvements																					
Level 4	• Process managed and used by all																					
Level 3	• Enterprise wide process and standards																					
Level 2	• Basic 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	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	Other
		Demand Management and Alignment				Execution Management							Performance Management and Controls					People Development and Learning				

IT Governance – Current & Future State Transformation Flow

IT Governance Process Improvement Flow - In order to develop and/or improve a governance process (business or IT), an organization must assess its current & future IT governance state and develop a plan to transform IT.

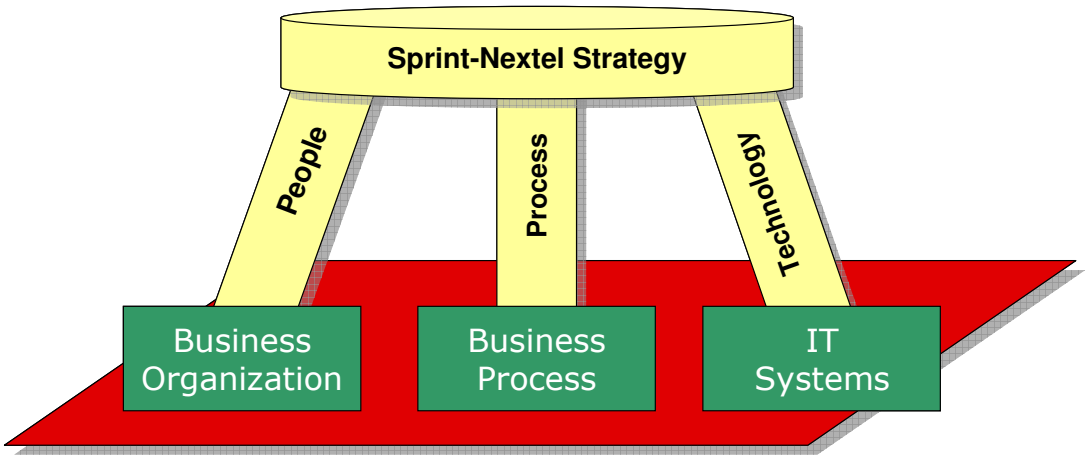


Future State IT Governance - A Blueprint Concept (Illustrative Example) *Executive Summary*

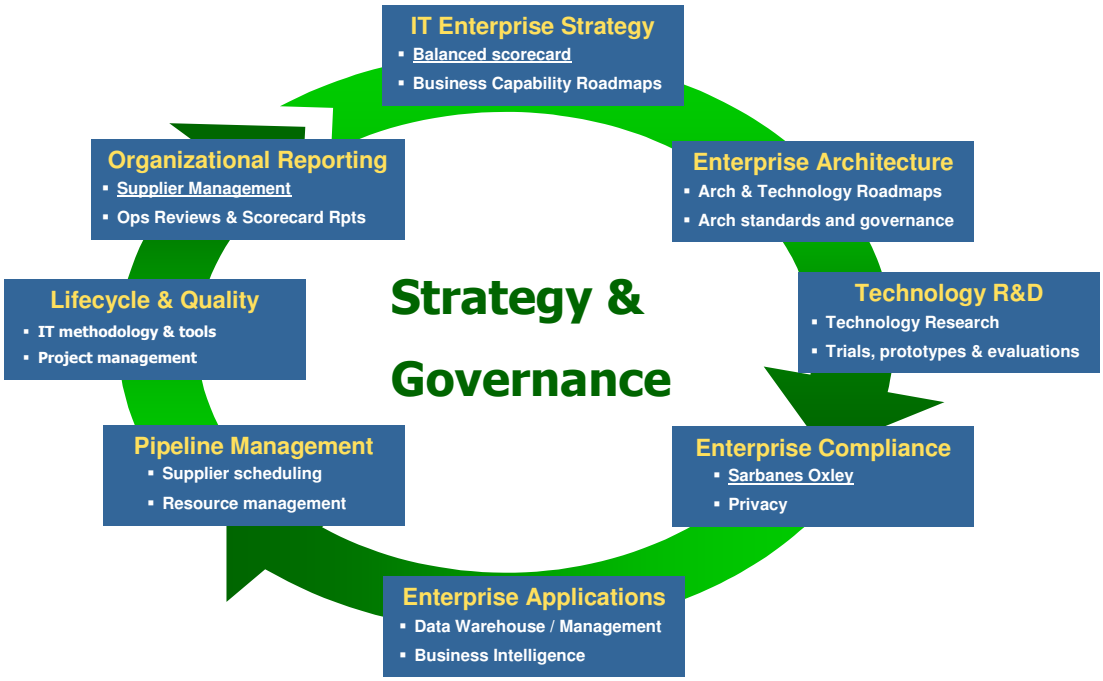


IT Alignment and Governance Example (Illustrative Example)

Mission: Run IT Like a Business



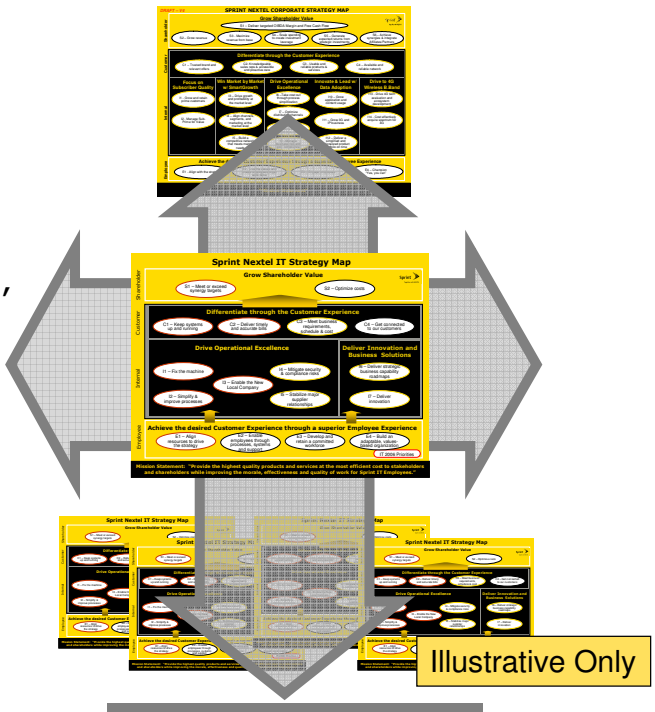
IT Governance - How It Works



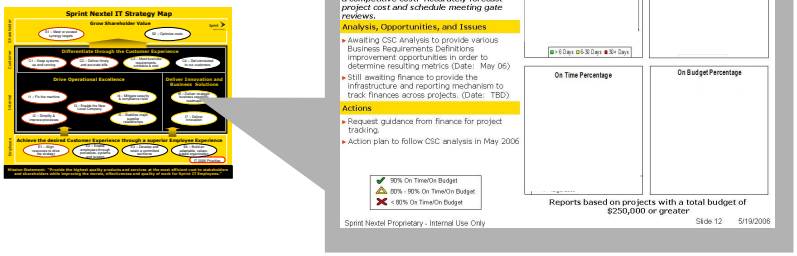
Balanced Scorecard

The IT Balance Scorecard

- Supports the Enterprise Balanced Scorecard
- Aligns with IT customers' Balanced Scorecards
- Cascades down to IT VP level Scorecards
- Is directly tied to individual performance objectives

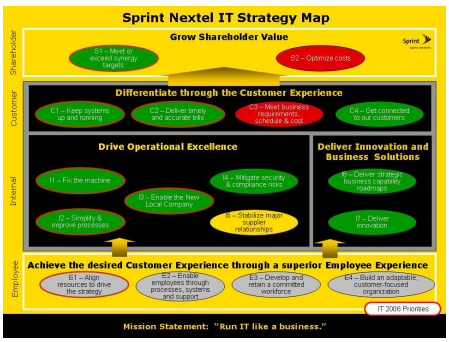


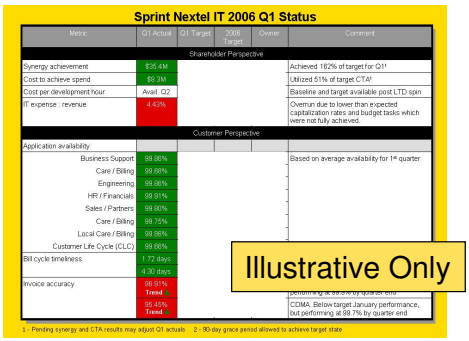
Monthly SmartCards for each objective



- Objective
- Owner
- Metrics
- Targets
- Status
- Actions required

Quarterly Scorecard





Illustrative Only

Global Consumer Goods Organization

Environment	**Approach**
• Annual Revenue range - $ 6 - 10 Billion • Number of Employees – 40,000 – 50,000 • Number of IT Employees – 1,200 – 2,000 • IT spend as a % of revenues – 2 – 3% • Very competitive industry with operations in 50 - 70 countries • Brand management driven with strong focus on marketing and sales • CIO reports to CEO and is a member of the Executive Management Team • Company is transitioning from a decentralized environment to a more coordinated regional & global management environment to take advantage of operating synergies	• Company has been moving towards a more coordinated global and regional operating environment by establishing various steering committees that focus on the specific functional/process areas such as Supply Chain, Marketing and IT to assist in working and creating synergies across global regions Senior IT management representatives are members of each of the key business councils • Recently, IT is establishing a strategic planning process, which will link to the portfolio investment process, capital and expense budget process and program/project execution process • IT established a global architecture group to coordinate consistent hardware and software (e.g Operating Systems, Major Application Packages, etc.)
Issues and Challenges • IT strategic plan process is new & not yet linked to annual operating plan & budget •IT has many disparate applications, operating systems and hardware inherited from a historical decentralized environment that is slow and difficult to change. Global IT consistency is a challenge • Tensions of a matrix organization – Regional IT Managers report into regional business heads with dotted line to CIO	• Established a strong Project Management Office, which is in the process of developing a uniform and consistent process which will be rolled out globally across all regions in a coordinated and collaborative manner

Global Consumer Goods Organization

Results - Alignment

•CIO sits on the Executive Management Operating Council and is an equal peer/partner with business & assures a closer alignment of IT support for business

• A 3 year financial plan is developed for IT, about 50% is dedicated to supporting the business unit applications (charged back) and 50% to infrastructure and keeping the lights on

• IT portfolio investment management is a rolling process & identifies IT capital spend by geography and functions. It is prioritized based on discretionary and mandatory criteria with top down and bottom up input

• Balanced scorecard and report card metrics are linked to critical success factors of business and IT(financials, cost, performance, quality, etc.)

• Established an customer/IT engagement (single point of contact) model to improve relationships, build trust and focus on priorities of major business functions

Results -IT Service Management & Delivery

• 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

• Elements of ITIL processes have been and are being implemented in the IT operations and infrastructure area

• The IT infrastructure (Operations and Telecommunications) are centralized through the CIO organizations with strong dotted line coordination throughout the globe

Results - Program/Project Management

• Established a PMO center of excellence

• Developing a flexible and scalable PM process to handle fast track and complex projects

•Implementing a global Portfolio/Project Management tool (Nikku)

Global Consumer Goods Organization

Results - Performance Management & Management Controls

• Select IT metrics are included in the IT monthly status report (e.g. key line items designated as green, yellow and red)

• An annual user satisfaction survey is conducted by IT measuring 8 areas of IT delivery: communications, responsiveness, up-time, alignment, business process transformation, IT process transformation (streamline IT process), project, relationship mgt. and application support

• A monthly Serbanes Oxley report is issued & tracks a number of required categories

• A narrative IT annual report is issued reporting news, strategies ,etc.

Lessons Learned

• IT governance is a journey towards continuous improvement

• Cultural and organizational transformation is difficult, but necessary to survive

• Involve local, regional and corporate management employees in direction setting and execution initiatives in a spirit of cooperation, communications, trust and partnership

• Establish global centers of excellence (located in multiple regions) for IT and let them lead by example: Web/e-business, Core center applications, Infrastructure, PMO/SDLC, Enterprise Data Architecture, Advanced Technology, Etc.

IT Mission & Key Management Principles – Consumer Goods

IT Mission

- **Enable business growth**
- **Advance Business Transformation**
- **Increase the productivity of associates and Sales Representatives**
- **Support our global operating model**

Growth Enablers

Maintain a deep understanding of our business

- Anticipate business needs
- Proactively identify how information and technology can drive the direct selling business model
- Partner with the business to implement "hard to do" transformation
- Leverage our cross-functional and cross-geography view

Achieve business alignment

- IT strategy in step with business strategy
- Forge strong relationships with business partners
- Communicate early, frequently and simply
- Ensure IT talent is aligned with growth strategies

Deliver contemporary business solutions

- Champion integration and collaboration
- Reduce the number of solutions while supporting business differences across markets
- Provide information for business decision making
- Affordable and suitable alternatives

Operational Levers

Lead through process discipline

- Comply fully with our project management and software development methodologies
- Adhere to IT Governance policies and procedures
- Ensure adequate controls and KPIs
- Sponsor appropriate certifications

Provide the best value

- Implement make vs. buy decisions that deliver speed, competitive advantage, affordability
- Leverage worldwide IT resources
- Effectively manage services and assets

Maintain Service Excellence

- Systems are reliable and available to optimize revenue and representative service
- The enterprise is secure, controlled and protected
- Disciplined problem, change & risk management

Summary

- IT governance is a broad and complex topic with many parts
- IT governance represents a journey - It is not a one time event and to achieve higher levels of IT maturity, IT governance should be persistently and relentlessly pursued both from a top down and a bottom up perspective
- Creating and sustaining a more effective IT governance environment will take time and money and should be focused on achieving incremental IT governance deliverables
- Clearly defined roles, ownership and accountability is essential for success
- IT governance requires three pillars to succeed:
  - Leadership, organization and people
  - Consistent, but scalable and flexible policies and processes
  - Enabling technologies

2.0 Integrated IT Governance Framework and Roadmap

• There are a growing number of models and frameworks that **address one or more aspects of either** business and/or IT Governance. There are few that integrate the components necessary to plan, develop and deploy a comprehensive IT Governance Framework and Roadmap to help guide an organization process improvement initiatives in this area.

• Some organizations use the COBIT (Control Objectives for Information and Related Technologies), but it does not focus on IT/Business Alignment or performance or outsourcing and is very control oriented. Others approach the problem from a security perspective and use ISO 17799 and ISO 27001 as a framework. Efforts are being made to correlate COBIT with ITIL, ISO 17799/ISO27001, CMMI, Prince2, PMBOK and other frameworks. Still others focus on strategic sourcing and are using ITsqc and the IAOP frameworks.

• The integrated IT Governance Framework and Roadmap proposed in this section includes the above frameworks plus additional ones that are very relevant to improving IT governance maturity and effectiveness.

Objectives

• Introduce an Integrated IT Governance Framework and Roadmap

• Provide an overview of select examples of current and emerging industry (vendor independent) best practice frameworks, maturity models and standards

• Identify the prerequisites for successful IT governance

• Identify the parameters that should determine how much IT governance is required

Most of today's IT models/frameworks/standards only address one or a limited number of components that must be an integral part of a comprehensive IT Governance Framework. Many of current models are being used in industry and should be understood, leveraged, integrated and/or referenced. These should be used to develop an integrated approach to IT Governance.

Benefits of Using an Integrated IT Governance Framework Leveraging Current and Emerging Best Practices Models, Frameworks and Standards

- Grounded in industry best practice research and experience
- Improve trust, credibility and confidence
- Overcome vertical silos and avoid re-inventing wheels
- Faster Acceptance
- Better Resource Utilization (Reduce, contain and/or avoid costs) based on standards
- Improve Customer Satisfaction and Responsiveness
- Common Terminology
- Clear Accountability
- Consistent, Repeatable, End-to-End, Measurable Processes
- Accelerated deployment (do not have to re-invent the wheel)

Integrated IT Governance Framework & Roadmap - Required to Plan, Develop, Deploy & Sustain an Effective Governance Policy and Process

- The **Integrated Governance Framework** consists of a composite of five (5) critical IT governance imperatives (which leverage best practice models) and address the following work areas:
  - Business Plan and Objectives (Demand Management)
  - IT Plan and Objectives (Demand Management)
  - IT Plan Execution (Execution and Resource Management –includes PM/PMO, ITSMD/ITIL, etc.)
  - Performance Management and Monitoring and Management Controls
  - Strategic Sourcing, Outsourcing and Vendor Management
  - People Development, Learning and Continuous Process Improvement
- For each IT governance imperative, a description of the components are provided as well as the deliverables and appropriate best practice model, frameworks and standard references
- An overview of select best practice models critical to IT Governance is provided

Integrated IT Governance Framework & Roadmap

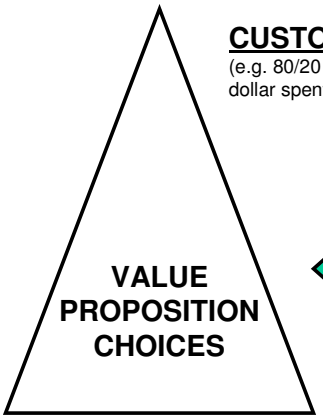
Identifies the major areas that must be addressed on the journey to a higher level of IT governance maturity and effectiveness

Areas of Work	Description/Components	Deliverables/ References
Business Plan/ Objectives (Demand Management & Alignment)	• Strategic Business Plan – Vision, Objectives, Financials, Operations, SWOT, Imperatives (Must Do's), Initiatives (Alternatives that Support Imperatives), etc. • Capital Planning/Expense Planning & Budgeting • Business Performance Management (Key Metrics) • Executive and Other Steering & Review Councils; Organization Structure	• Plan Document • Financials • Balanced Scorecard Metrics • BCG; Porter; Hamel
IT Plan, Objectives, Portfolio Investment and Approvals (Demand Management & Alignment)	• IT Plan is aligned with the Business Plan – IT Capital/Expense Budget • IT portfolio investment, rationalization, selection, prioritization, funding and approval (Portfolio Management Model (for New, Change Programs and Projects and/or Operational and Infrastructure Functions) • Fund major • IT Performance Management (Define Metrics and Measurement Criteria)	• IT Strategic/Tactical Plan/Metrics • Portfolio Mgt. Model (Investment Criteria); ITIM • Engagement Model - Roles • Business Rules & Authorization • McFarlan, Cash; Luftman; Popper; Selig
IT Plan Execution & Delivery (Resource & Execution Management)	• Program, Project and Operating Plans (Capital Plans, Project Plans and Budgets) • Policies, Standards, Guidelines & Processes (e.g. Management Control, Enterprise Architecture, Security, PMO, ITIL, etc.) • Processes (PMO, Help Desk, Security, Administrative SOPs, Workflows, Change, Risk, etc.) • Financial, program, project, application, maintenance and operational accountability	• Assess Implications of PMMM, PMBOK, CMMI, ITIL, SDLC, CoBit, Security (ISO 17799), Prince2 ,eSCM Frameworks • Infrastructure & Operational Integrity, Continuity & Security
Performance Management, Controls, Risk, Compliance and Vendor Management (Execution Management	• Manage and measure plans, budgets programs, projects, operations & risks • Define and track key performance indicators (KPI) • Compare plans to actuals and take appropriate corrective actions • Outsourcing and Vendor Selection, Tracking, Measurement • Business and IT Continuity, Security, Contingency and Disaster Recovery	• Balanced Scorecard & KPIs • Performance Management • RFI, RFQ, RFP and Contract Management; IAOP, ITesq • Sarbanes-Oxley ++ Compliance • Management Controls/COBIT
People Development , Continuous Process Improvement & Learning	• Human capital development • Organizational, Project & Operational Maturity Models and Standards • Managing Change and Transformation (e.g. culture, interoperability) • Training and Certification (e.g. Individual and Organization)	• Adopt Current and Emerging Industry and Government Best Practices Standards & Guidelines • PCMM; OMB 300; ISO; ITIM • Career Development and Certification

Lessons from a Business Strategist

Strategic Corporate Value Propositions - Alternatives For Focus*

(Effective Use of IT Can Enable – Innovation, Growth, Profitability, Asset Management, Cost Control and Customer Satisfaction)



CUSTOMER INTIMACY
(e.g. 80/20 rule; % of repeat customers; % of customer dollar spent; exceptional customer service, etc.)

***A COMPANY CANNOT BE ALL THINGS TO ALL PEOPLE - PICK ONE & EXCELL. COMPETE IN THE OTHER TWO.**

OPERATIONAL EXCELLENCE (LOW COST)
(e.g. 6 Sigma, CMMI, PMMM, ISO 9000, Outsourcing; ROI,ROA))

PRODUCT LEADERSHIP
(e.g. Innovation, Speed to Market; Growth -% Change in Revenue, ROI

* Source: M.Treacy & F. Wiersema, "Customer Intimacy & Other Value Disciplines," Harvard Business Review, January-February, 2003.

1-9b

Figure 2.6 – PMI's Knowledge Areas (PMBOK)

Nine Knowledge Areas + 5 Process Areas*

Project Management Knowledge Areas

4 Project Integration Mgt.
4.1 Develop Project Charter
4.2 Develop Preliminary Scope
4.3 Develop Project Mgt. Plan
4.4 Direct & Manage Project Execution
4.5 Monitor & Control Project Work
4.6 Integrated Change Control
4.7 Close Project

5 Project Scope Management
5.1 Scope Planning
5.2 Scope Definition
5.3 Create WBS
5.4 Scope Verification
5.5 Scope Control

6 Project Time Management
6.1 Activity Definition
6.2 Activity Sequencing
6.3 Activity Resource Estimating
6.4 Activity Duration Estimating
6.5 Schedule Development
6.6 Schedule Control

7 Project Cost Management
7.1 Cost Estimating
7.2 Cost Budgeting
7.3 Cost Control

8 Project Quality Management
8.1 Quality Planning
8.2 Perform Quality Assurance
8.3 Perform Quality Control

9 Project Human Resource Management
9.1 Human Resource Planning
9.2 Acquire Project Team
9.3 Develop Project Team
9.4 Manage Project Team

10 Project Communications Management
10.1 Communications Planning
10.2 Information Distribution
10.3 Performance Reporting
10.4 Manage Stakeholders

11 Project Risk Management
11.1 Risk Management Planning
11.2 Risk Identification
11.3 Qualitative Risk Analysis
11.4 Quantitative Risk Analysis
11.5 Risk Response Planning
11.6 Risk Monitoring and Control

12 Project Procurement Management
12.1 Plan Purchasing & Acquisitions
12.2 Contracting Plan
12.3 Request Seller Responses
12.4 Select Sellers
12.5 Contract Administration
12.6 Contract Closure

***5 PM Processes: Initiation, Planning, Execution, Control and Closure (Termination)**

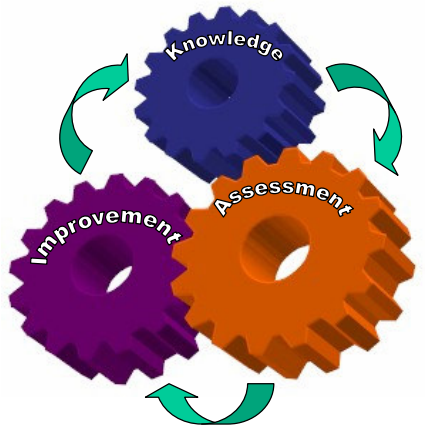
PMI's Organizational Project Management Maturity Model (OPM3)

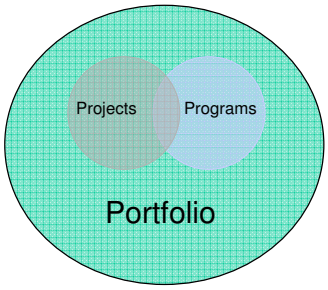
Overview: PMI's OPM3 is a guideline comprised of three key elements that are intended to help organizations self assess their PM organizational capabilities and improve their level of PM maturity.

Knowledge Element – Describes organization project management maturity, explains why it is important and how maturity can be recognized.

Assessment Element - Identifies methods, processes and procedures that an organization can use to self-assess its PM maturity.

Improvement Element – Provides a process for moving an organization from its current level of maturity to higher levels of maturity. OPM3 is not an organization certification framework, but represents a continuous improvement process.





***Source; Project Management Institute**

PMMM (Project Management Maturity Model) – Blends PMI's PMBOK 9 knowledge areas with SEI's CMMI'S 5 (Software Engineering Institute's Capabilities Maturity Model Integrated) levels of maturity and enables organizations to self-asses their project management capabilities in the PMBOK areas at any given level and focus on identified activities that would help to achieve continuous improvements up the PM maturity ladder.

- PMMM represents a 5-level project management maturity model developed by PM Solutions, Inc. which integrates:
- PMI's PMBOK 9 Knowledge Areas with SEI's 5 Levels of Maturity
  - Level 1 – Initial Process
  - Level 2 – Structured Process and Standards
  - Level 3 – Organizational Standards and Institutionalized process
  - Level 4 – Managed Process
  - Level 5 – Optimized Process
- PMMM identifies a well defined and easy to use road map to improve organizational PM maturity
- PMMM enables an organization to assess its project management capabilities in the PMBOK knowledge areas at any given level.

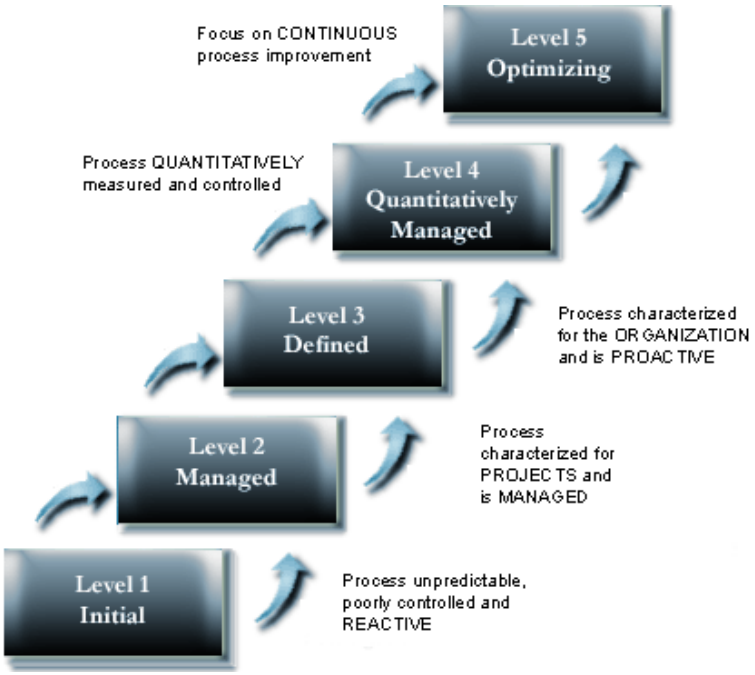
Maps PMI's 9 PMBOK Knowledge Areas with SEI's Level Maturity Model

Levels of Project Management Maturity	Level 1 **Initial Process**	Level 2 **Structured Process and Standards**	Level 3 **Organizational Standards and Institutionalized Process**	Level 4 **Managed Process**	Level 5 **Optimized Process**
Project Integration Management	No established practices, standards, or Project Office. Work performed in ad hoc fashion.	Basic, documented processes for project planning and reporting. Management only involved on high-visibility projects.	Project integration efforts institutionalized with procedures and standards. Project Office beginning to integrate project data.	Processes/standards utilized by all projects and integrated with other corporate processes/systems. Decisions based on performance metrics.	Project integration improvement procedures utilized. Lessons learned regularly examined and used to improve documented processes.
Project Scope Management	General statement of business requirements. Little/no scope management or documentation. Management aware of key milestones only.	Basic scope management process in place. Scope management techniques regularly applied on larger, more visible projects.	Full project management process documented and utilized by most projects. Stakeholders actively participating in scope decisions.	Project management processes used on all projects. Projects managed and evaluated in light of other projects.	Effectiveness and efficiency metrics drive project scope decisions by appropriate levels of management. Focus on high utilization of value.
Project Time Management	No established planning or scheduling standards. Lack of documentation makes it difficult to achieve repeatable project success.	Basic processes exist but not required for planning and scheduling. Standard scheduling approaches utilized for large, visible projects.	Time management processes documented and utilized by most projects. Organization wide integration includes inter-project dependencies.	Time management utilizes historical data to forecast future performance. Management decisions based on efficiency and effectiveness metrics.	Improvement procedures utilized for time management processes. Lessons learned are examined and used to improve documented processes.
Project Cost Management	No established practices or standards. Cost process documentation is ad hoc and individual project teams follow informal practices.	Processes exist for cost estimating, reporting, and performance measurement. Cost management processes are used for large, visible projects.	Cost processes are organizational standard and utilized by most projects. Costs are fully integrated into project office resource library.	Cost planning and tracking integrated with Project Office, financial, and human resources systems. Standards tied to corporate processes.	Lessons learned improve documented processes. Management actively uses efficiency and effectiveness metrics for decision-making.
Project Quality Management	No established project quality practices or standards. Management is considering how they should define "quality."	Basic organizational project quality policy has been adopted. Management encourages quality policy application on large, visible projects.	Quality process is well documented and an organizational standard. Management involved in quality oversight for most projects.	All projects required to use quality planning standard processes. The Project Office coordinates quality standards and assurance.	The quality process includes guidelines for feeding improvements back into the process. Metrics are key to product quality decisions.
Project Human Resource Management	No repeatable process applied to planning and staffing projects. Project teams are ad hoc. Human resource time and cost is not measured.	Repeatable process in place that defines how to plan and manage the human resources. Resource tracking for highly visible projects only.	Most projects follow established resource management process. Professional development program establishes project management career path.	Resource forecasts used for project planning and prioritization. Project team performance measured and integrated with career development.	Process engages teams to document project lessons learned. Improvements are incorporated into human resources management process.
Project Communications Management	There is an ad hoc communications process in place whereby projects are expected to provide informal status to management.	Basic process is established. Large, highly visible projects follow the process and provide progress reporting for triple constraints.	Active involvement by management for project performance reviews. Most projects are executing a formal project communications plan.	Communications management plan is required for all projects. Communications plans are integrated into corporate communications structure.	An improvement process is in place to continuously improve project communications management. Lessons learned are captured and incorporated.
Project Risk Management	No established practices or standards in place. Documentation is minimal and results are not shared. Risk response is reactive.	Processes are documented and utilized for large projects. Management consistently involved with risks on large, visible projects.	Risk management processes are utilized for most projects. Metrics are used to support risk decisions at the project and the program levels.	Management is actively engaged in organization-wide risk management. Risk systems are fully integrated with time, cost, and resource systems.	Improvement processes are utilized to ensure projects are continually measured and managed against value-based performance metrics.
Project Procurement/ Vendor Management	No project procurement process in place. Methods are ad hoc. Contracts managed at a final delivery level.	Basic process documented for procurement of goods and services. Procurement process mostly utilized by large or highly visible projects.	Process an organizational standard and used by most projects. Project team and purchasing department integrated in the procurement process.	Make/buy decisions are made with an organizational perspective. Vendor is integrated into the organization's project management mechanisms.	Procurement process reviewed periodically. On-going process improvements focus on procurement efficiency and effective metrics.

Capability Maturity Model Integrated (CMMI)

- CMM was developed by the Software Engineering Institute (at Carnegie Mellon University) and is a process improvement model, originally developed, and still largely used as a framework to guide system and software development efforts and provide a method for assessing the capability of contractors (originally for the U.S. Government).
- CMMI, the successor to CMM, is a software and systems engineering process improvement model that provides a set of practices that address productivity, performance, costs, and overall customer satisfaction.
- The CMMI roadmap consists of three cycles:
  - **Entry/Reentry Cycle** – Specifies the actions required to evaluate, adopt and adapt processes for continuous improvement and reduction of defects.
  - **Implementation Cycle** – Specifies the action required to create an environment and the infrastructure needed for improvement.
  - **Process Cycle** – Specifies the actions required to execute and monitor the processes.
- CMMI process areas consist of 5 maturity levels (See Diagram).
- CMMI Certification is performed by licensed third party organizations.
- CMMI is generally pursued by large software development shops or vendors supplying software or systems engineering services to public and private organizations on-shore or off-shore.

CMM/CMMI Process Areas by Maturity Level (Version 1.1)

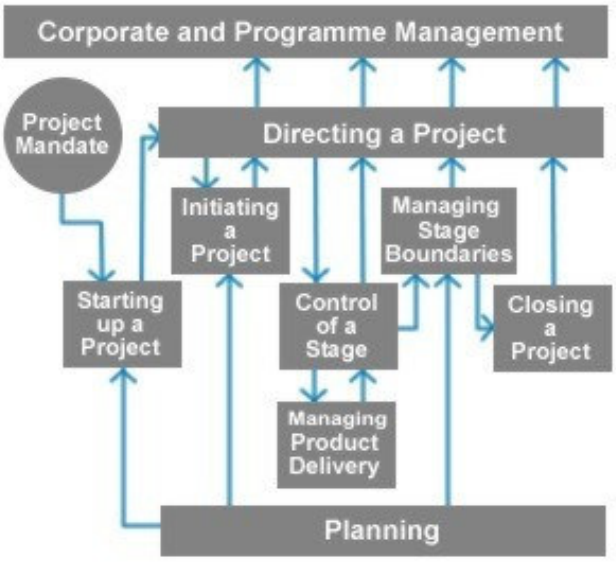


*Source: Software Engineering Institute

PRINCE2 (Projects in Controlled Environments)

- PRINCE2, an enhancement to PRINCE, was established by CCTA (Central Computer Telecommunications Agency). It has become a de facto standard used extensively by the UK Government and its vendors to manage IT projects and is widely utilized in the private sector, both in the UK and internationally.
- Key features of PRINCE2:
  - Focuses on business justification
  - Identifies a defined organization structure and processes for the project management team
  - Product (deliverable) based planning approach
  - Emphasis on dividing (Work breakdown) the project into manageable and controllable stages or packages
  - Flexibility to be applied at a level appropriate to the project
  - Used as a standard for UK government systems projects

PRINCE2 Process Model*



PRINCE 2 Process Model

*Source: CCTA

ISO 9001 (or ISO 9001) and ISO 14000 Overview

- ISO 9001 focuses on quality improvements and reduction of defects in and applies to an organization's overall operations. ISO 9001: 2000 strives to satisfy customers by continuing to improve the quality of an organization's processes and operations.
- ISO certification is performed by licensed independent third parties and is recognized globally.
- The ISO 9001 family is primarily concerned with "quality management" This means what an organization does to fulfill:
  - The customer's quality requirements
  - Applicable regulatory requirements
  - Achieve continual improvement of its performance in pursuing these objectives
- The ISO 14000 family is primarily concerned with "environmental management". This means what an organization does to:
  - Minimize harmful effects on the environment caused by its activities
  - Achieve continual improvement of its environmental performance

Six Sigma Overview

Six Sigma – represents a methodology (it is an attitude, not just a method) of continual process and product improvement identified and measured through the use of process variance statistics. While it represents an organizational (top down sponsorship is crucial) mind set to be successful, "individuals" are certified by ASQ (American Society for Quality) and other organizations.

- Six Sigma has evolved from quality improvement practices (developed in Japan and the U.S.) and was popularized first by Motorola and then by GE in the USA.
- Technically, Six Sigma is a statistical representation of 3.4 defects per million opportunities.
- Organizationally, Six Sigma represents a managerial methodology for continuous process and product improvement throughout an organization identified by process improvement techniques and measured quantitatively through process variance statistics.
- Individuals are certified as Six Sigma Black Belts (and other belts) in the public domain by the Association of Systems Quality (ASQ), GE for their employees and others.
- Six Sigma is an attitude and a frame of mind, not just a methodology.
- Six Sigma is an organizational initiative or discipline that measures statistical variances and determines what pieces of a process must be improved by:
  - Measuring the inputs, efficiency and outputs
  - Mapping them against customer requirements
  - Identifying improvements areas
  - Resetting benchmarks (at higher levels)

Six Sigma – is about creating accurately predictable output processes that are fully aligned with customer demands

- It is an organizational initiative or discipline that measures statistical variances and determines what pieces of a process must be improved by:
  - Measuring the inputs, efficiency and output
  - Mapping it against customer demands
  - Identifying improvement areas
  - Resetting benchmarks (higher)

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- Six Sigma is an attitude and a frame of mind, not just a methodology.
- To be successful, **6 Sigma requires a radical change in the way an organization works**
- **According to GE, customers and shareholders love it:**
  - **It drives customer centricity**
  - **Reduces costs**
  - **Improves product/service/systems capability and performance**

Eight Steps to Six Sigma

1. Identify strategic business objectives
2. Identify core, key sub and enabling processes
3. Identify process owners
4. Identify key metrics and dashboards (KPIs- Key Performance Indicators)
5. Collect data from KPIs and analyze
6. Select process improvement criteria
7. Prioritize process improvement projects
8. Continual Management of Processes

GE 6 Sigma Process Improvement Methods:

1. **Improved Control – DMAIC – Define, Measure, Analyze, Improve, Control (On average, the process is great – the issues lie with the variation)**
2. **Process Redesign – DMADV – Define, Measure, Analyze, Re-Design, Verify (Structural problem with the process)**

Comparing Lean and Six Sigma Methodologies

	Lean	Six Sigma
Goal	Create flow and eliminate waste	Improve process capability & eliminate variation
Application	Primarily manufacturing processes	All business processes
Approach	Teaching principles & implementation based on best practices	Teaching a generic problem-solving approach relying on statistics
Project Selection	Driven by Value Map (Highest Value Proposition based on priority selection attributes (e.g. cost reduction, speed to market, contract/legal compliance, load balancing, etc.)	Various approaches (e.g. eliminate variations
Length of Projects	Under 3 months	Over 3 months
Infrastructure	Training is becoming more formal; uses technology as an enabler	Dedicated resources, broad based training
Training	Kaizan Workshop of Team	Formal individual certifications

Quality Function Deployment (QFD) Overview

QFD – structured approach to defining customer needs or requirements and translating them into specific plans to produce products to meet those needs

Summary of Customer Needs – summarize the needs in a product Planning (requirements) Matrix. These matrices are used to translate higher level "What's or needs into lower level How's," product requirements or technical attributes to satisfy those needs

QDF Matrices* — QDF matrices are the means and not the end. **The real value in in the process of:**

- **Communicating with the customer**
- **Decision making**
- **Multi- functional team participation**

QFD Four Phases* -

- **Product Planning** – define customer needs and prioritize strong, moderate and weak, etc.
- **Assembly/Part Deployment (BOMP)** - identify parts and assemblies & translate into characteristics and target values
- **Process Planning** – Determine critical processes, process flows, parameters
- **Process & Quality Control** – Establish process quality, inspection and test methods

* Source: Ken Crow, 'Customer Focused Development with QFD,"2002, DRM Associates, http://www.npd-solutions.com/qfd/html

Kano Model & Framework Overview

Kano Model – a technique for assessing customer satisfaction by classifying product **attributes into three classifications: threshold (basic/musts), one dimensional (performance/linear) and attractive (Exciters/Delighters);** determining how they are perceived by the customer and their impact on customer satisfaction. These classification are useful for guiding design decisions in that they indicate when good is good enough and when more is better.

Product Characteristics are classified as*:

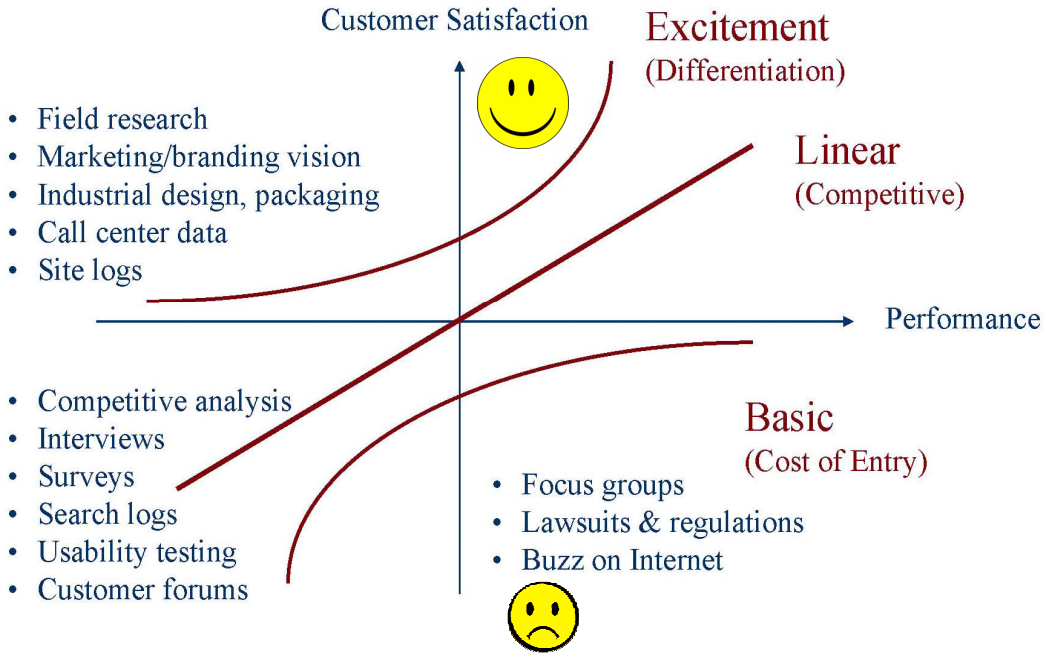
- **Threshold/Basic Attributes –** Attributes which **must** be present in order for the product to be successful. This can be viewed as the "price of entry."
- **One Dimensional Attributes (Performance/Linear) –** These attributes are **directly correlated to customer satisfaction** (e.g. increased functionality will result in increased customer satisfaction.
- **Attractive Attributes (Exciters/Delighters) –** Customers can get great satisfaction from a feature and may be willing to pay a premium price. These are often difficult to identify up front and therefore are called latent or unknown needs

Product Differentiation – can either be gained by a high level of execution of the Linear attributes or the inclusion of one or more "delighter" features

*Source: Kano Model, http://www.betterproductdesign.net/tools/definition/kano.htm

The Kano Framework

Represents a technique for assessing customer satisfaction by classifying products or systems into three classifications: threshold (basic or musts), one dimensional (linear) and attractive (exciters and delighters) or unattractive elements.



Source: Kano Model – http://www.betterproductdesign.net/tools/defintion/kano/htm

Kano Model & Framework Overview

- **Noriaki Kan, Professor, Tokyo Rika University**
  - Research areas: quality and customer satisfaction
  - "Voice of the customer" – Better client communications and customer experience is fundamental to design (interactive product design)
- **Kano Structured User Survey Methodology**
  - Determine main customer product functions
  - Devise questionnaire into two groups for each feature - functional questions (the feature is present) and dysfunctional questions (the feature is not present)
- **Summarize Kano Questionnaire Answers –** I like it: I expect it: I'm neutral; I can tolerate it: I dislike it.
- **Identify Classification of Responses -** Plot Features on Kano Graph of Functional and Dysfunctional question responses (like, expect, etc.) based on classifications (excitement, linear, basic, etc.)
- **Kano Model Uses* –**
  - Especially for widely divergent user populations
  - Adds market analysis dimension
  - Leverage data for targeting marketing and promotional messages

*Source; Anthony Hand, "Applying the Kano Model to User Experience Design, UPA Boston Mini-Conference Presentation, May 2004,

ITIM (Information Technology Investment Management) Stages of Maturity and Critical Processes – ITIM identifies the IT investment stages, their characteristics and the levels of maturity. It also identifies criteria for IT investment oversight.

Maturity stages	Critical processes
Stage 5: Leveraging IT for strategic outcomes	- Optimizing the investment process - Using IT to drive strategic business change
Stage 4: Improving the investment process	- Improving the portfolio's performance - Managing the succession of information systems
Stage 3: Developing a complete investment portfolio	- Defining the portfolio criteria - Creating the portfolio - Evaluating the portfolio - Conducting postimplementation reviews
Stage 2: Building the investment foundation	- Instituting the investment board - Meeting business needs - Selecting an investment - Providing investment oversight - Capturing investment information
Stage 1: Creating investment awareness	- IT spending without disciplined investment processes

Source: GAO.

ITIL (Information Technology Infrastructure Library)

• Owned and maintained by OGC (Office of Government Commerce – UK)

• v2 - Consists of twelve repeatable, consistent documented processes or functions for improving IT Service Management and Delivery

• Focuses on the IT Operations and Infrastructure functions

• OGC contracted with EXIN and IBEG to maintain and publish libraries and develop/administer the ITIL certification program for three levels of individual certifications for v2:

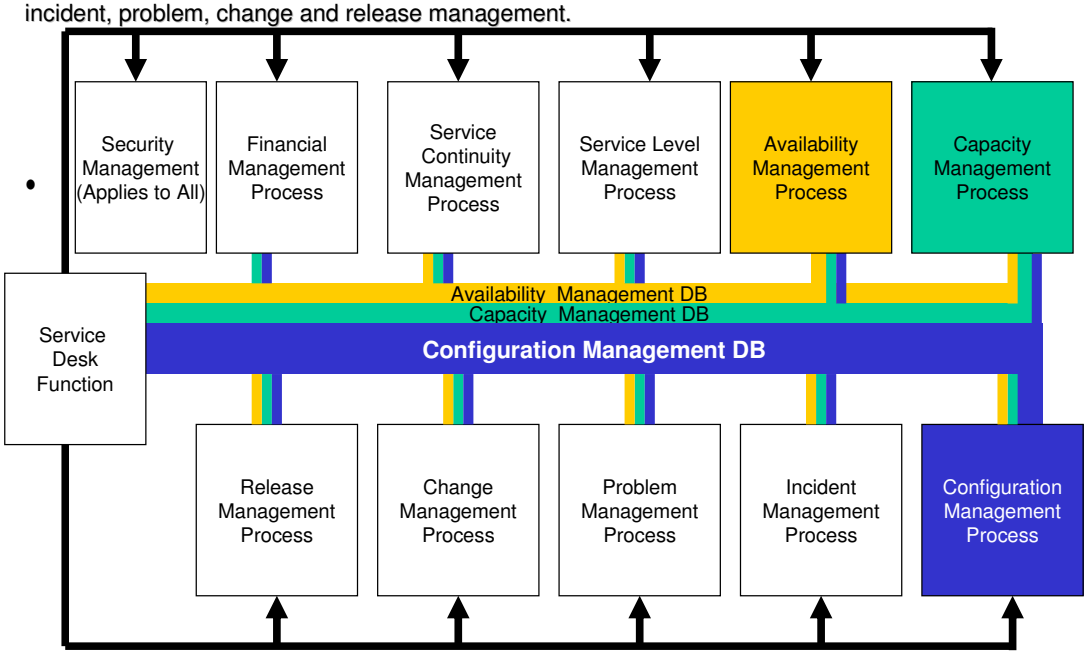
- IT Foundation Certification
- ITIL Practitioner's Certification
- ITIL Service Manager Certification

• Standardized approach and terminology

• Streamlines IT service management and deliver and improves quality (reduces costs, improves customer satisfaction and improves compliance)

Overview of ITIL (IT Infrastructure Library) Processes – v2

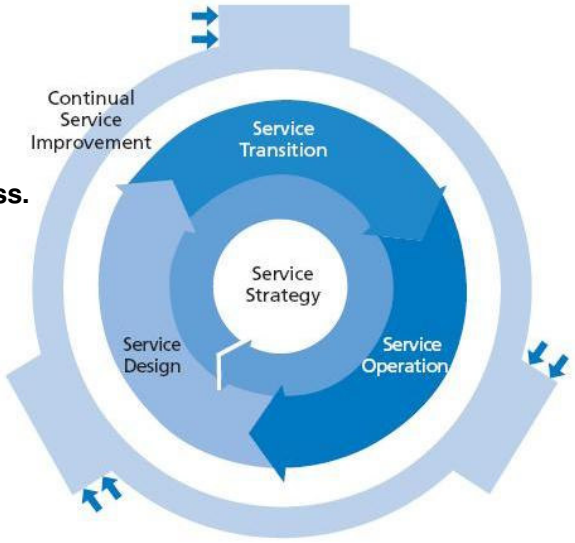
A framework consisting of twelve repeatable, documented processes for improving **IT Service Management and Delivery** to reduce costs and improve customer satisfaction, service and compliance. The Configuration Management process and resultant data base, is one of the key components of ITIL, which supports several other ITIL processes, including availability, capacity, incident, problem, change and release management.



The IT Service Management Lifecycle (ITIL v3) – Issued in 2007

ITIL Version 3 consists of five(5) phases – Service Strategy, Service Design, Service Transition, Service Operation and Continual Service Improvement. Each phase consists of numerous processes, functions and related activities.

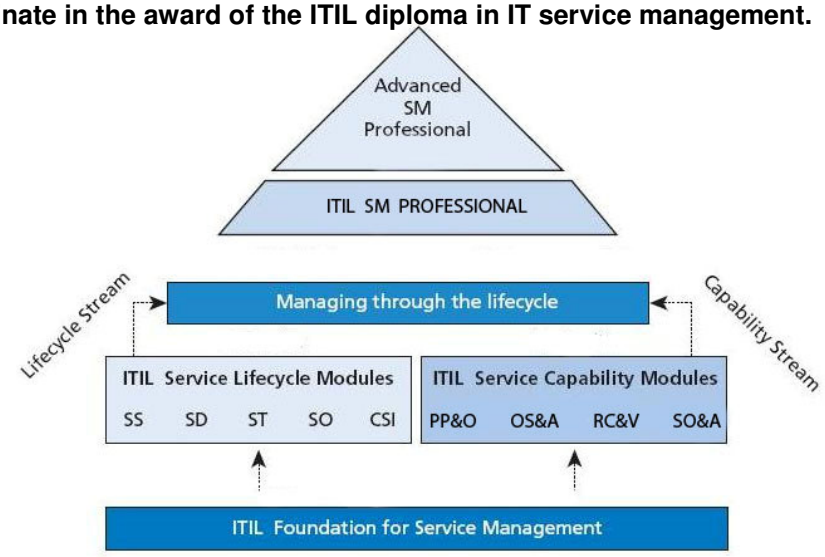
OGC (UK) licensed APMG to maintain v3 administer the v3 administration process.



Source: APMG

ITIL Version 3 – Qualification and Certifications

The ITIL version 3 certification framework has been significantly revised to reflect the service lifecycle approach. The new scheme recognizes the value of existing v2 qualifications and introduces a system that enables an individual to gain credits for both ITIL v2 and v3 courses. The ITIL v3 certification will be based on the following structure which will culminate in the award of the ITIL diploma in IT service management.



Source: OGC/ APMG

LEGEND

CSI = Continual Service Improvement
PP&O = Planning Protection and Optimization
OS&A = Operational Support and Analysis
RC&V = Release, control and Validation
SD = Service Design
SO = Service Organization
SO&A = Service Offerings and Agreements
SS = Service Strategy
ST = Service Transition

Incident Management Process Deliverables

- **Process Roles, Responsibilities & Ownership**
- **Policies**
- **Process Workflow**
- **Process Activities and Work Instructions**
- **Templates and Report Design**
- **Prioritization and Escalation Attributes and Procedures**
- **Incident Closure**
- **Monitoring and Control Procedures**
- **Key Metrics**
- **Communications Plan and Notifications**

COBIT ®(Control Objectives for Information and Related Technology)

- Developed by the IT Governance Institute (ITGI®), COBIT 4.0 provides a control framework linking 34 IT processes (e.g. define a strategic IT plan; define the information architecture, ensure continuous service, etc.) to four (4) domains – planning and organization; acquisition and implementation; delivery and support and monitoring all of which are related to specific IT resources and metrics. COBIT was originally released by the IT assurance and audit community and still has that orientation. COBIT 4.0 was released in late 2005.

- The Information Systems Audit and Control Association (ISACA®) works closely with ITGI and provides several individual certifications: Certified Information Systems Auditor™ (CISA®) and Certified Information Security Manager (CISM®).

- COBIT consists of a checklist of processes relating to IT governance. COBIT does not provide detailed policies, processes and procedures as to how to do the processes on the checklist. That is the responsibility of each organization.

- Several groups are in the process of initially aligning COBIT with other standard frameworks such as ISO 20000(ITIL) and ISO 17799 (Information Security).

COBIT ®(Control Objectives for Information and Related Technology)

Domain → Process ▼	Planning & Organization	Acquisition & Implementation	Delivery & Support	Monitoring
P01- Strategic IT Plan	X			
P02- Information Architecture	X			
P03- Determine Technology Direction	X			
P04- IT Organization	X			
P05- Manage IT Investment (Portfolio Investment Management)	X			
P06- Communicate Direction	X			
P07- Manage Human Resources	X			
P08- Ensure External Compliance (SOX ++)	X			
P09- Assess Risks	X			
P10- Manage Projects (PMMM, PMBOK,Prince2, CMMI, etc.)	X			
A11- Identify Automated Solutions		X		
A12- Buy/Maintain Application Software		X		

COBIT ®(Control Objectives for Information and Related Technology) (Cont"d)

Domain → Process ▼	Planning & Organization	Acquisition & Implementation	Delivery & Support	Monitoring
A13- Acquire/Maintain Technology Infrastructure (ITIL)		X		
A14- Enable Operations & Use (ITIL)		X		
A15- Procure IT Resources		X		
A16- Manage Changes (ITIL & PM)		X		
A17- Install & Accredit Solutions		X		
DS1- Define & Manage Service Levels (ITIL)			X	
DS2- Manage Third party Services			X	
DS3- Manage Performance & Capacity (ITIL)			X	
DS4- Ensure Continuous Service (ITIL)			X	
DS5- Ensure Systems Security (ISO 17799 & ITIL)			X	
DS6- Identify/allocate costs			X	
DS7- Educate/Train Users			X	
DS8- Manage Service Desk & Incidence (ITIL)			X	
DS9- Manage the Configuration (ITIL)			X	

COBIT ®(Control Objectives for Information and Related Technology) (Cont"d)

Domain → Process ▼	Planning & Organization	Acquisition & Implementation	Delivery & Support	Monitoring
DS 10- Manage Problems (ITIL)			X	
DS11- Manage Data			X	
DS12- Manage Facilities & Physical Environment			X	
DS13- Manage Operations (ITIL)			X	
ME1- Monitor & Evaluate IT Performance				X
ME2- Monitor & Evaluate Internal Controls				X
ME3- Ensure Regulatory Compliance				X
ME4- Provide IT Governance				X

By addressing these 34 high-level control objectives, the business process owner can ensure that an adequate control system is provided for the IT environment.

IT Security Framework – should consist of at least the following components:

- Security policy
- Organizational security
- Asset classification and control
- Personnel security
- Physical and environmental security
- Access control
- Business and IT continuity management
- Compliance
- Data and document security
- System development and maintenance

ISO 17799* – IT Security Framework – Establishes an Enterprise Security Architecture (ESA) based on two key concepts – Domains and Security Levels

- **Security Domains –** There are 9 security (policy) domains which are used to develop strategy, execute plans and track progress**:**
  - **Information Security Organization**
  - **Risk Assessment and Asset Classification**
  - **Operating and Architectural Controls**
  - **Personnel Security**
  - **Physical & Environmental**
  - **Access Control**
  - **Systems Development & Maintenance**
  - **Monitoring Compliance**
  - **Business Continuity**
  - **Wireless Communications**
  - **Security Incident Management**

* Note: **ISO 17799** is intended to be used with **ISO/IEC 27001** & integrates the process based approach of ISO's management systems standards, including the Plan-Do-Check-Act cycle and requirement for continual improvement..

ISO 17799 – IT Security Framework – Establishes an Enterprise Security Architecture (ESA) based on two key concepts – Domains and Security Levels (Cont'd)

- **Security Levels –** There are 6 security (policy) levels which are used to develop policies, procedures and documentation**:**

  - Information Security Policy Statement
  - Information Security Policies
  - General IT Standards
  - Minimum Security Guidelines, Security Procedures & Security Guidelines
  - Supporting Documents, Templates & Forms
  - Security Awareness (Marketing) Material and Training

COBIT and ISO 17799 are complementary: COBIT represents a broader framework to improve IT controls, while ISO 17799 tends to focus on more details in IT security.

ISO 17799 & ISO/IEC 27001 –Information Security

ISO 17799 – IT Security Framework – Establishes an Enterprise Security Architecture (ESA) based on two key concepts – 11 Domains and 6 Security Levels

Security Levels – There are 6 security (policy) levels which are used to develop policies, procedures and documentation **-** Information Security Policy Statement; Information Security Policies; General IT Standards; Minimum Security Guidelines, Security Procedures & Security Guidelines; Supporting Documents, Templates & Forms and Security Awareness (Marketing) Material and Training.

ISO/IEC 27001 IT Security Management Systems – The purpose of ISO/ IEC 27001 is to help organizations establish and maintain an information security management system (ISMS). It is designed to be used for certification purposes.

While ISO/ IEC 27001 lists a set of control objectives and controls, which came from ISO/ IEC 17799, ISO 17799 also provides implementation guidance. ISO/ IEC 27001 is aligned with ISO 17799. Many organizations use both standards to develop and improve their information security management environment, policies, processes and controls.

Baldrige Award & Performance Excellence

Baldrige Award Criteria for Performance Excellence Framework

- **Leadership – values, direction and performance expectations**
- **Strategic Planning – process for how an organization develops strategic objectives, investment priorities and action plan**
- **Customers and Market Focus – determine customer and market preferences**
- **Human Resource Focus – motivate and develop employees**
- **Process Management – develop and improve business processes**
- **Business Results – measure results in terms of balanced metrics such as financial, customers, innovation, learning and operational and process performance**

The IT Services Qualification Center at CMU

eSCM – The New Standard for Organizational Sourcing Certification

- **ITsqc creates capability models and qualification methods to improve sourcing relationships in the Internet-enabled economy**
- **ITsqc developed the eSourcing Capability Model for Service Providers (eSCM-SP) v2 for three purposes:**
  - **It helps IT- enabled sourcing service providers appraise and improve their ability to provide high quality sourcing services**
  - **it gives them a way to differentiate themselves from the competition**
  - **Prospective clients can evaluate service providers based on their eSCM-SP level of certification and practice satisfaction profile**
- **ITsqc developed the eSourcing Capability Model for Clients (eSCM-CL) which represents best practices for clients to use to manage their sourcing initiatives**

Adapted from CMU slides

eSCM Structure

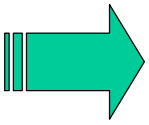
- 84 Practices
- Each practice has three dimensions
  - Sourcing Life-Cycle
    - On-going (spans entire life cycle)
    - Initiation (negotiation, agreement, deployment)
    - Delivery (delivery of service)
    - Completion (transferring responsibility back to client)
  - Capability Area
  - Capability Level

On-Going Life Cycle Practices (some examples)

- Managing and motivating personnel
- Managing relationships
- Measuring and reviewing performance
- Managing information and knowledge systems
- Identifying and controlling threats
- Managing the technology infrastructure
- Managing new product development and commercialization

Capability Areas 10 Logical groupings of the 84 practices

- **Knowledge Management**
- **People Management**
- **Performance Management**
- **Relationship Management**
- **Technology Management**
- **Threat Management**
- **Contracting**
- **Service Design & Deployment**
- **Service Delivery**
- **Service Transfer**



On-going practices

Initiation

Initiation

Delivery

Initiation and Completion

Capability Levels - 5

- Level 1 - Providing Services
- Level 2 – Consistently Meeting Requirements
- Level 3 – Managing Organizational Performance
- Level 4 – Proactively Enhancing Value
- Level 5 – Sustaining Excellence

Uses of eSCM

- **Clients of service providers**
  - **Use eSCM evaluations to determine provider capabilities**
  - **Evaluate multiple potential providers**
  - **Reduce risks in sourcing relationships**
  - **Managing the sourcing function and life cycle**

- **Service providers**
  - **Systematically assess their existing capabilities and implement improvement efforts**
  - **Use results to set priorities for improvement efforts**
  - **Implement in conjunction with other quality initiatives**
  - **Improve their relationships with clients**
  - **Demonstrate their capability to clients through Certification**

Adapted from CMU slides

Certification – 1 – Organizational Certification

- **Professionals trained by Carnegie Mellon from authorized organizations perform evaluation for certification**
  - Authorized lead evaluators and evaluators on website
  - First evaluation for certification was completed 4Q04
- **Carnegie Mellon's Certification Board reviews data**
- **Board issues certificates for service providers indicating:**
  - Span of organization being certified
  - Duration of certification (typically 2 years)
  - Service(s) being certified
- **Carnegie Mellon website displays list of Certified Providers**

Certification 2 – Issues certification for quality and compliance

Certification 3 - Research and measurement opportunities

ITsqc
School of Computer Science
Carnegie Mellon University
www.itsqc.cs.cmu.edu

Adapted from CMU slides

IAOP* – International Association of Outsourcing Professionals – Setting the Standard of Excellence Across the Profession and Industry Certified Outsourcing Professional (COP)

Program Objectives:

- **Establish a common, globally-recognized standard for the experience and knowledge outsourcing professionals should possess. (Individuals are certified)**
- **Define the process for professionals to demonstrate they possess the requisite capabilities.**
- **Create a highly-coveted professional designation distinguishing the field's leading practitioners.**

***International Association of Outsourcing Professionals**
www.outsourcingprofessional.org

Certified Outsourcing Professional (COP)Program

Setting the Standard for Excellence

(1) Outsourcing Professional Body of Knowledge (OPBOK) Generally accepted set of knowledge and practices applicable to the successful design, implementation, and management of outsourcing contracts.	**(2) Outsourcing Professional Standards** Set the evaluation criteria used to determine that professionals possess requisite experience and knowledge as defined in the OPBOK.	**(3) Guide to Becoming a Certified Outsourcing Professional (COP)** Documents the steps required to obtain and maintain certification as a Certified Outsourcing Professional (COP).
(4) Certified Outsourcing Professional (COP) Preparation Class 3-hour preparation class that takes an individual through the requirements and process for becoming a Certified Outsourcing Professional (COP).	**(5) Certified Outsourcing Professional (COP) Master Class** 4-day program for experienced individuals providing a structured, intensive training program covering the OPBOK.	**(6) Outsourcing Professional Course Catalogue** an online resource indexing accredited training programs that deliver against the knowledge and practices defined in the OPBOK.

(7) Certified Outsourcing Professional (COP) Award Package
Award certificate, guidelines for use, and applicable requirements and forms for keeping COP designation current.

Enterprise Technology Architecture Domains

Client Platforms Client Hardware, Operating System, Productivity, Application, Communication, Hardware Maintenance Contracts, Software Tech. Support, Upgrade Agreements	**ETA Strategy & Standards** Define For Each Domain: Enterprise Portfolio of Applications (Directory) & Key Process Flow & Maps (Input/Output Flow for Application) & Standards	**Application Development** Development Tools, Languages, Compilers, Utilities, Repositories, Frameworks, Testing, Modeling, Object Reuse, Integrated Development Environment (IDE), Aging, Obsolescence, Retirement
Server Platforms Mini Computers, Mainframe, Hardware, Operating System, Storage, SAN, Hardware Maintenance Contracts, Software Tech. Support, Upgrade Agreements	**Network Infrastructure** Data and Voice Networks, Wireless, Mobile, Cabling, Protocols, Switches, Routers, NCC, Back Up, Mail, SAN, Routing Table	**Business Components** Application Systems, 3rd Party Packages, New Common functions/Services
System Management Monitoring, Configuration, Change, Release/Version Control, Asset , Problem, Disaster Recovery, Capacity Planning, Documentation, Integration	**Middleware** Directory, Data Hub, Message Queuing, Business Rule Engine, EAI, EDI, Translation Software	**Collaboration** Workflow, Knowledge, Content, Email, Document, Groupware, Personalization, Video Conferencing, Issue Tracking
Security Encryption, Authentication, Authorization, Administration, Intrusion Detection, Virus, Access (Remote & Local), Physical Security	**Information Mgmt.** RDBMS, Data Admin., Modeling, Warehousing, Analysis, Mining, Reporting, Data Retention	**Web Management** Web Development, Content Management, Analytics, Search Engine, Portal, SOA, Data Base Interaction, Presentation Language (HTML,AJAX, Flash, etc.)

J & J Standards and Strategies - Enterprise Technology Domains -2007

Supply Chain Management
- Supply Chain Planning
- Procure to Pay
- Order to Cash

Customer Relationship Mgmt.
- Marketing and Analytics
- Promotion
- Event Management
- Sales Force Effectiveness
- Customer services
- Field Service

R & D Management
- Product Development
- Product Commercialization
- Product Life Cycle Mgmt.

BI & Reporting
- Data Warehousing
- Dashboards & Scoreboards
- On Line Analytical Processing
- Query and Reporting
- Data and Text Mining

Compliance & Quality Mgmt.
- Application Compliance
- Requirement Management
- Complaints Handling and Failure Investigation
- Financial & Accounting Discloser Information
- Corrective & Preventive Actions
- Risk Management

Web & Integration Services
- Integration Services
- Web Application Services
- Content & Document Mgmt.
- Search

Data & Model Mgmt.
- Data Interchange
- Metadata Services
- Model Mgmt & use
- Data Mgmt. & Governance
- Modeling Services

Application Development Tools
- Application Design
- Development Languages
- Test Tools & Methods
- Application Change Mgmt.

Security Services
- Anti-Virus & Anti-Spyware
- Intrusion Detection
- Policy Compliance
- Identity Management
- Authentication & Authorization
- Cryptography
- Transaction Security
- Secure Information Storage & Access

Software Infrastructure
- Database Management
- Personal Productivity
- Messaging
- Web Conferencing
- Workspaces
- Wikis & Blogs

Service Management
- System Management
- Desktop Management
- Process Management
- Application Management
- Network Management

IT Management
- Portfolio Management
- Process Excellence

Computing
- Client Computing Hardware
- Client Computing Operating Systems
- Handheld Devices
- Handheld Operating Systems
- Server Hardware
- Server operating Systems
- Storage
- High Availability

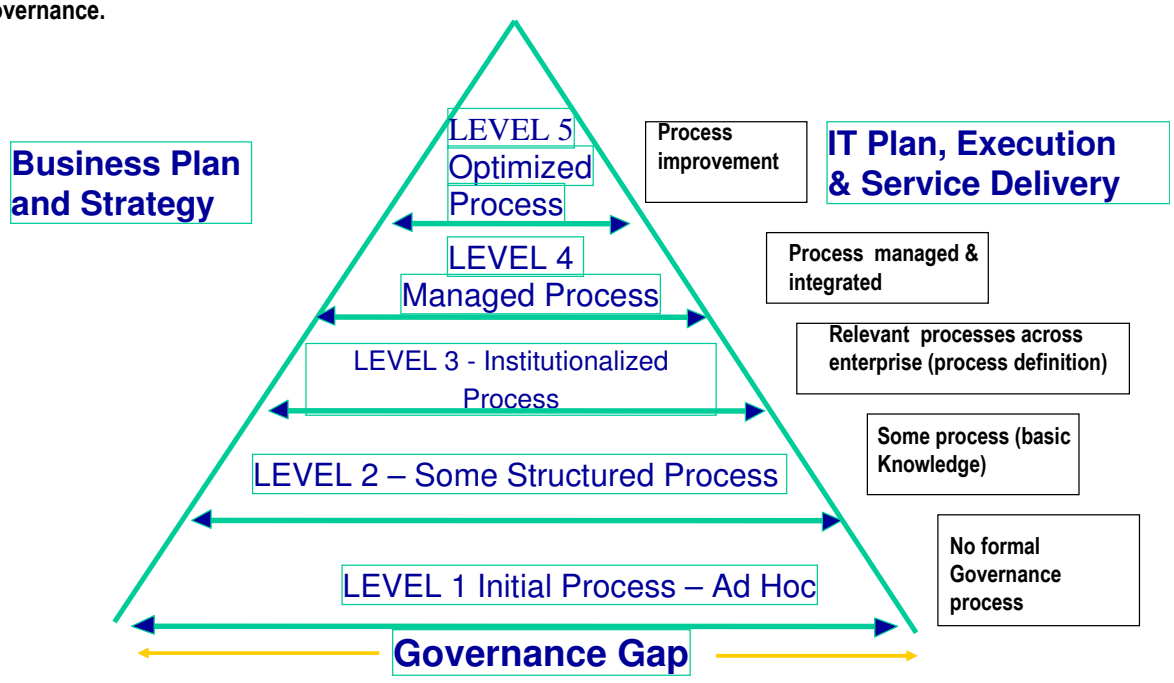
Administrative Systems
- HR Management
- Financial Management

Connectivity
- Data Communications
- Voice & Video
- Contact Center
- LAN Components
- WAN Components
- Wireless Communications

Prepared by J & J Standards Strategies & Emerging Technology Board

IT Governance Maturity Levels

CMMI* or An Equivalent Model can be used to self - assess the level of an enterprise's IT Governance maturity & develop a plan and strategy to achieve higher levels of maturity for each of the major and sub-components of IT Governance.



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

Figure 2.16 – Summary of Current and Emerging frameworks That Enable IT Governance and Continuous Improvement

There are a variety of models for different uses and focus areas.

MODEL	GENERAL USE	SOURCE(S)
COBIT®	IT Control Objectives	ITGI (IT Governance Institute)
ITIM	IT Investment Management	GSA (General Services Administration)
Kano	Customer Needs and Requirements	Kano
CMMI®	Systems and Software Development and Systems Integration	SEI (Software Engineering Institute)
Balanced Scorecard	Corporation Measurement Scheme	Kaplan and Norton
e-Sourcing Capability Model	Sourcing (for both Service Providers and customers)	ITsqc (IT Services Qualification Center)
People - CMM® (P-CMM)	Human Asset Management	SEI
ISO® 9001:2000	Quality Management	ISO (International Standards Organizations)
Six Sigma®	Quality Management and Process Improvement	Motorola
ISO® / IEC 17799 and 27001	Information Security Management	ISO
ISO® 20000/ BS 15000 / ITIL®	IT Infrastructure, Service and Operations Management	ISO/ British Standards Organization/ ITSMF (IT Service Management Forum)
PMBOK® / OPM3® / PMMM / PRINCE2®	Program and Project Management	PMI (Project Management Institute) / Project Management Solutions, Inc./ CCTA (OGC3 – Office of Government Commerce)
OPBOK®	Outsourcing	IAOP (International Association of Outsourcing)
Generic Framework for IT Management	IT Management	University of Amsterdam and Henderson and Venkatraman

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– **Placeholder- Summary of Currrent and Emerging Frameworks**

Summary and Implications for Improving IT Governance

- There are a growing number of continuous process improvement frameworks and models
- All of them focus on helping either individuals and/or organizations improve their effectiveness, competencies and maturity levels.
- The selection of a particular framework or combination of frameworks is largely dependent on the strategic objectives, available resources of an organization and their desired outcomes. All of the frameworks require the management of change and cultural transformation (see Appendix - Change Acceleration Framework)
- An organization should leverage, adopt and integrate those models or parts of models that apply to creating a more robust and comprehensive IT governance roadmap
- Clearly define the roles and responsibilities for IT governance development and ownership and continuous improvement
- Use technology to enable the processes

A flexible, yet integrated IT governance framework will provide an appropriate roadmap to steer a more effective journey towards a higher level of IT maturity.

3.0 Business/IT Alignment Excellence

IT alignment, like governance, is a journey, not a destination. It takes many small things to make it a success and not one big thing.

Objectives

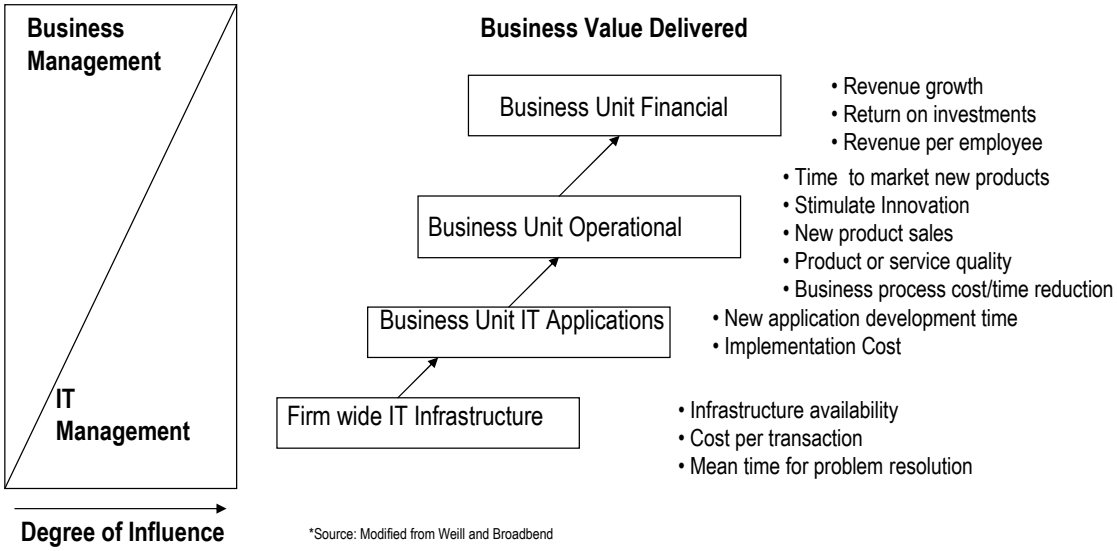
- Identify the principles for effectively aligning IT to the business
- Illustrate business and IT strategy & plan development frameworks
- Provide a high level flow of business/IT planning through execution
- Describe IT Investment and Governance Steering and Governance Board (s) – Roles and Responsibilities
- Discuss Investment Portfolio Management and criteria for analysis, selection, prioritization and funding of IT initiatives
- Describe the Engagement Model to establish and optimize IT/Business relationships, work flow requests and trusts
- Identify Balanced Score Card Metrics that help to measure alignment

The Board's Role in Driving Business/IT Alignment (& Executive Management)

- Assess that IT strategy is aligned with the organization's strategy
- Evaluate whether IT is delivering against the strategy through clear objectives, expectations and key performance indicators (KPIs)
- Direct IT strategy by determining the level of IT investments, balancing the investments between growing the enterprise and supporting the on-going operations of the enterprise
- Ensure an open and collaborative culture between IT and the business

Views of IT Value Differ* - Are IT Investments - Delivering value? Can it be adequately measured? Remaining healthy? Driving customer satisfaction? Supporting the business satisfactorily?

Different levels of management and users perceive the value proposition of IT differently. This also suggests that measuring the impact of an IT investment at the bottom is much easier than at the top.



*Source: Modified from Weill and Broadbend

Figure 3.1 – IT/Business Alignment Maturity Assessment Template

Level	Phase	Description
5	Optimized Process	There is advanced understanding of IT and business strategy alignment. Processes have been refined to a level of external best practices, based on results of continuous improvement and maturity modeling with other organizations. External experts are leveraged, and benchmarks are used for guidance. Monitoring, self-assessment, and communication about alignment expectations are pervasive.
4	Defined and Managed Process	The need for IT and business strategy alignment is understood and accepted. A baseline set of processes is defined, documented, and integrated into strategic and operational planning. Measurement criteria are developed, and activity is monitored. Overall accountability is clear, and management us rewarded based on results.
3	Repeatable Processes	There is awareness of alignment issues across the enterprise. Alignment activities are under development, which include processes, structures, and educational activities. Some strategy alignment takes place in some business units but not across the entire enterprise. Some attempts are made to measure and quantify the benefits.
2	Initial Processes	There is evidence that the organization recognizes the need to align IT and business strategy. However, there are no standard processes. There are fragmented attempts, often on a case-by-case basis within individual business units.
1	Ad hoc	There is a complete lack of any effort to align IT and business strategy. IT functions in a purely support role.

Source: Modified from Forrester Research, Inc.

Principles for Aligning IT to the Business More Effectively

- **Value Proposition of IT** - Clearly define and relate the value that IT provides in support of the Business. This will vary by management levels within enterprises and the accuracy of the measurements (e.g. Revenue growth, cost reduction/containment, competitive advantage, strategic positioning, business continuity, regulatory compliance, speed to market, etc.)
- **Strategic Planning Programs** - Develop a **strategic IT plan** that is an **integral part of the strategic business plan**

  - Executive Steering Committee - involves top management in the IT/Business planning process to establish overall IT direction, investment priorities and address enterprise wide issues.

  - **Investment Portfolio Management, Capital Budgeting & Allocations** – establishes the approach and criteria for consistently analyzing, selecting, prioritizing, allocating and authorizing investment capital and expense levels to IT at the enterprise, business unit and functional levels to both grow the business and keep the lights on.

  - **Performance Management and Measurement** – monitors strategic plan outcomes based on specific MBO (Management by Objectives) categories (e.g. Financial, Customer Satisfaction, People Development, Quality, Service Levels, etc.) and establishes organizational and functional accountability.

Principles for Aligning IT to the Business More Effectively (Cont'd)

- **Management Control Programs –** focus on the tactical and operating plans and programs

  - Formalize multi-level IT/Business Functional/Operations/Technology Steering and Governance Boards with specific roles and decision rights in the day-to-day implementation and service management of the tactical IT plans and programs.

  - **Tactical/Operating Plans** – establishes annual and near term IT objectives, programs and the resources to accomplish the objectives (e.g. application development plan, infrastructure refresh plan).

  - **Portfolio Management** - Ensures that all **programs, projects and IT service management investments are evaluated**, prioritized, funded, approved and monitored using a consistent process and a common set of ranking criteria.

  - **Budget/Accounting/Charge-Back** – establishes budgets and monitors expenditures; charges IT back to the business or functional users to assure more effective involvement and ownership.

  - Performance Management – Collects, analyzes and reports on performance of results against objectives at a more detailed and operational level than at the strategic plan level (see Performance Management module).

Principles for Aligning IT to the Business More Effectively (Cont'd)

- **Supplementary Programs (at all levels)**

  - IT/Customer Engagement (Relationship) Model - Establishes a customer focused relationship model to facilitate interfaces, decisions, resolution of issues, communications and builds trust between IT and the business.

  - **Program Management Office** – establishes the processes, tools and IT/Business unit roles responsibilities for program and project management.

  - **Marketing, Public Relations and Communications Program for IT –** promotes executive, management and employee education and commitment to the value of IT.

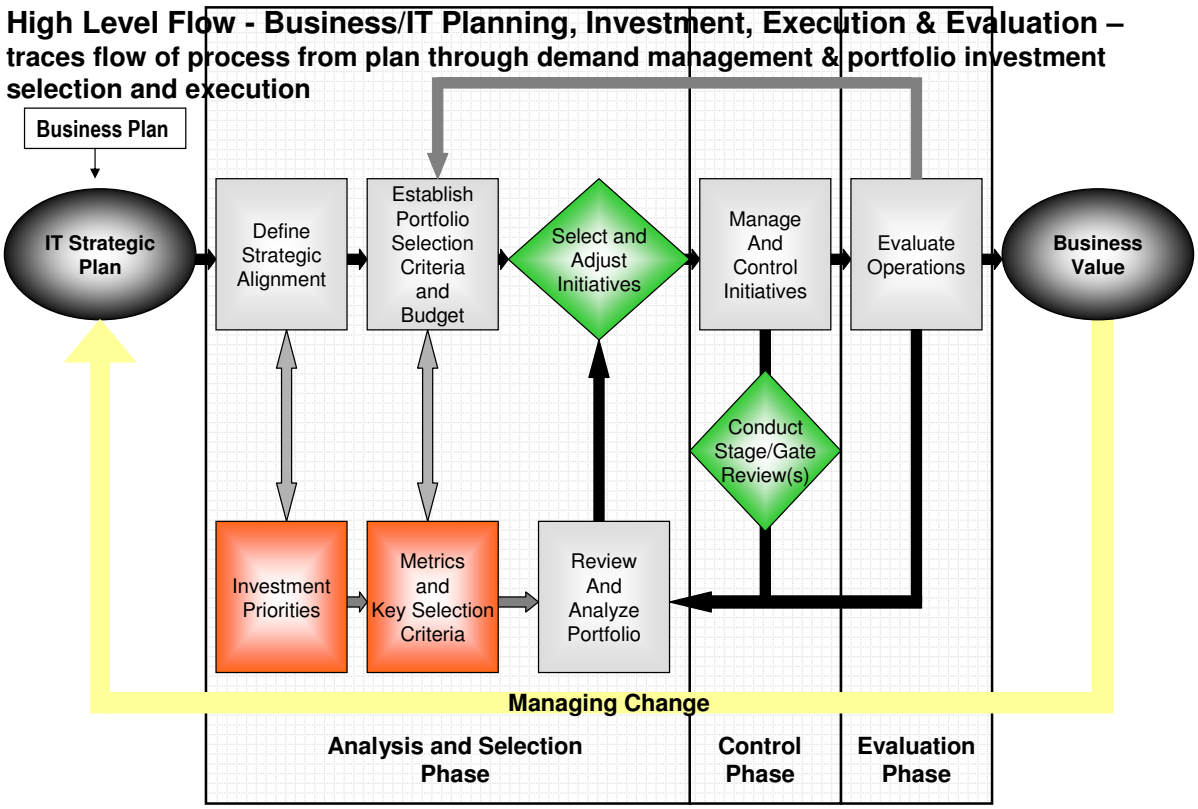
  - **IT Charter** – promotes effective and definitive interaction and links between IT and the business/functional groups they support.

  - **Standards and Guidelines** – adopt and maintain best practice standards and flexible guidelines to describe and document IT processes, policies and procedures.

  - Organizational Development, Skills and Competencies – develop a proactive learning environment and encourage/reward education, training and certification (where appropriate).

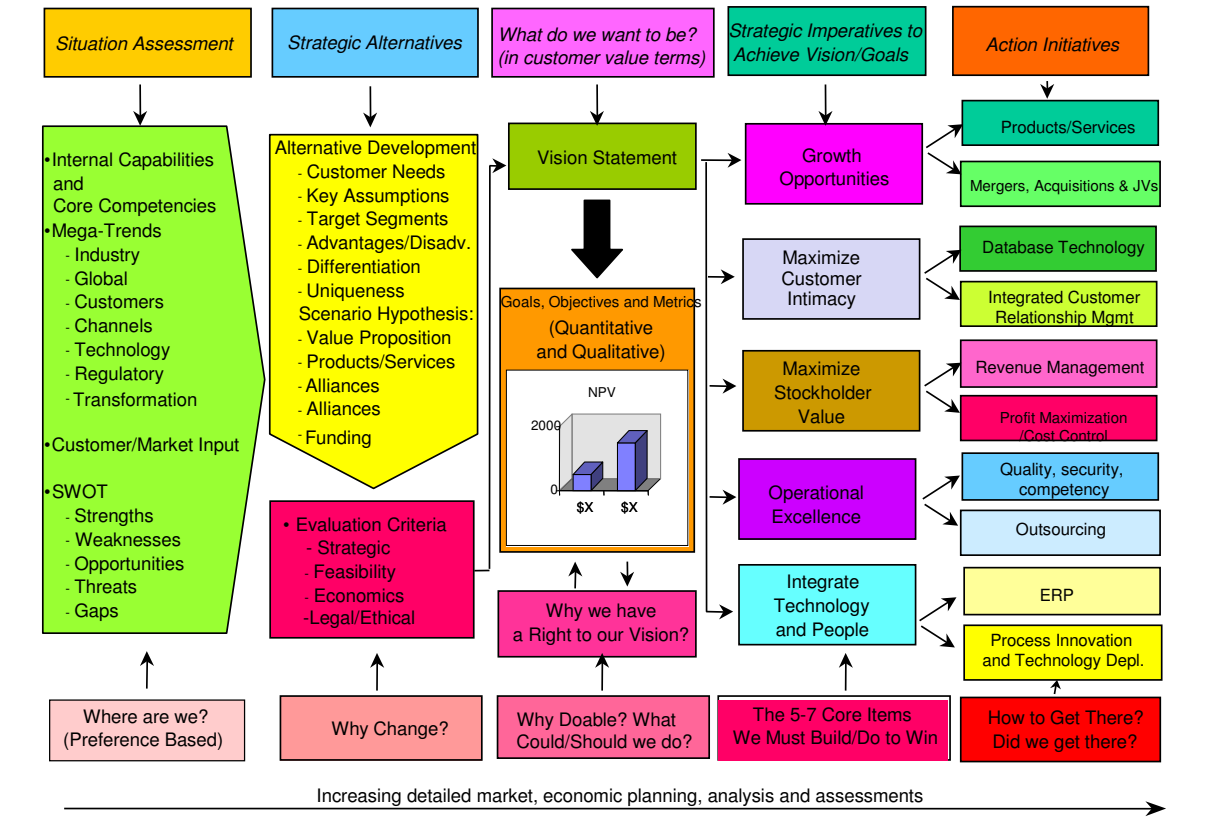
- **IT Performance Metrics** - Evaluate IT performance using balanced scorecard metrics for each component of the IT governance process.

High Level Flow - Business/IT Planning, Investment, Execution & Evaluation – traces flow of process from plan through demand management & portfolio investment selection and execution



Business Strategy & Plan Development Framework

IT/Business Alignment



IT Investment – Key Value Proposition &/or Alignment Questions *Executive Summary*

Strategic Questions* - Are we doing the right thing? Is the Investment:

- **In line with our business vision?**
- **Consistent with our business principles, plan and direction?**
- **Contributing to our strategic objectives and sustainable competitive differentiation?**
- **Providing optimum value at an acceptable level of risk?**

Value Questions – Are we getting the benefits?

- **A clear and shared understanding and commitment to achieve the expected benefits.**
- **Clear accountability for achieving the benefits which should be linked to MBOs and incentive compensation schemes.**
- **Relevant and meaningful metrics.**
- **An effective benefits realization process and sign-off.**

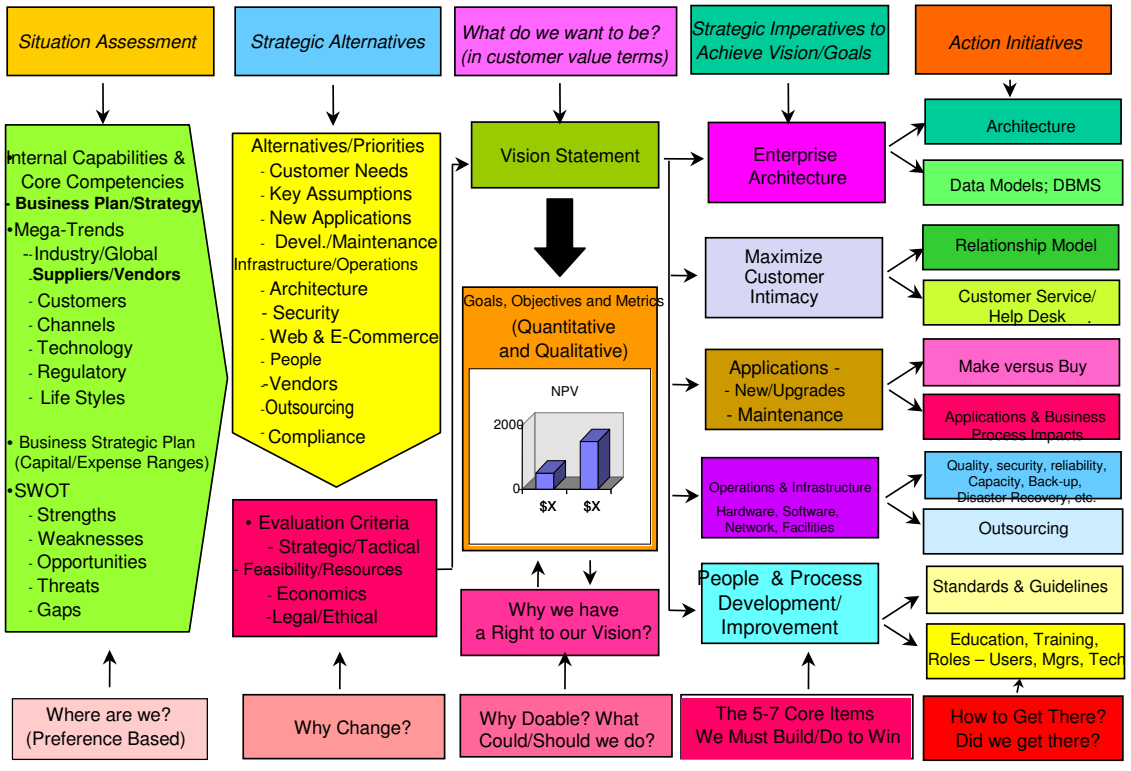
Delivery and Execution Questions – Are we deploying well and effectively?

- Scalable, disciplined and consistent management, governance & delivery processes
- Appropriate and sufficient resources available with the right competencies, capabilities and attitudes

Information Technology Strategic Planning Cycle (Illustrative Example for a Manufacturing Company)

Planning Preparation	Vision & Guiding Principles	Planning Assumptions	Goals & Strategies	Plan Completion	Plan Implementation	Ongoing Evaluation
Steps	**Steps**	**Steps**	**Steps**	**Steps**	**Steps**	**Steps**
Preplanning Preparations Determine readiness to plan Raise awareness of technology challenges Identify Executive Sponsor Identify planning team Identify information needed for planning Determine planning logistics Determine how best to communicate planning effort Review business/organization plan and direction Determine how to best align IT Plan with Business Plan (Executive Steering Council, etc.)	**Session 1** Conduct visioning session Develop a draft IT vision statement Develop a draft set of IT guiding principles Seek input from and communicate with constituencies	**Session 2** Identify internal and external factors that describe the current and near future (3 years) environment Develop assumptions Seek input from and communicate with constituencies	**Sessions 3** Identify goals, objectives and strategies to meet future needs Identify key performance indicators to measure objectives Seek input from and communicate with constituencies	**Sessions 4** Validate alignment of all plan elements with organization goals, objectives and initiatives Write draft of plan Submit draft to Steering Council for review Incorporate Council comments and edit plan Submit final plan Approve plan	**Organization** Develop annual operating and tactical plan(s) and budgets based on strategic plan Seek feedback from and communicate with constituencies	**Organization** Assess progress semi-annually Identify accomplishments Identify areas for improvement
Outcomes	**Outcomes**	**Outcomes**	**Outcomes**	**Outcomes**	**Outcomes**	**Outcomes**
Agreement on: -Readiness to plan -Plan logistics -Team members -Executive sponsor -Organizational expectations -Communication strategy	Draft IT Vision Statement Draft IT Guiding Principles Communication Plan	Set of planning assumptions and constraints that are the basis for goals, objectives and strategies	Agreement on future goals and specific objectives Three-year Implementation grid	**IT** strategic plan	Annual operating plan(s) & Budgets (e.g. Capital & Expense)	Continual Assessment Plan update

Information Technology Strategy and Plan Development Framework *IT/Business Alignment*



Key Principles for Effective Business/IT Strategic Alignment & Planning

IT Plans Must Be Developed Iteratively with the Business & Updated as Necessary

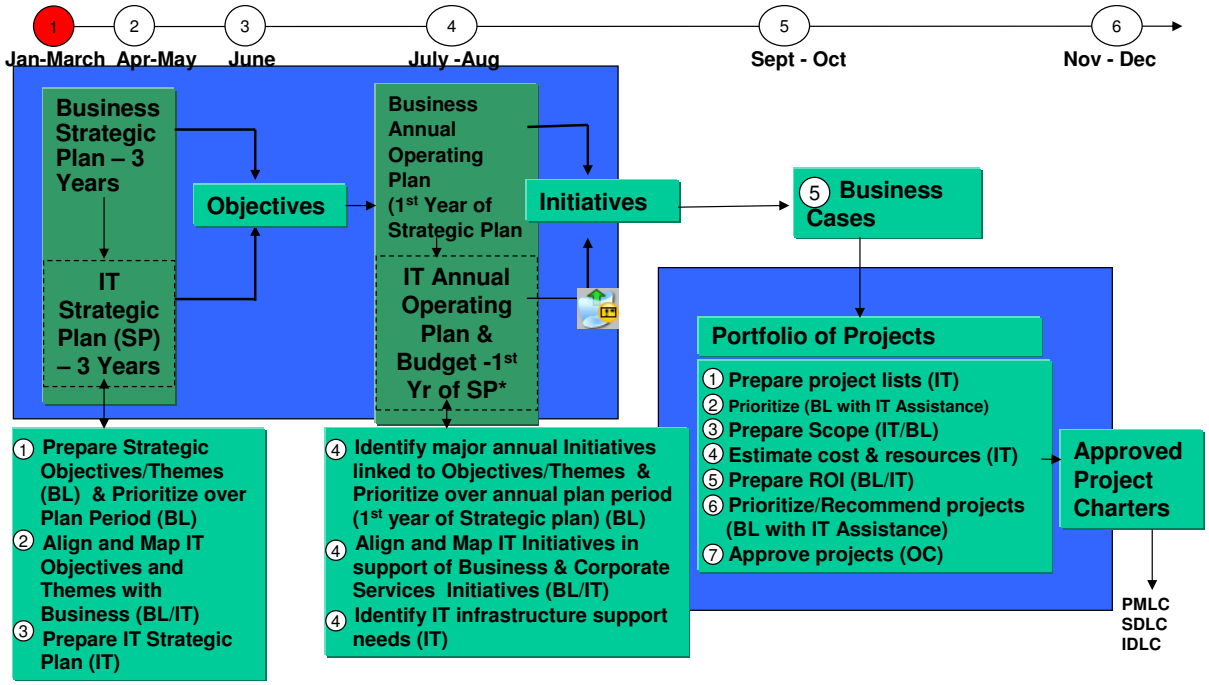
- **Ownership** - CIO with involvement of IT Leadership & of the Executive Officers & Business Unit Leadership
- **Frequency** – IT Strategic Plan is written/revised/refreshed annually, although major changes may cause the plan to be updated more frequently
- **Time Horizon** – IT Strategic Plan usually covers a 3 year period with annual operating plans identifying capital and expense budget levels for first year of plan cycle
- **Plan Process** – IT reviews the Business Strategic Plan major objectives, themes and priorities with the Business Units and Corporate Services
  - IT interviews the business units to align and map IT objectives, initiatives and priorities with the business, using the key plan questions and discussion topics
  - IT identifies major new or enhancement business application or service support initiatives as well as significant technology refresh requirements (e.g. replace obsolete technology; support anticipated growth and new infrastructure requirements) using the Business/It Strategic Plan Initiative Alignment Template
  - Both the business-driven initiatives and the infrastructure initiatives are combined in the IT Strategic plan (which includes a rough estimate of capital funding needs) and presented to the Executive Operating Committee and SBU Heads for approval

Key Principles for Effective Business/IT Strategic Alignment & Planning (Cont'd)

IT Plans Must Be Developed Iteratively with the Business & Updated as Necessary

- **Communication of the IT Strategic Plan** – A short version of the plan is posted on the IT web intranet sight and reviewed with the IT department & appropriate business constituents
- **Link to Annual Operating Plan Budget Plan** - The annual capital and expense budget are approved by the Executive Team for the initiatives identified in the plan. Often, new or break-fix initiatives come up during the year (not in original plan) that require prioritization, funding & resources. A formal portfolio investment management approval process is implemented for that purpose.
- **Link to Portfolio of Projects for Annual Operating Plan –** Once the annual operating plan and budget have been approved, a project list and related business cases are prepared, prioritized and reviewed. Projects charters are developed for approved projects and the appropriate implementation resources are allocated and/or committed.
- **Link to Annual MBOs (Management by Objectives), Performance Measurements, KPIs and Rewards/Incentives –** Both the strategic plan and annual operating plan must be driven by measurable outcomes or results (e.g. cost, time, profit, volume, customer satisfaction, strategic competitive value, etc.) and appropriate management actions taken according to positive or negative target variances.

Strategic Planning Process and Timetable (Illustrative Example for a Manufacturing Company)



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Legend:

BL – Business Leaders	PMLC – Project Management Life Cycle	SP – Strategic Plan
IT – IT Leaders	SDLC – Systems Development Life Cycle	
EC – Executive Committee	IDLC – Infrastructure Development Life Cycle	

Key Select Business/IT Strategic Alignment Questions and/or Discussion Topics*

- What information is critical to support the strategic business plan initiatives and objectives?
- What changes in business direction (and priorities) are planned or anticipated for the plan period?
- What are the current/projected major business/functional opportunities, issues, risks, vulnerabilities and constraints?
- What strategic or tactical value does IT provide to your business or function?
- How can IT add more strategic value (e.g. revenue growth; cost reduction/containment/avoidance, reduce speed to market, business process transformation, business/competitive intelligence, etc. to the business?
- Is the business satisfied with the level of IT service provided?
- What is going well? What is not going well?
- How is IT performance measured? What key performance measures should be used and that are meaningful to the business?

Key Select Business/IT Strategic Alignment Questions and/or Discussion Topics (Cont'd)

- **Is IT developing and maintaining superior and constructive relationships with customers, vendors and others? How can they be improved?**
- **Is IT delivering projects and services on time, within scope, within budget, with high quality and to the customer's satisfaction?**
- **Is IT staffed adequately, wit the right skills and competencies?**
- **Is IT compliant with laws and regulations?**
- **How does IT performance compare to other best practice organizations?**
- **How is IT managing and planning for business/IT continuity, contingencies, disasters, security, risks and back-up?**
- **How effectively is IT in communicating its progress and problems to its constituents? Is a relationship/engagement model used?**

What governance processes & controls have been instituted in IT?

- **Does the Board/Operating Committee/Senior Business leadership review and approve the IT strategy, priorities and funding?**

Business/IT Strategic Plan Initiatives Alignment Template

Category	Business Unit "A"	MLS Business Unit "B"	Corporate Service/Function	Information Technology
Business Initiative				
Business Owner				
Business Lead				
Critical Success Factors, Metrics and KPIs				
High Level Benefits/Measures				
High Level Requirements				
IT Issue/Opportunity				
High Level Deliverables				
Phases/Milestones				
Priority				

Business Plan Organizational Elements*

Section

1. Executive Summary
   - Business proposition
   - Current status of enterprise
   - Market need being met
   - Enterprise's product/service advantage(s)
   - Management expertise
   - Financials

2. Vision, Mission and Strategic Objectives

3. Marketing Plan
   - Market/Industry Analysis
   - Product/Service Offerings and Commercialization
   - Market Segments
   - Competitive Situation
   - Pricing
   - Channels of Distribution
   - Promotional, Advertising and Communications Plan
   - Customer Service
   - Positioning Strategy
   - Alliances and Partners
   - Value Proposition
   - Brand Management

Section

4. R & D, Innovation, IT Operations and Manufacturing/Operations Plan
   - New Product Research and Development
   - Make versus Buy Decisions
   - Product Support
   - Quality Control and Assurance
   - Logistics and Transportation
   - Supply Chain Management
   - Capacity Planning
   - Innovation Planning
   - IT Development, Support and Operations

5. Human Resources Plan
   - Management team background & requirements
   - Positions/Employee skills and competencies
   - Training and special people issues
   - Succession Planning

6. Risk Analysis
   - Business Risks
   - Economic Risks
   - Customer/Competitor Risks
   - Technology Risks
   - Business Continuity and Disaster Prevention and Recovery Risks

7. Financial Plan
   - Income Statements (Actual and Pro Forma)
   - Balance Sheet (Actual and Pro Forma)
   - Cash Flow Statement (Actual and Pro Forma)
   - Capital Budget (Actual and Pro Forma)

* Source: Modified from Connecticut Innovations

IT Strategic Plan Outline (Illustrative Example – Bank)

1. **Objectives of Document**
2. **Executive Summary**
3. **Previous IT Plan Strategies, Accomplishments and Status (including a SWOT and Gap Analysis)**
4. **Corporate Strategy Map and Major Business Initiatives**
5. **Business Unit Strategies (all include Current and Target State) (New and Revisions to IT Applications are Identified)**
   - **Retail Banking**
   - **Commercial Banking**
   - **Real Estate**
   - **Shared Services**
     - **Human Resource**
     - **Finance**
     - **Legal**
     - **M & A and Planning**
     - **Bank Operations**
6. **IT Infrastructure Strategies (Technology Refresh and New Requirements)**
7. **Principles of IT**
8. **IT Financials (mostly capital requirements as well as multi-year project budgets)**

IT Strategic Plan Outline (Illustrative Example – Major University)

1. **Executive Summary**
2. **IT Vision and Mission**
3. **Where we are today: The Scope of the Challenge**
4. **Competitive Challenge (Comparison to Other Best Practice Organizations on Multiple Levels**
5. **Aligning IT with University's Strategic Goals**
6. **Strategic Goals and Initiatives**
   - **Strategic Programs**
   - **IT Governance**
   - **Customer Relationship Management**
   - **Courseware**
   - **Alumni**
   - **Process Excellence**
7. **Financials (High Level) – These are linked to first year of the annual operating plan and budget)**
8. **Appendices**
   - **Competitive Analysis**
   - **SWOT Analysis**
   - **Major Risks and Risk Mitigation**
   - **IT Governance – Roles, Responsibilities and Ownership**
   - **IT Guiding Principles**
   - **Decision Rights**

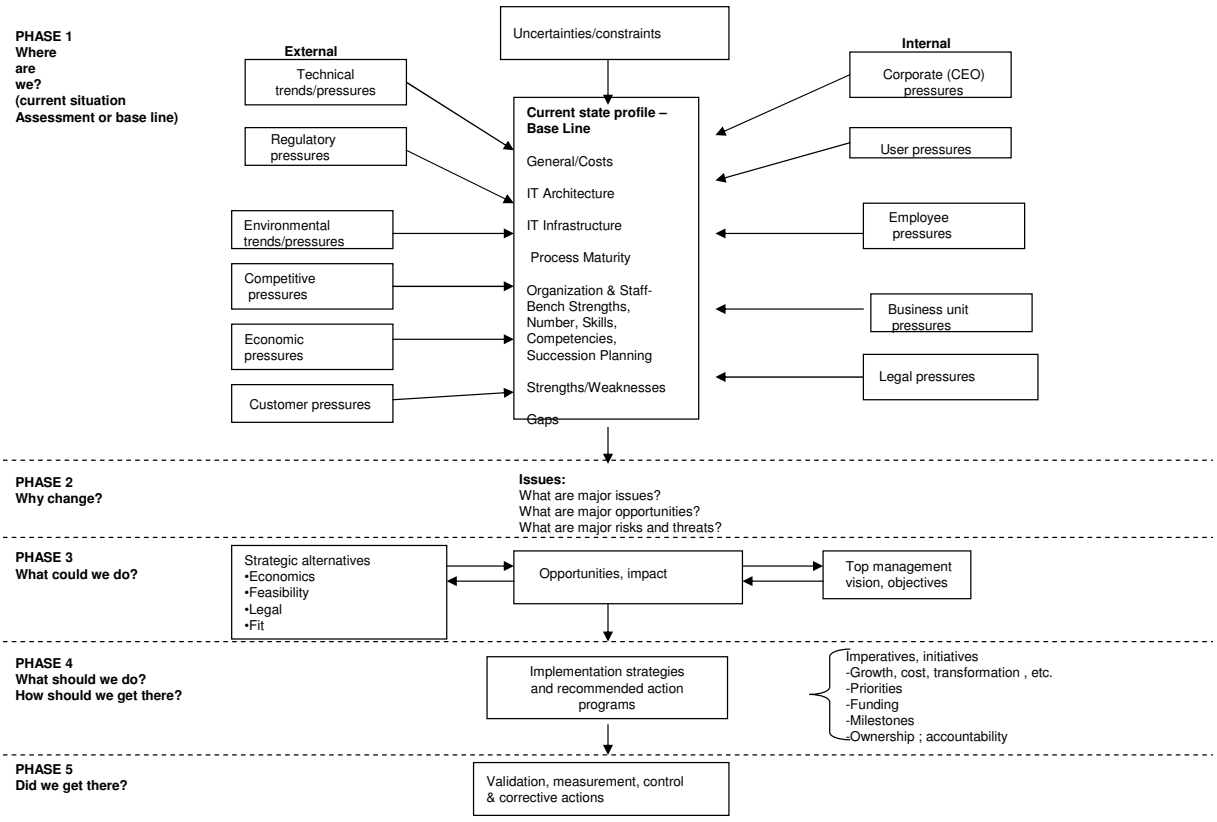
IT Strategic Plan Outline (Illustrative Example) *IT/Business Alignment*

1. **Executive Summary**
2. **Introduction and Background**
   - Purpose & Objectives
   - Plan Methodology and Team
   - Business Vision, Objectives and Strategies
   - IT Vision, Objectives and Strategies
3. **Situation Assessment (Where are we? – Reference Base)**
   - External Trends – Technology, Environment, Economic, Life-Style, Markets & Customers, Regulatory, Competition, etc.
   - Internal Pressures – CEO, Business Units, Functional Departments, Employees, Unions, etc.
   - IT Organization Profile – Organization, Staffing and skills;

   User Needs and Satisfaction; Level of Maturity; Revenue/expense profile; Infrastructure profile; application profile; Core Competencies; Strengths & Weaknesses
4. **Major Business/IT Gaps, Needs, Opportunities and Alternatives (Why Change? What Could We Do?)**
   - **Macro Assessment of Needs** (Discretionary and non-Discretionary) and Opportunities by Company, Business Units and Key Functional Areas
   - **Macro Assessment of Costs, Benefits, Value, Risk (of doing and not doing) and Priorities** (by Company, SBUs and Key Functions)
   - Infrastructure Alternatives
   - Architecture Alternatives
   - Application Alternatives
   - Organization/Control/Administration
   - People Development
   - Business IT Continuity, Security and Backup

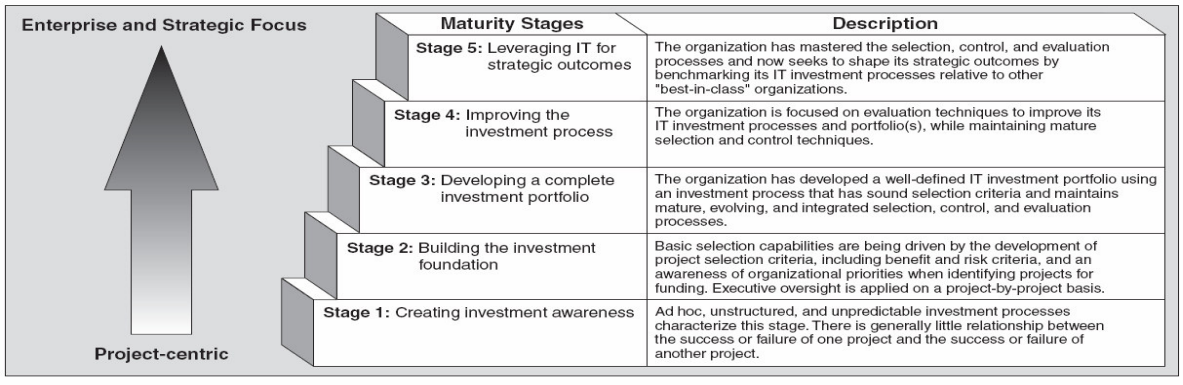
4. Cont'd
   - Build versus buy (Outsourcing)
   - Funding levels and prioritization
   - Standards and Compliance
   - Governance policy and process
5. **Strategies and Actions (What Should We Do? How Do We Get There?)**
   - New/ Enhancement Applications
   - Maintenance
   - Discretionary projects
   - Non-Discretionary support activities
   - Architecture Direction
   - Infrastructure Direction
   - Resource requirements
   - Contingency, Security, Risk & Disaster Recovery
   - Governance & Compliance
6. **Financials**
   - Capital and expense
   - Headcount
7. **Plan Execution (Did We Get There?)**
   - Critical Success Factors
   - Key Performance Indicators and Report Cards

IT Plan Presentation Template



The Five Stages of IT Investment Management Maturity *IT/Business Alignment*

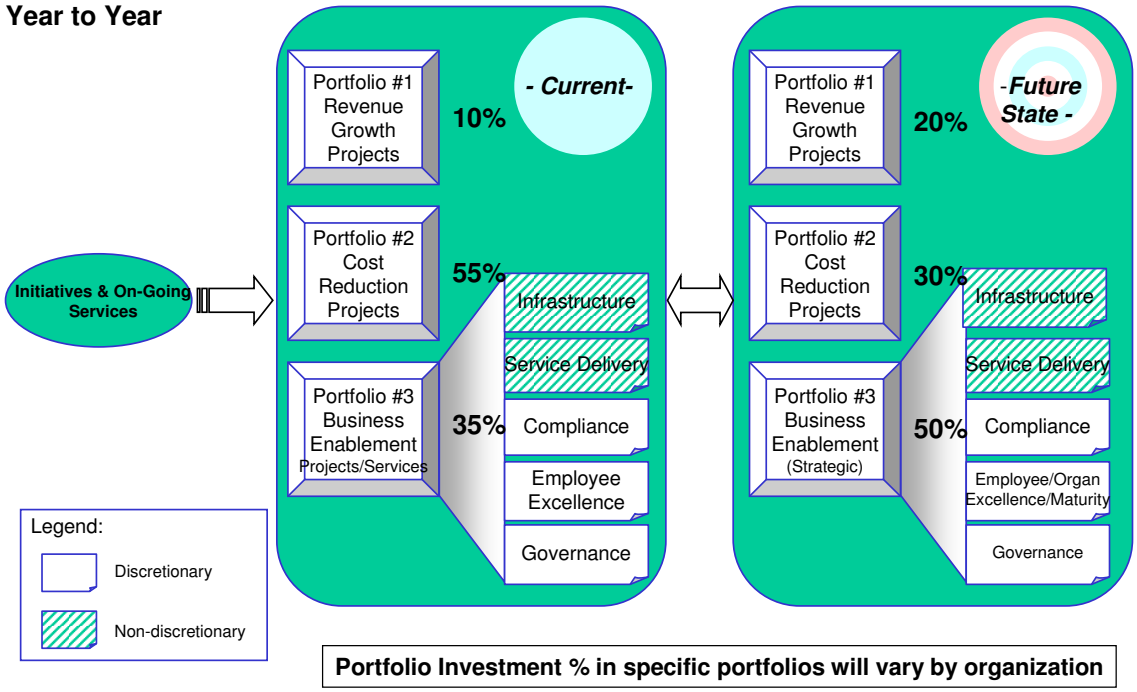
This framework can be used by organizations and provides a roadmap for achieving higher levels of IT investment management alignment and maturity



Source: GAO.

Strategic IT Investment Alternatives (Illustrative Example)

IT Investment Management Portfolio Alternatives Consist of Discretionary (Optional), Strategic and Mandatory (Keep the Lights ON) Requirements and the Amount of Investment % in Each Portfolio Should be Driven by Business Needs and Will Change from Year to Year



Portfolio Investment % in specific portfolios will vary by organization

Value Proposition Processes for IT Investments — *IT/Business Alignment*

Key IT Investment Process Areas are Portfolio Investment Management, Business Case Development and Execution Management

Portfolio Investment Management

- Define investment criteria to evaluate, prioritize and authorize investments
- Manage, monitor and govern the overall portfolio performance
- Analyze the alternatives
- Assign clear accountability, ownership and decision rights

Business Case Development

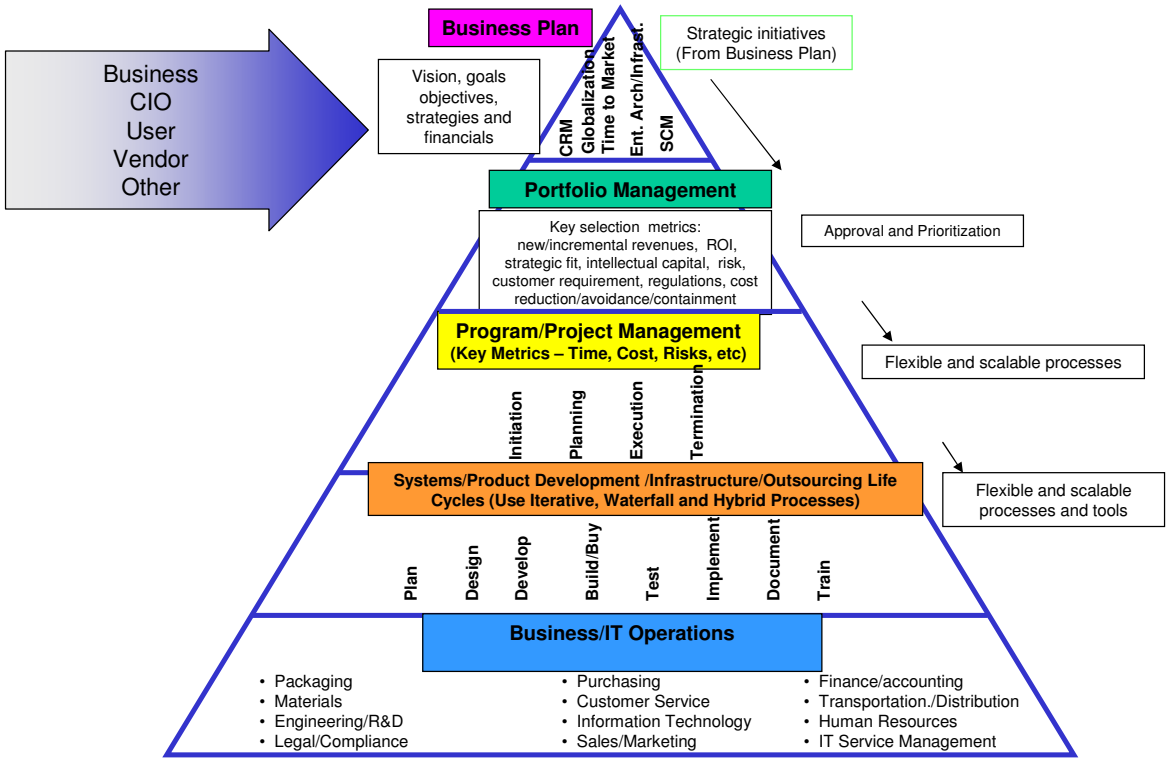
- Opportunity or Problem Drivers
- Objectives
- Assumptions
- Costs/Benefits
- Risk, financial returns, strategic, alignment or other (compliance) scores

Execution Management

- Program/Project Management
- Service Management and Delivery
- Business Process Enabled Changes
- Benefits Realization and Key Metrics

IT/Business Alignment & Portfolio Investment Management Triangle

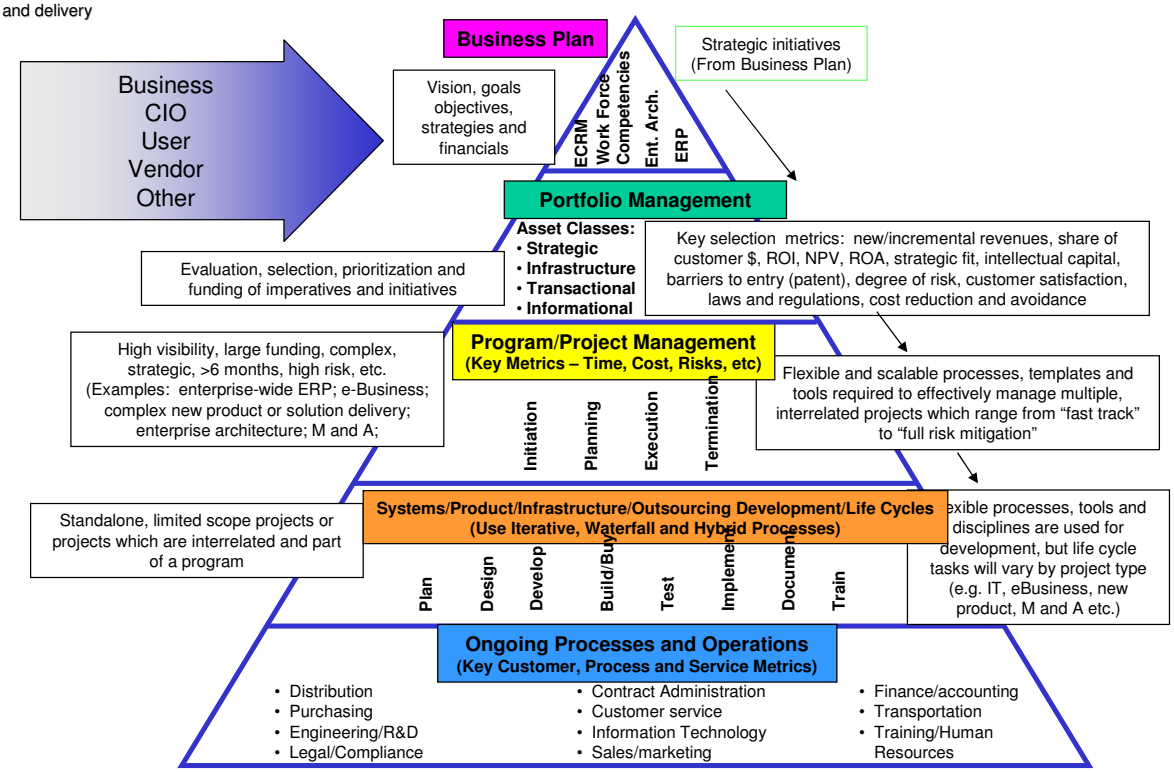
Business Plan/Portfolio Investment/Project Life Cycle - Initiatives must be identified in the business plan, compete for funding (Portfolio Investment Management) and should use PM/SD life cycle methodologies to Deploy to Operations



IT/Business Alignment & Portfolio Management Triangle

IT/Business Alignment

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 and on-going IT service management and delivery



IT Engagement (Relationship) Model to Improve & Sustain VOC *IT/Business Alignment*

- **IT must become more customer-centric and marketing oriented to develop closer and better relationships with the business.**
- **A growing number of enterprises have instituted an IT Engagement (Relationship) Model**
- **Goals of the IT Engagement Model:**

  - **Single Point of Contact** – Establish a single point of contact between IT and the Business to build a better partnership and collaboration between IT and the business

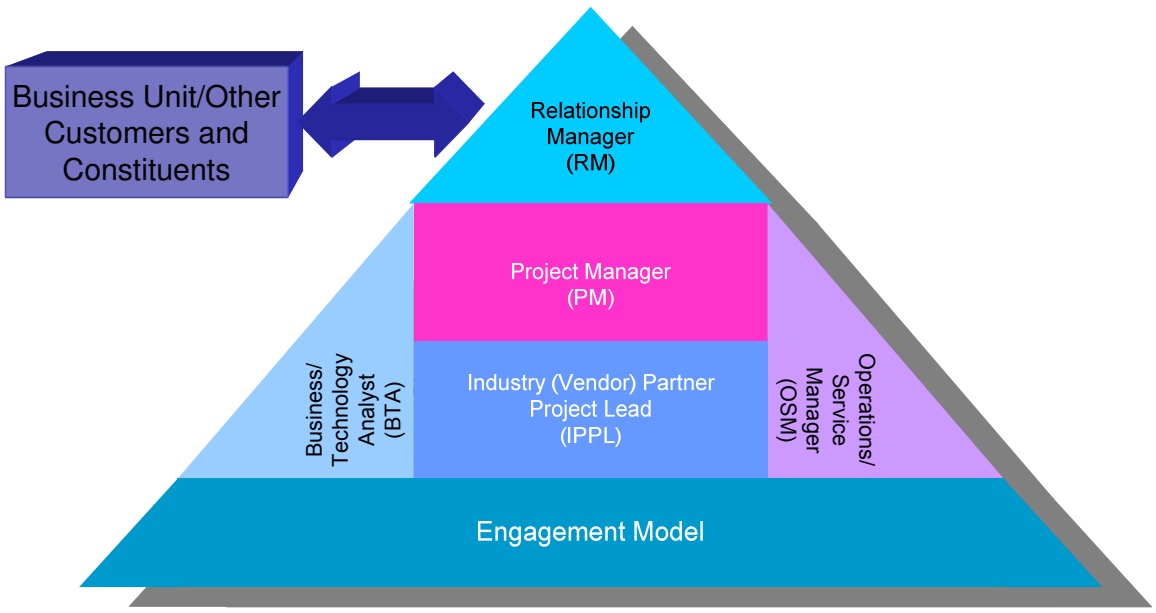
  - Define standard, enterprise-wide **Rules of Engagement** for acquiring IT services

  - Clarify **roles, responsibilities and accountabilities** for plans, budgets, work requests and issues resolution
    - Within IT
    - Between IT and business

  - Improves service delivery through a **consistent process for engaging the right people at the right time** using a consistent set of people

Business/IT Engagement and Relationship Model

Illustrates the roles and responsibilities of the business and IT to develop a more collaborative environment at multiple levels. This is customizable for any organization



*Relationship Manager = Interface to the Customer

Business/IT Engagement and Relationship Model (Cont'd)

Role	Responsibilities
Customer	• Initiates request/project with Relationship Manager • Develops and approves Business Case • Approves Statement of Work and Requirements • Approves deliverables from a business perspective • Participates in governance, business issue(s) resolution and user training • Conducts and approves user acceptance testing and operational service levels •Participates in post-implementation review/assessment
Relationship Manager (RM)	• Serves as the primary POC (Point of Contact) between the customer/process owner and IT • Develops Service Level Agreements (SLAs) and other KPIs with the customer/process owner • Ensures that appropriate authorizations and funds are obtained and available for all requests • Ensures projects follow the Change and Release Management process
Business and Technology Analyst (BTA)	•Collaborates with Relationship Manager and customer/process owners to identify opportunities for exploiting technology to achieve strategic business advantage •Has responsibility for the overall technology design of a given system: – Oversight and direction for architectural decisions – Consultative support during infrastructure deployment •Ensures that technology decisions conform with Enterprise Architecture guidelines •BTA coordinates status, activities and deliverables with the Lead PM

Business/IT Engagement and Relationship Model (Cont'd)

Role	Responsibilities
Operations/ Service Manager (OM)	•Coordinates and provides operational oversight for technical infrastructure components and projects in support of the Relationship Manager or the business •Provides accurate reporting of progress for all technical components of projects •Conducts and approves operational acceptance testing prior to steady-state implementation •Tracks configuration, release controls, help desk services and operational continuity
Project Manager (PM)	•May be the Relationship Manager •Project Manager is responsible for the deliverables and coordinates project activities, status and deliverables with the Project Team and provides status reports
Industry (Vendor) Partner Project Lead (IPPL)	•Project Lead coordinates project activities, status and deliverables with the Project Team and provides status reports to Project Manager •Manages day-to-day project activities •With the Project Manager, responsible for managing deliverables

Financial Services Organization

Environment	**Approach**
• Asset range - $15 – 25 Billion • Number of Employees – 3,000 – 5,000 • Number of IT Employees – 150 – 300 • Very competitive industry with many mergers and consolidation • Conservative management (risk averse) • High use of technology for product delivery and to business unit support •CIO reports into President and CEO and is a member of the Executive Management Team	• Adopted COBIT as the general framework to guide IT process improvements for development and operations. • Identified 12- 14 COBIT IT process areas and assigned each process to one or more IT managers to develop, implement and own. • Adopted ISO 17,799 framework for IT security • Executive Capital Committee approves major investment funding • IT Steering Committee (business and IT) establishes IT priorities, reviews progress and approves major changes
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	**Approach (Cont'd)** • Issued general IT principles or vision which guide how IT is managed (e.g. trust, flexibility, 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

Financial Services Organization

Results - Alignment	**Results -IT Service Management & Delivery**
• Capital budgeting process is linked to strategic and annual operating plan for IT and business • IT 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 an customer/IT engagement (single point of contact) model to improve relationships, build trust and focus on priorities • Closer alignment is being improved continuously	• 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
Results - Program/Project Management • Established a PMO center of excellence staffed with certified PMPs • Developed a flexible and scalable PM process to handle fast track 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 - Performance Management & Management Controls** • COBIT & ISO 17799 are used as the frameworks to define, develop and deploy the IT management controls • Select IT metrics are included in the company's balanced scorecard: financial (e.g. 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.

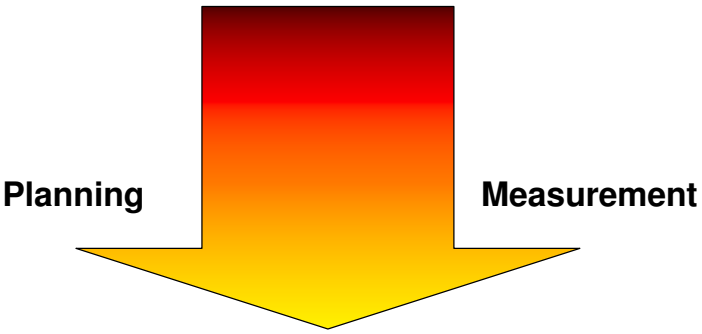
Critical Success Factors • Executive sponsorship is critical • CIO and executive team must be proactive and provide oversight • IT governance must be decomposed and assigned to process owners with schedules , budgets and deliverables • Metrics should be linked to business and It critical success factors	
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	

Summary

• Different levels of management and users perceive the value of IT differently.
• Business value of IT is also more difficult to measure the higher one tries to apply metrics in an organization (e.g. Increased business profitability as a result of a technology application).
• Therefore, it is important not only to focus on measurements based on value realization (e.g. quantitative) but also to take into account the enterprise's performance and process improvements in creating the value.
• IT/Business alignment or harmony represents a journey, is complex, multi-dimensional and never complete. However, there are IT/Business alignment principles (e.g. planning, investment portfolio management, relationship model, steering and governance boards, etc) that if implemented will help to achieve a more effective and mature alignment.

4.0 Program/Project Management (PM) Excellence

Flexible Discipline and Teamwork



Improved Performance
(and Less Stress)

Objectives

- Provide an overview of the key principles, issues, concepts and processes for effectively managing enterprise wide and limited scope programs and projects.
- Understand the driving forces and value proposition of PM
- Review the PM maturity model and framework
- Understand how to link the IT plan to programs and projects
- Understand the mandatory and discretionary key performance indicators and metrics to manage programs and projects effectively

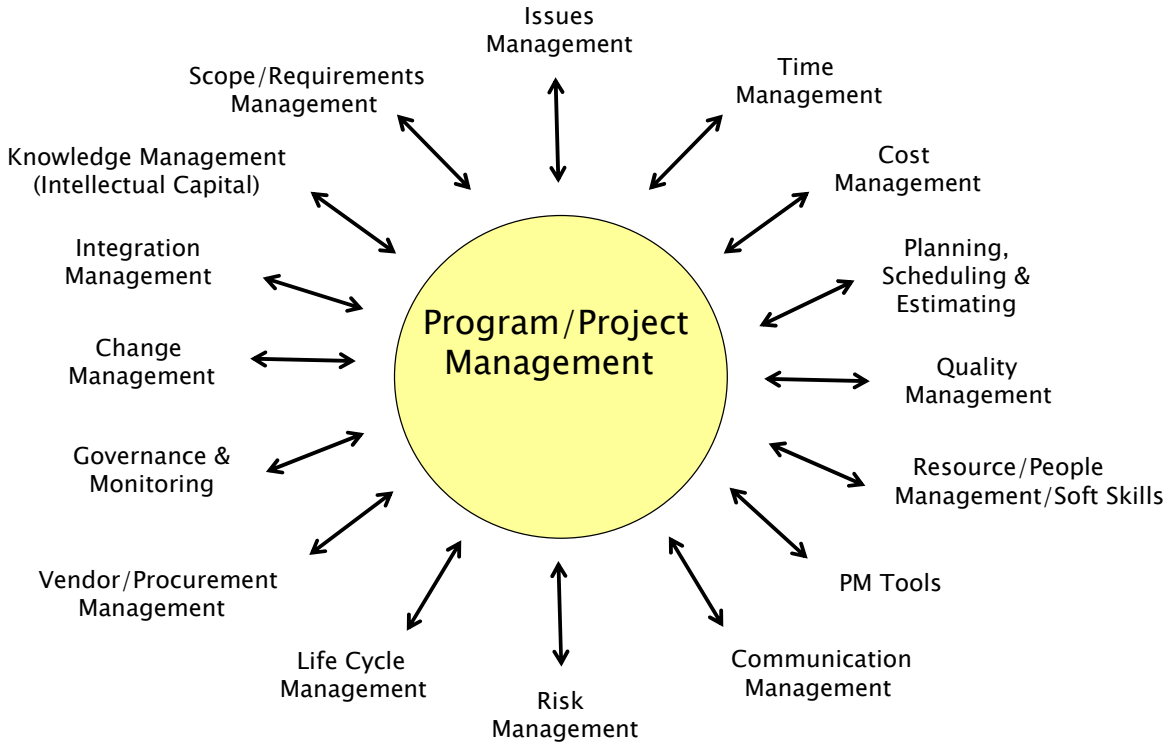
Term	Definition	Examples
Program	Consists of multiple interrelated projects and is usually large, complex and with high visibility & high $	SAP
Project	A discrete, one-time event that consists of such attributes as time, cost, resources, risk, deliverables, etc.	Sap Module - Purchasing
Task	A discrete element of work	Order equipment
Process	A continuous work effort to support a business or IT function	Service Management; Service Desk; Sales Order Process

Value Propositions & Benefits of Program/Project Management from Leading Organizations*

- Provided **better control of scope changes** & ensures efficient use of project dollars **(Ford)**
- **Consistent & repeatable use of PM processes** on a global basis **reduced project time & costs** & **sped up deliverables and facilitated training** (**IBM)**
- Developed a **better working relationship and communications with the customer** and other project constituents (Nortel)
- Aligned project initiatives and investments more effectively with **business and improved quality** (GE)
- **Improved** IT project accountability and documentation (Purdue Pharma)
- **Increased** our **customer satisfaction (Lucent)** by demonstrating our commitment to schedules
- Project Management **education and certification** resulted in **more cost effective and timely program/project performance and vendor (outsourcing) management (Federal Technology Service)**

* Based on primary & secondary current and emerging best practice research conducted by GPS Group, Inc.

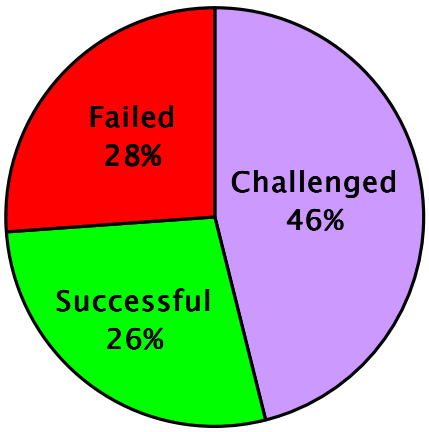
Program/Project Management is Complex & Requires Multiple Competencies



Major Causes of Program/Project Failures

The Cost of Failure

Nearly ¾ of all projects fail or run into trouble



An estimated $100 -150 billion per year is spent on failed and cancelled projects in USA (out of a total estimated spend of $250 billion)

Successful (S) = completed on-time, on-budget and within scope

Challenged (C) = completed, but with time and/or budget overruns and fewer features than originally specified

Failed (F) = cancelled before completion

Company Size	S	C	F
Large	9%	62%	29%
Medium	16%	47%	37%
Small	28%	50%	22%

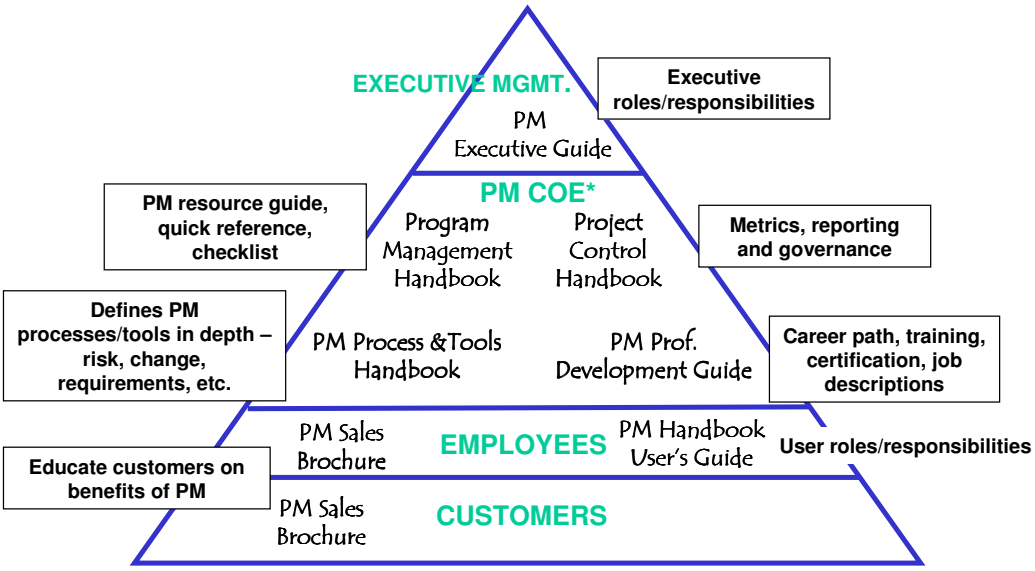
Source: Blend surveys by the Standish Group and Gartner

Select Actions to Overcome Major Project Management Obstacles

Obstacles	Actions
Resistance to PM due to time investment	**Create flexible and scalable PM processes with mandatory and discretionary components (e.g. "fast track" vs. "full risk mitigation")**
Lack of PM value proposition awareness	**• Quantify PM benefits (time savings, quality improvements, cost reductions, customer satisfaction and create/maintain a scorecard) • Create PM advocacy groups that share information, follow uniform process and document PM value lessons learned • Market and communicate value of PM to multiple constituencies**
Limited support from the top	**• Identify proactive PM executive champions and use them to persuade others • Demonstrate benefits of PM by using key metrics (e.g. improved customer satisfaction, reduced cycle time) to gain supports**
Insufficient dedicated qualified PM resources	**• Continuous training of relevant constituencies • Reward and recognition of certification • Career path options – professionalize PM • Funding and support of "PM Centers of Excellence"**

Project Management Used as a Marketing Tool (Illustrative Example) – Telecom Company

A Telecom company strongly supported project management disciplines and developed a series of PM documentation for different constituents. A PM sales brochure was developed for its customers that promoted the idea that by implementing a PM best practices, the customer's benefited in many ways, including on time delivery of products.



*COE= Center of Excellence

Program/Project Management

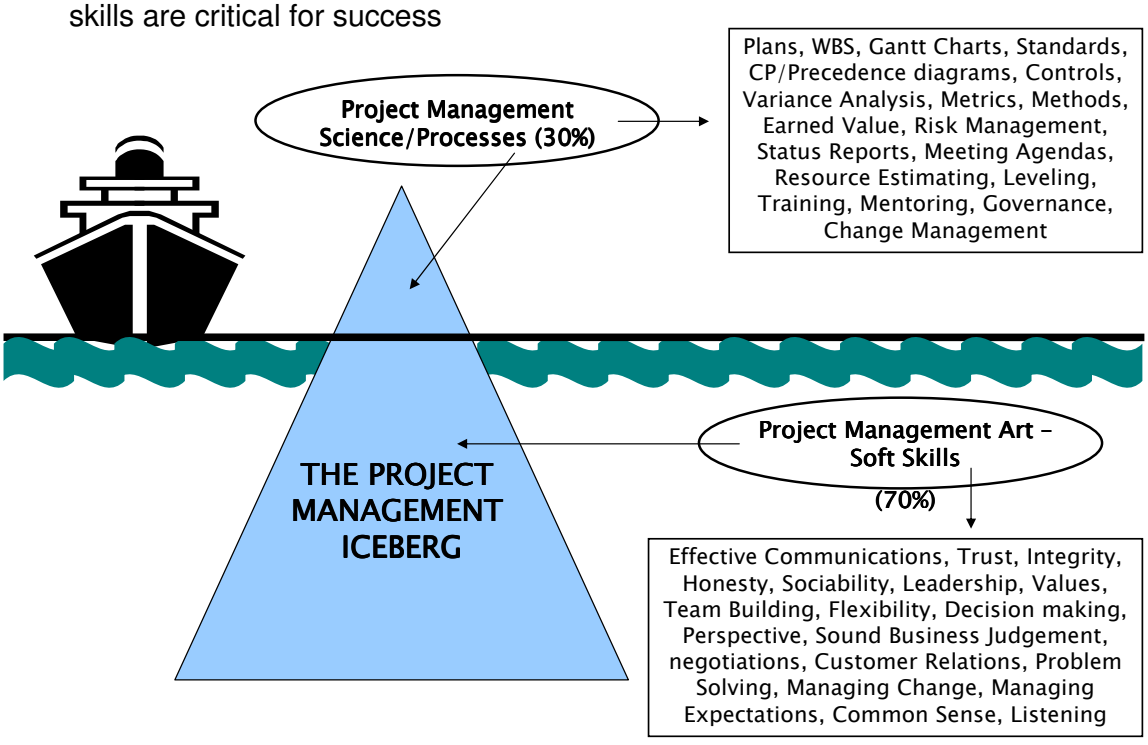
Principles for Achieving Program/Project Management Excellence

- **Create the right environment and culture**:
  - Establish the **appropriate organizational mindset**, culture and environment
  - Obtain **executive sponsorship**, commitment and **multi-level management** buy-in
  - Obtain **customer/other stakeholder/project team** commitments and ownership
  - Success depends on creating a sustainable **foundation (e.g. policy, process, metrics,) for managing programs and projects and integrating results and methodologies into the culture of the organization**
  - Define roles - **Get the right people involved in every program/project phase**
  - Market and **re-enforce** (e.g. training, rewards, mentors, tools, flexible processes) the **value and benefits of good PM practices**
  - Adopt a flexible and scalable PM process (phases, templates, repository, tools) [tailor when required] to accommodate different program and project types (complexity, size, value, etc.) based on current and emerging industry best practices
- **Develop program/project plans(based on a flexible and scalable process)**:
  - Define the project's scope, objectives, requirements and deliverables
  - Establish well-defined phases/tasks, go/no go gates and milestones (break the job down into manageable work packages – **80 hour rule**) with realistic baselines (costs, time, resources and contingencies) based on short term incremental and visible deliverables
  - Define a **responsibility assignment matrix – Responsible, Inform, Consult and/or Approve**
  - Establish formal change management and risk management processes

Principles for Achieving Program/Project Management Excellence (cont.)

- **Ensure governance and excellent communications:**
  - Establish a governance, control, reporting and escalation policy and process
  - **Manage expectations** of all stakeholders proactively
  - Identify, measure and **track vital signs, metrics, key issues** and take necessary actions quickly – knock obstacles out of the way
  - Establish frequent and **open communications** with stakeholders (both formal and informal review meetings – daily, weekly, monthly, quarterly
  - Ensure accurate, timely and **meaningful** monitoring and progress reporting and take decisive actions
- **Institutionalize a PM policy with flexible and scalable processes**
  - Create **PM Centers of Excellence** (e.g. Advocacy Center, Help Desk, Education, Training, Expert Help, Process, Project Tracking, Certification, etc.)
  - Create a reward and/or recognition policy to re-enforce and sustain
  - Conduct formal program/project reviews
  - Develop and use consistent, flexible and scalable PM processes (e.g. Fast Track versus Full Risk Mitigation Projects & Automate processes and tools (Web based)
  - Capture and apply **lessons learned** and focus on continuous improvement

Essential Skills for Program/Project Management - People and interpersonal skills are critical for success

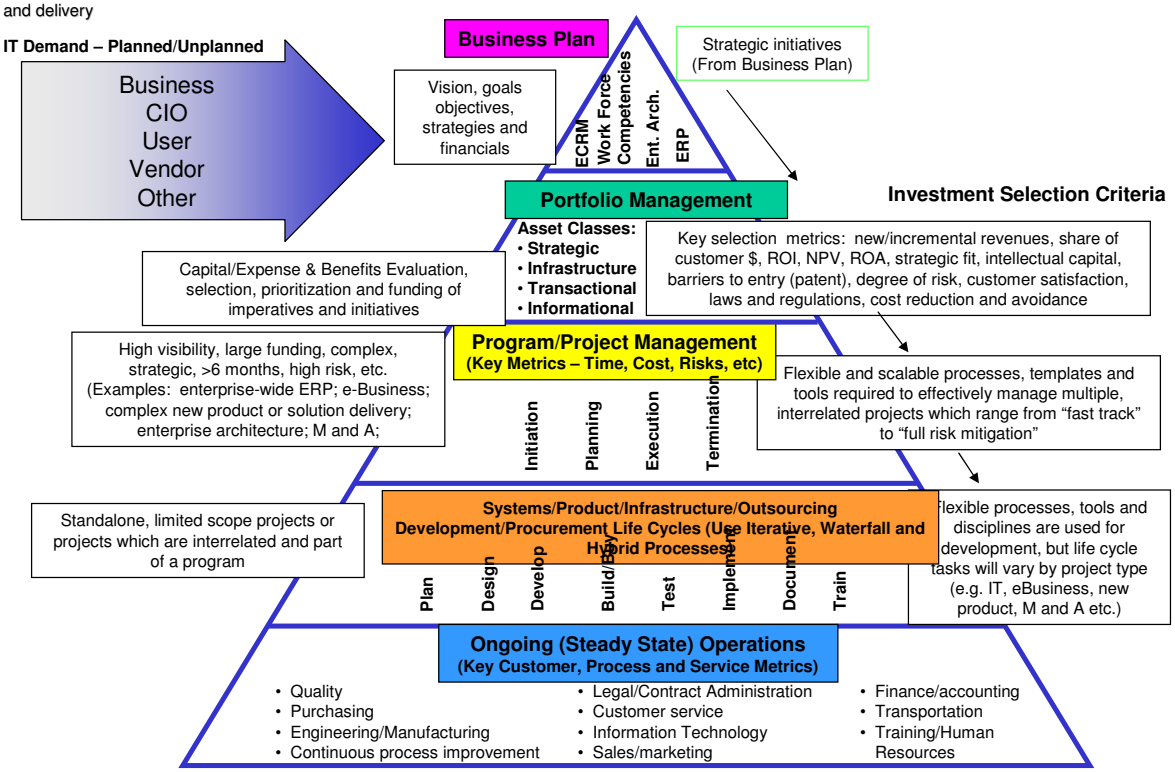


Project Management Maturity Model and Roadmap – Maps PMI's 9 PMBOK Knowledge Areas with the SEI's CMM 5 Level Model of maturity

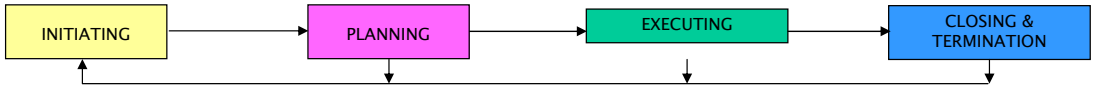
Levels of Project Management Maturity	Level 1 Initial Process	Level 2 Structured Process and Standards	Level 3 Organizational Standards and Institutionalized Process	Level 4 Managed Process	Level 5 Optimized Process
Project Integration Management	No established practices, standards, or Project Office. Work performed in ad hoc fashion.	Basic, documented processes for project planning and reporting. Management only involved on high-visibility projects.	Project integration efforts institutionalized with procedures and standards. Project Office beginning to integrate project data.	Processes/standards utilized by all projects and integrated with other corporate processes/systems. Decisions based on performance metrics.	Project integration improvement procedures utilized. Lessons learned regularly examined and used to improve documented processes.
Project Scope Management	General statement of business requirements. Little/no scope management or documentation. Management aware of key milestones only.	Basic scope management process in place. Scope management techniques regularly applied on larger, more visible projects.	Full project management process documented and utilized by most projects. Stakeholders actively participating in scope decisions.	Project management processes used on all projects. Projects managed and evaluated in light of other projects.	Effectiveness and efficiency metrics drive project scope decisions by appropriate levels of management. Focus on high utilization of value.
Project Time Management	No established planning or scheduling standards. Lack of documentation makes it difficult to achieve repeatable project success.	Basic processes exist but not required for planning and scheduling. Standard scheduling approaches utilized for large, visible projects.	Time management processes documented and utilized by most projects. Organization wide integration includes inter-project dependencies.	Time management utilizes historical data to forecast future performance. Management decisions based on efficiency and effectiveness metrics.	Improvement procedures utilized for time management processes. Lessons learned are examined and used to improve documented processes.
Project Cost Management	No established practices or standards. Cost process documentation is ad hoc and individual project teams follow informal practices.	Processes exist for cost estimating, reporting, and performance measurement. Cost management processes are used for large, visible projects.	Cost processes are organizational standard and utilized by most projects. Costs are fully integrated into project office resource library.	Cost planning and tracking integrated with Project Office, financial, and human resources systems. Standards tied to corporate processes.	Lessons learned improve documented processes. Management actively uses efficiency and effectiveness metrics for decision-making.
Project Quality Management	No established project quality practices or standards. Management is considering how they should define "quality."	Basic organizational project quality policy has been adopted. Management encourages quality policy application on large, visible projects.	Quality process is well documented and an organizational standard. Management involved in quality oversight for most projects.	All projects required to use quality planning standard processes. The Project Office coordinates quality standards and assurance.	The quality process includes guidelines for feeding improvements back into the process. Metrics are key to product quality decisions.
Project Human Resource Management	No repeatable process applied to planning and staffing projects. Project teams are ad hoc. Human resource time and cost is not measured.	Repeatable process in place that defines how to plan and manage the human resources. Resource tracking for highly visible projects only.	Most projects follow established resource management process. Professional development program establishes project management career path.	Resource forecasts used for project planning and prioritization. Project team performance measured and integrated with career development.	Process engages teams to document project lessons learned. Improvements are incorporated into human resources management process.
Project Communications Management	There is an ad hoc communications process in place whereby projects are expected to provide informal status to management.	Basic process is established. Large, highly visible projects follow the process and provide progress reporting for triple constraints.	Active involvement by management for project performance reviews. Most projects are executing a formal project communications plan.	Communications management plan is required for all projects. Communications plans are integrated into corporate communications structure.	An improvement process is in place to continuously improve project communications management. Lessons learned are captured and incorporated.
Project Risk Management	No established practices or standards in place. Documentation is minimal and results are not shared. Risk response is reactive.	Processes are documented and utilized for large projects. Management consistently involved with risks on large, visible projects.	Risk management processes are utilized for most projects. Metrics are used to support risk decisions at the project and the program levels.	Management is actively engaged in organization-wide risk management. Risk systems are fully integrated with time, cost, and resource systems.	Improvement processes are utilized to ensure projects are continually measured and managed against value-based performance metrics.
Project Procurement/ Vendor Management	No project procurement process in place. Methods are ad hoc. Contracts managed at a final delivery level.	Basic process documented for procurement of goods and services. Procurement process mostly utilized by large or highly visible projects.	Process an organizational standard and used by most projects. Project team and purchasing department integrated in the procurement process.	Make/buy decisions are made with an organizational perspective. Vendor is integrated into the organization's project management mechanisms.	Procurement process reviewed periodically. On-going process improvements focus on procurement efficiency and effective metrics.

High Level Flow – From IT/Business Alignment, Portfolio Management, PM/SDLC & to Steady State Operations

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 and on-going IT service management and delivery



Project Management Life Cycle Phases & Key Components - Overview



- Business Need/Case
- Feasibility
- Authorization
- Funding
- Project Charter
- Project Organization
- Project Management Office (PMO)
- Critical Success Factors
- Project Metrics & Vital Signs
- Go/No Go Gate

Enterprises must develop consistent, but scalable & flexible PM processes to fit different types & sizes of programs and projects

- Requirements & Scope
- Objectives
- Deliverables
- Work Breakdown Structure
- Stakeholders
- Assumptions & Constraints
- Estimates–Costs, Resources, Effort & Time
- Sequence Tasks
- Schedule
- Resources
- Roles, Responsibilities & Staffing Plan
- Quality Management Plan
- Risk/Contingency Management Plan
- Disaster Recovery Plan
- Change Management Plan
- Communications Management Plan
- Acceptance Management Plan
- Integrated Project Plan (of multiple inter-related projects)
- Vendor/Outsourcing Plan
- Go/No Go gate

- Executing the Plan & Delivery (e.g. SDLC; PMLC)
- Governance Structure & Escalation
- Developing the Team (separate module)
- Progress Reporting, Communications & Meeting Management
- Comparison of Metrics & Vital Sign Baseline to Actuals
- Education & Training
- Vendor/Outsourcing Management
- Change Control
- Risk Control
- Quality Control
- Go/No Go gate

- Project Acceptance & Approval
- Final Documentation
- Lessons Learned
- Finalize Project File
- Administrative & Contract Closure
- Post Implementation Review & Follow-Up (1 month, 3 months, 6 months)

Governance & Control Spans all Phases

IT Demand Management – Classifications (Illustrative Example) Exhibit 6

IT Demand Management Generally Comes in Several Flavors – Mandatory and Discretionary – Both should be identified and resourced in the IT Strategic and Operating Plan and Budgets - If they are not in the plan, each request should be evaluated on its own merits against consistent alignment, investment and service criteria. A steady state (normalized and repeatable) service could be included in a service catalogue.

Classification	Type of Request or Demand Mgt.	Comments/Description
Mandatory (Business Enablement)	Service Interruption (Break & Fix)	A problem caused the disruption of IT service and must be fixed and restored as soon as possible
	Maintenance	Scheduled maintenance must be performed to keep applications and infrastructure operating efficiently
	Keep the Lights On and Legal/Regulatory	The costs and resources required to support the basic steady state operations of the business, including some components of infrastructure
Discretionary* (Require ROI)	Major New/Change (Complex) Initiatives (Full Risk Mitigation)	Complex new initiatives or major changes (major enhancements or modifications) to systems, processes or infrastructure and provide new or additional functionality or capacity
	Fast Track (New/Change) (Simple or Limited Scope)	Simple new initiatives and minor changes that do not required the rigor and discipline of a complex initiative and be fast tracked.
	Standard (Repetitive) Request	Describe product/ service (functions, features and price and place in a product/service catalogue)
Strategic	Major initiative – Realistic ROI may not be doable – too early	A strategic initiative may fall into several categories – first market mover (new product or service); R & D; competitive advantage, etc.

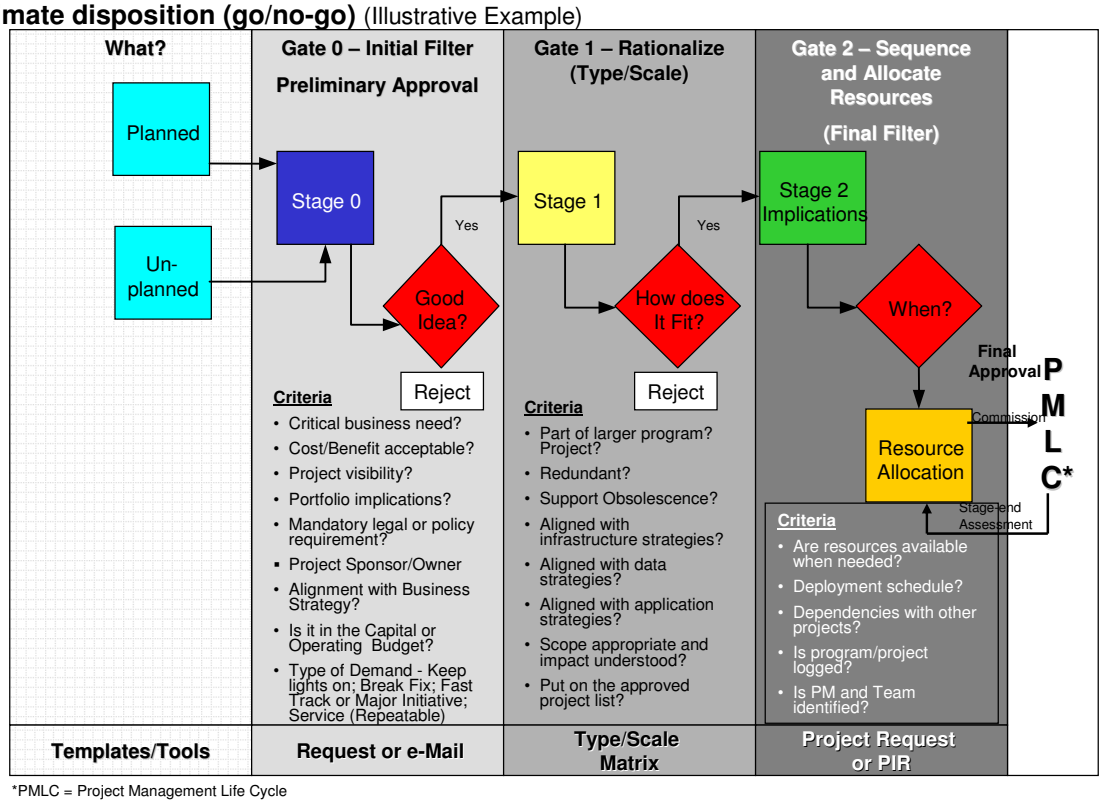
*Note: Criteria for differentiating between complex or fast track initiatives or service catalogue listings will vary for each organization.

Generic Program/Project Business Case Outline (Illustrative Example)

1. **Executive Summary (Synopsis of Business Case Assessment):**
   - Purpose, Objectives, Strategy and Scope
   - Description of Opportunity, Value and Alignment
   - Dependencies, Assumptions, Constraints
   - Sponsor and Management Team
   - Costs/Benefits/Risks/Issues
2. **Assessment of Current Environment (Reference Base –Where are we today?):**
   - Current Processes, Functions and Technology
   - Current Costs, Resources, Volumes, Locations
   - Major Issues, Constraints and Sensitivities
3. **Change Analysis (Why Change?)**
   - Value Proposition Analysis
   - Financial Analysis (description and quantification; full economic life cycle; best case, worse case, most likely case; cash flow (cash in and cash out); costs/savings)
   - Non-Financial benefits
   - Risk Analysis & Mitigation
4. **Proposed Solutions (What Could We Do?)**
   - Proposed Requirements, Processes, Functions and Technology
   - Proposed Cost/Benefit Analysis
   - Major Issues, Constraints and Sensitivities
   - Impact on the Organization, Resources, People, Technology
   - Pros/Cons of each solution
5. **Recommended Approach (What Should We Do and How Do We Get There?**
   - Macro Plan, Milestones and Schedule
   - Critical Success Factors
   - Macro Plan, Milestones and Schedule
   - Conversion, Transition Plan and Team
   - Quality and Test Plan
   - Key Performance Indicators
6. **Appendices**
   - Detailed Project Plan
   - Detailed Cost Benefit Analysis
   - Detailed Risk Management Plan
   - Detailed Contingency and Backup Plan
   - Detailed Communications Plan
   - Critical Success Factors

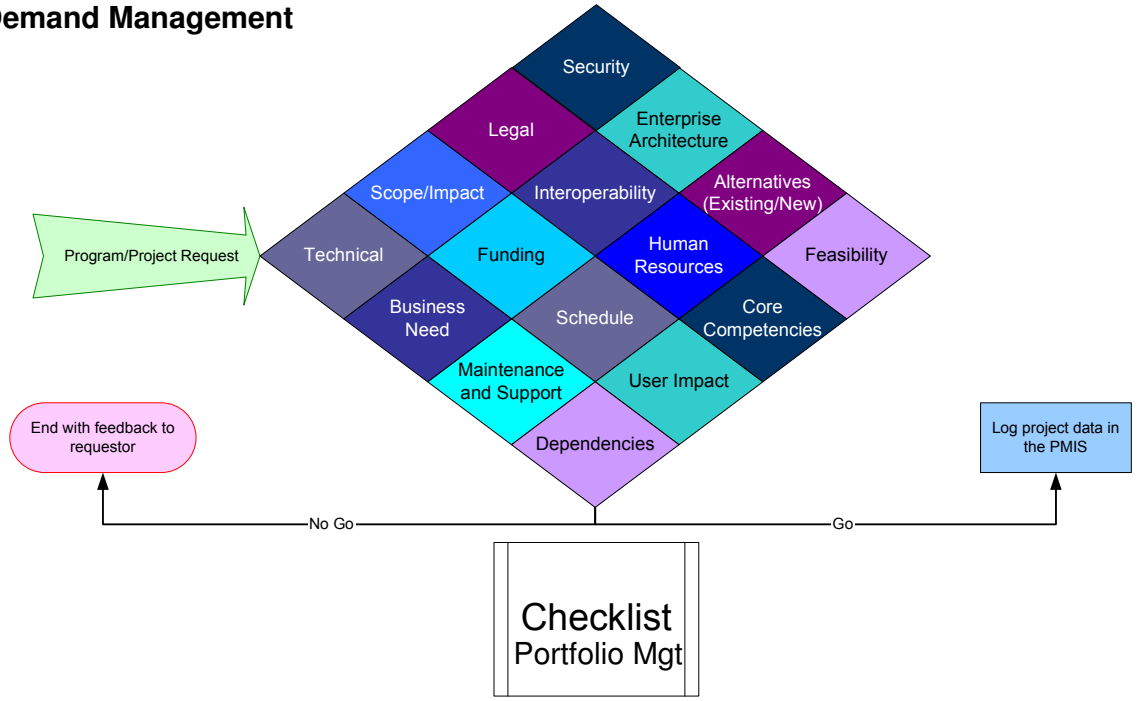
IT Project Request (Demand) Gate Approval Process Flow

Helps to evaluate the feasibility and priority of a Program/Project/IT Services and their ultimate disposition (go/no-go) (Illustrative Example)



*PMLC = Project Management Life Cycle

Select Criteria used to help evaluate an IT Request and Optimize Demand Management



Business, Technical and Financial Review Checklist *Program/Project Management*

(To be used as a guideline to assist in evaluating New or Changes in Scope Requests for IT Services)

Technical/Interoperability/Enterprise Architecture

Is this a new technology? Has it been tested?
Is it an extension or replacement of an existing technology?
Does the proposed solution impact the approved enterprise architecture and approved infrastructure components?
Does the solution represent a standard solution? A proprietary solution?
Is the proposed solution independent or is it dependent on other infrastructure components?
Does it comply with the interoperability standards and guidelines?
Does the solution require back-up, redundancy and contingency plans?
What degree of risk does the proposed solution pose? High? Medium? Low?
Is the capacity of the proposed solution expandable to accommodate growth in volume? Locations? Employees? Etc.?

Scope, Impact, Business Need and Feasibility

What is the scope and impact of the request? Enterprise wide? Geography? Number of People?
Is it solution technically feasible? Economically feasible? Legally feasible?
Is the request identified in the strategic and/or operating plan and budget?
What is the impact of the proposed solution on the user community? High? Medium? Low?
What business need will be satisfied by approving this request? High Impact? Low Impact? Mandatory? Strategic? Discretionary?

Legal, Regulatory and Security

Is the request legal?
Is this request ethical?
Does this request comply with current regulatory policies and guidelines?
Does the request comply with published security regulations and guidelines?
As a result of this request, are new or modifications required to security regulations and guidelines?

Business, Technical and Financial Review Checklist – (Cont'd) *Program/Project Management*

Core Competencies and Human Resources

Do we have the core competencies to design and implement the proposed solution?
Do we have sufficient and the right kind of human resources to implement the solution?
Do we have to outsource the solution to an industry partner? Other?

Alternatives Considered

What alternative solutions have been analyzed?
Why was the recommended alternative selected?

Funding and Financials

Is this request a funded (budgeted) requirement defined as part of the annual budget process?
- Defined/explicit?
- Realignment/reallocation?

Is this an unplanned and unfunded request?
Does this request impact the enterprise architecture and/or infrastructure integrity?
Does the request require a reallocation of previously approved funding?
Is the requested completion date acceptable? Doable?

Schedule and Time Frame

Is the requested schedule doable with the resources available?
Can the request completion date be met, given other priorities?

Program/Project/Service Request Type/Scale Matrix *Program/Project Management*

[Insert PROJECT # - NAME]

The Project Type/Scale Matrix provides a structured approach to evaluate program feasibility, identify approval levels and determine the appropriate PM Template(s) for managing/monitoring/controlling a program/project.

These are guidelines in assisting the decision on the most appropriate template, but flexibility is permitted.

PROJECT TYPE/SCALE ASSESSMENT

Directions: *Calculate the matrix score by subjectively using the guidelines below to assign a number between 1 and 5 to each of the 11 factors.*

	COMPLEXITY FACTOR	LOW=1	MED = 3	HIGH = 5	NOTES	Enter Score (1, 3 or 5)
1	Project Type	**UPGRADE** Involves a change in capacity of existing technology or service. Usually additional capacity or additional location.	**NEW ADDITION** Involves the addition of a new technology or service with no replacement of existing technology or service.	**REPLACEMENT** Involves the replacement of old technology or service with a new technology or service	*Degree of difficulty influenced by new technology and whether it replaces older technology or is simply added to the environment*	
2	Technology	Established GSA standard	A standard in the industry, but new to FTS	A new technology, not necessarily a standard, no internal expertise.	*Open standards should be encouraged*	
3	Scope	Involves only one location and one function	Involves only one region and up to four functions	Involves all regions (locations) and cross-functional	*The wider the geographic scope the more complex the project*	
4	End User Impact	Completely transparent to end users	Minimal amount of communication necessary to inform end users of planned changes. No training	Changes require frequent communication and some degree of end user training		
5	Implementation technique	Can be implemented without disturbing existing service, users can migrate to new environment	New technology/service is installed in parallel and users are migrated in segments.	"Flash cut" requires new technology/service to replace old with no overlap.		
6	Capital Required (Life Cycle)	Relatively small capital (<$50k)	Medium capital required ($50k - $2.5 mil)	Large capital required (>$2.5 mil)		
7	Operating Costs (Annual)	Small operating costs (< $100k/yr)	Medium operating cost ($101k-$999k/yr)	Large operating cost ($>1.0 mil/yr)	*Includes depreciation, equipment lease, maintenance, etc.*	
8	Vendor relationship	No new vendors involved, upgrade using existing vendor product	No new vendor involved, using a new product from existing vendor.	New vendor with no prior business relationship	*Established vendors are easier to do business with*	
9	Resource Requirements	Can be completed with use of only internal FTS resources (and industry partners)	Requires minimal resource dependency outside FTS (e.g. Phone Bridge)	Requires significant resource requirement from outside FTS and/or vendor (e.g. Enterprise Architecture, participation on project)		
10	Project Duration	<3 months	3-12 months	>12 months		
11	Other			Legal requirement and/or critical to business		
					TOTAL PROJECT Type/Scale SCORE	**0**
	TOTAL POINTS RANGE	11 to 55 Points				

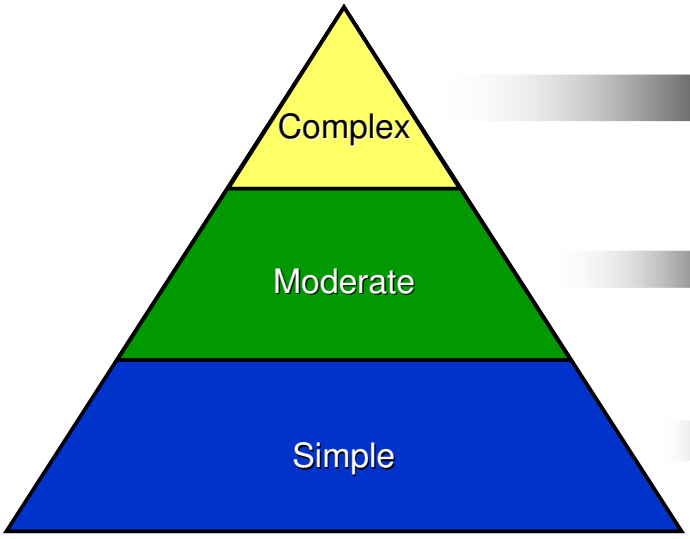
DEFINITIONS

TYPE	Key Attributes	# of points	Recommended Template	Approvals
Simple	Low Complexity	Less than 20 Pts	Template - PR, PCR*	Director or Delegate
Moderate	Medium complexity	Between 20 and 35 Points	Template - PR, PIR, DTD, PCR (Others Optional)	CIO or Delegate
Complex	High visibility; AC directed; Multiple organizations affected	Greater than 35 Points	Template - All for tech. projects, otherwise TAD, ITQR, RFI opt.	ITRB or Delegate

*Assumes informal planning (additional templates are optional)

*Type/Scale Ranking of Current IT Programs and Projects** *(Illustrative Example)*

In general, a small number of projects consume a majority of the IT project resources (80/20 rule). Therefore, these require more planning & control.



Programs and Projects	
#	% of IT Resources
6	55%
17	25%
20	15%
43	95%

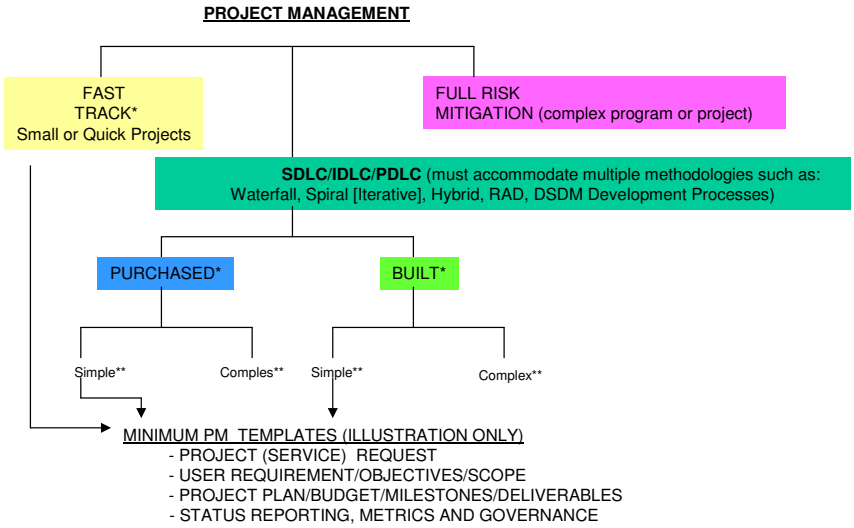
Total =

**Source: Major Organization. Tasks are not included.*

Fast Track versus Complex (Full Risk Mitigation) PM *Program/Project Management*

PM/SDLC Phases, Processes and Templates Should Accommodate Multiple Program/Project Types (e.g. Simple, Moderate & Complex) and Therefore, Be Scalable

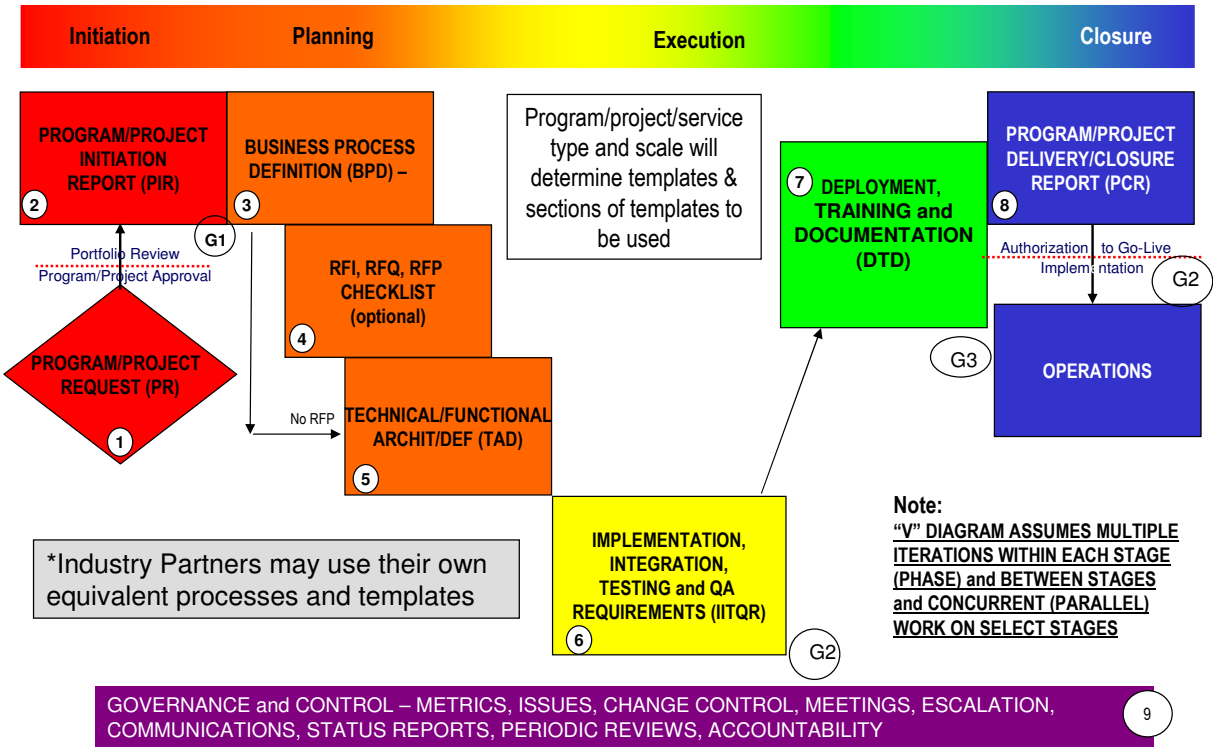
The following chart illustrates the relationship between PM & various life cycle scenarios that should be accommodated by the PM processes, templates, documentation and tools:



Note: Will vary by organization:
*Can include new development or technology, enhancements & maintenance or change in scope
** Small Project = < 3 months (duration); < 4 FTE; < $250k; etc.
Large Project = > 3 months; >4 FTE; > $250k; strategic, etc.

} Refer to Type/Scale Matrix for Suggested Templates and Approvals

PM Lifecycle Phases and Related Templates* *Program/Project Management*



Description of PM Lifecycle Templates *Program/Project Management*

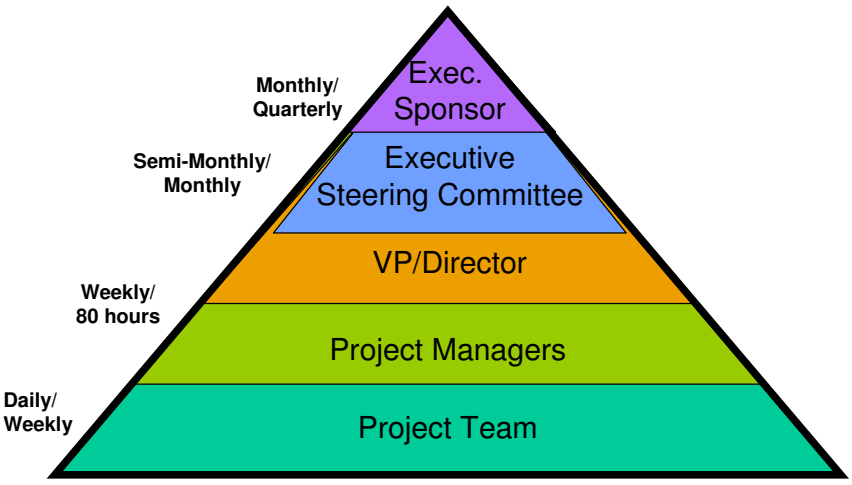
Phase(s)	Template(s)	Purpose/Description
Initiation	0. Program/Project Request (PR)	**Obtains customer or other constituent authorization to request IT services**
	1. Program/Project Initiation Report (PIR)	**Provides sufficient high-level information on a program or project to either approve or reject the request (e.g. scope, requirements, etc.)**
Planning	2. Business Project Definition (BPD)	**Describes the major business objectives that the system, component or deliverable will satisfy and/or impact**
	3. RFI, RFQ, RFP Checklists	**Identifies the contents of a solicitation to vendors in the form of: Request for Information, Request for Quote and/or Request for Proposal**
	4. Technical/Functional Architecture Definition (TAD)	**Describes the complete system and/or component from a functional, technical and operational aspect**

Description of PM Lifecycle Templates (Cont'd)

Phase(s)	Template(s)	Purpose/Description
Execution**	5. Implementation, Integration, Testing and QA Requirements (IITQR)	**Describes how the system and/or components is to be implemented integrated, tested and transitioned to the customer, operations and other environments**
	6. Deployment, Training and Documentation (DTD)	**Describes the actual installation and cutover of the system or components and identifies the training and documentation requirements**
Closure	7. Program/Project Delivery/Closure Report (PCR)	**Verifies and evaluates that the program/project objectives, costs, benefits and deliverables have been satisfactorily implemented and documents lessons learned**

Program/Project Governance, Change and Escalation Hierarchy (Illustrative Example)

A formal program/project review process should be established and followed with clearly defined roles and responsibilities



- Last possible option
- Approves major initiatives
- Resolves critical issues
- Approves major changes
- Prioritizes resource allocations
- Manages performance/corrective actions

- Resolves issues escalated from PM and/or core team
- Supports PM
- Cross project impacts and priorities
- Change Control Board
- Manages performance/corrective actions

- Communicates status and actions
- Escalates issues and conflicts not resolvable: supports PM
- Assigns and monitors resources
- Manages performance/corrective actions

- Do work per project baseline
- Do work per authorized change form

Program/Project Key Performance Indicators (KPIs) (Illustrative Examples)

KPIs - Communicate the health of a program or project, a task, phase and/or deliverable and should be determined by each organization in terms of mandatory and discretionary

Purpose - Measures progress against a baseline and may trigger corrective actions

Characteristics of KPIs – Quantifiable, trackable, measurable, comparable and actionable

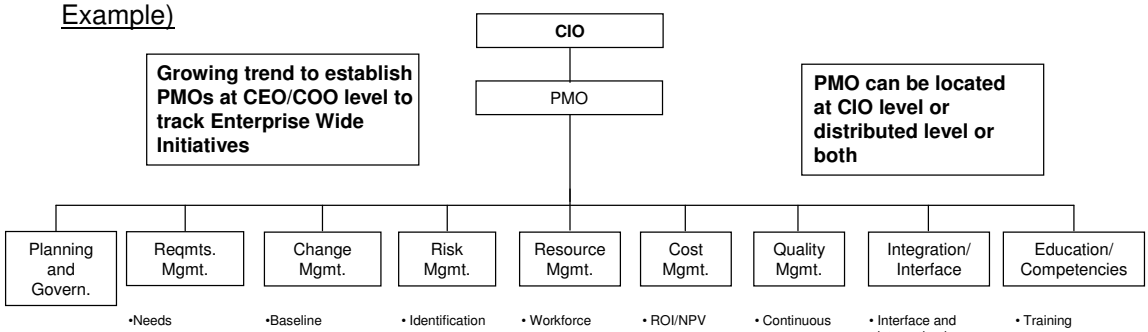
Mandatory

- Time - Schedule and suspense (due date)
- Costs - Actual versus budgeted $ (Cost)
- Status of critical path - are we on target based on date
- Deliverable hit ratio - # planned versus # completed deliverables (Schedule)
- Top issues - # of open issues should be a minimum
- Top risks of the project (should always be in focus) –with contingency plans
- Customer Satisfaction - quarterly

Discretionary

- Milestone hit ratio - # planned versus # actual
- Actual versus budgeted resources (# of people)
- Number of program/project changes and variances
- % of Rework
- Cost performance index (CPI)
- Schedule performance index (SPI)
- Earned Value – requires a time reporting system in place

Program/Project Management Office – Roles and Areas of Focus (Illustrative Example)

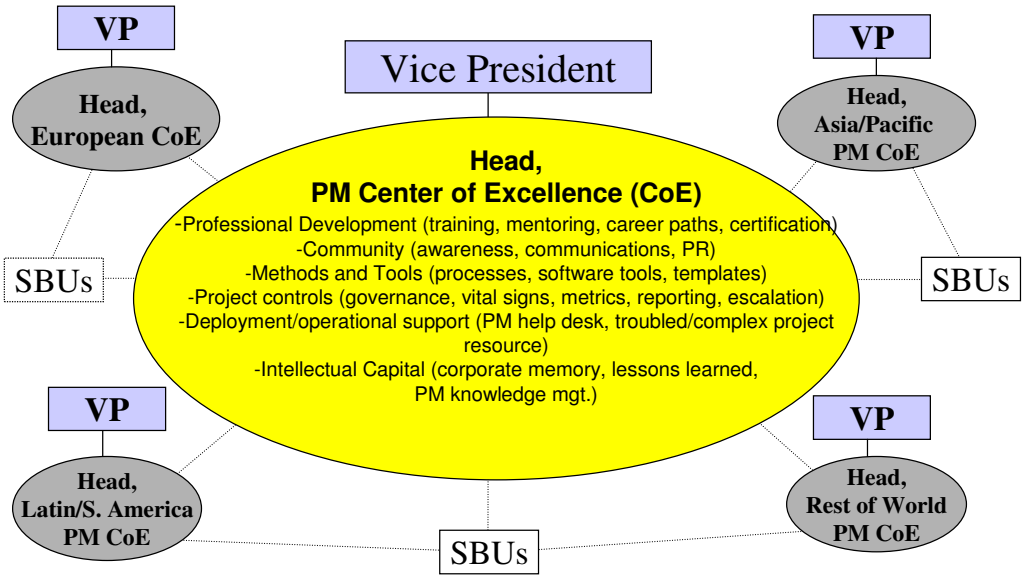


Roles

- Focal point for project planning, control and coordination processes
- Coordinate, control and report time, costs, resources and performance reporting
- Establish/Maintain/Administer all project processes, tools, templates & software
- Center of Excellence – Subject Matter Experts (for staff augmentation or to manage troubled projects
- Help Desk/Web Site

Sample PM Organization Structure - Major Multinational Corporation

(Illustrative Example) - **PM organizations work closely together and support the geographic regions and business units in those regions**



Federal Government Organization

Environment & Drivers	**Approach**
• Federal government is focusing on reducing costs and becoming more efficient through automation performance management • This agency provides IT systems and infrastructure support for several other agencies • Key areas of focus on government professionals and executives are greater accountability and improving their IT organizational and individual skills, competencies and maturity levels	• Completed assessment of one function within the IT organization and identified gaps and a plan to fill gaps • Sponsored by CIO • Three levels of steering were established: - Business/IT Steering Committee – senior managers who focused on prioritizing initiatives and funding - IT Technology Steering Committee –concerned with architecture, interoperability standards and compatibility issues - IT PMO – established to develop consistent and scalable PM policies and processes
Issues and/or Opportunities	**Approach (Cont'd)**
• Improve CMMI level of maturity from the low end of Level 1 to Level 3 within a three year period, initially in the PM area and then in other IT governance areas • Due to significant outsourcing, government employees had to be trained in more formal PM • Ad hoc and inconsistent PM and operational policies and processes throughout IT organization	• Formed an IT Governance Tiger Team, with representation of all IT departments and facilities by an external consultant to develop, review and deploy the IT governance framework and phased plan (see next slide) with the following priorities: - Program/Project Management and PMO - IT work Flows, Decision Rules and Authority Levels - IT Operations and Infrastructure - Performance Management & Management Controls

Federal Government Organization

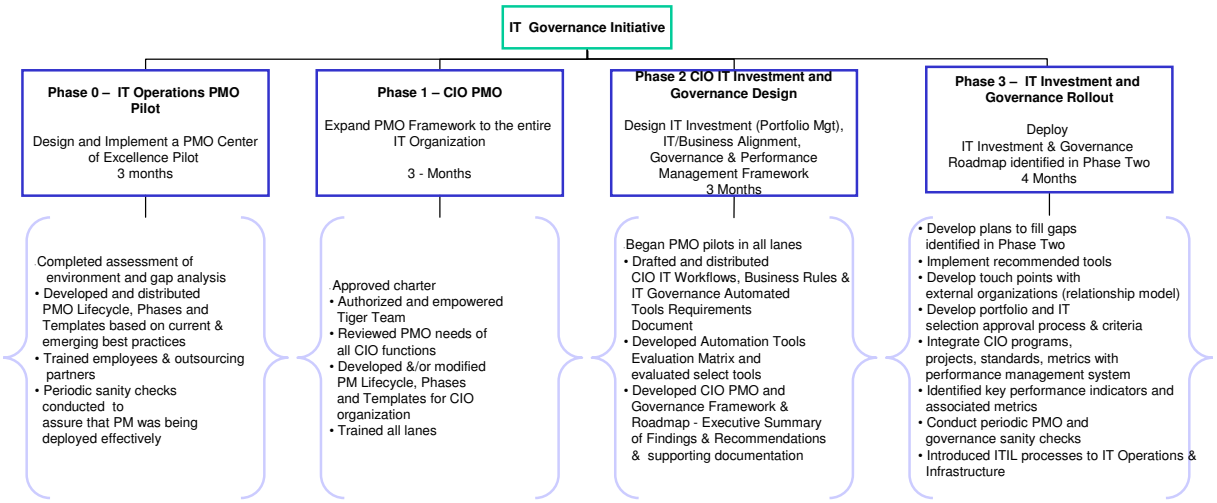
Results – Alignment • Business/IT Steering Group focuses on alignment and major investment priorities • Capital budgeting is part of but precedes the IT Strategic Plan • IT Annual Operating plan represents the budget authority and authorized spend levels	**Results - IT Service Management & Delivery** • Implementing the ITIL processes in the IT Operations and Infrastructure area • Improved the compliance reporting and documentation process and facilitated adherence to government regulations
Results - Program/Project Management • All agency government employees had to attend mandatory PM training • A consistent, but scalable Pm policy and process was deployed and resulted in significant reduction in rework and improved productivity through flexible discipline	**Results - Performance Management** • Project Management metrics for critical projects were more tightly controlled than for smaller projects • IT Operations and Infrastructure used daily, weekly. Monthly and quarterly metrics to measure customer satisfaction and service level performance, which is improving consistently

Federal Government Organization

Critical Success Factors • CIO must sponsor and support • All functions must be represented in the initiative to develop trust, better communications and more effective alignment	
Lessons Learned • It always takes longer to implement process changes that anticipated • Must constantly market the value proposition of IT governance and process disciplines • Celebrate and communicate wins	

Figure 5.15 – Federal Government Agency – Case Study – IT Governance

IT Governance Plan and Phases



Summary

- The CEO (e.g. CIO; CFO; CMO; COO; etc.) is committed to sponsoring and sustaining PM as a core competency and discipline
- Align programs and projects with business strategy using portfolio management criteria
- Get right people involved
- Deliver short term incremental deliverables that work (decompose complex programs or projects) to establish credibility and visibility
- Recognize and reward exceptional team performance
- Over communicating is good
- A formal PM governance process with meaningful metrics and actions is necessary
- Professionalize PM, reward Certification and celebrate successes
- Implement a scalable & flexible PM process & tools

Leverage and adopt industry standards/guidelines to guide your direction - CMMI, PMMM, PMBOK, PRINCE2, etc.

5.0 IT Service Management(ITSM) & ITIL (IT Infrastructure Library) Excellence

IT Service Management 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 costs of operations**
- **Improve service quality**
- **Improve customer satisfaction**
- **Improve compliance**

Objectives

- Review the principles and practices for achieving and sustaining IT service management and delivery (ITSM) excellence
- Describe an IT service management and delivery maturity model and roadmap
- Review the IT Infrastructure Library (ITIL), both v2 and v3 (2007), the benefits, processes and functions
- Illustrate select ITSM key performance indicators
- Define how to deploy an ITIL framework in an organization

Principles for Achieving IT Service Management and Delivery Excellence

- All steady-state operations (e.g. PBX, Data Center, Help Desk, Network Management, etc.) must have a **primary owner** and secondary (backup) owner
- The overall ITSMD budget should be divided into a set of defined products and services so that all **IT costs can be mapped to supportable business processes**
- All the IT services should achieve the desired level of efficiency, productivity, reliability and availability as measured by the appropriate **key performance indicators** (e.g. Service level agreements, customer satisfaction, costs, etc.)
- All ITSMD services should be charged back to the user or customer organization
- A **formal ITSMD governance**, reporting and escalation process is established to resolve key operational issues, risks, and conduct periodic reviews All steady-state operations have business continuity, backup (including one or more off-site locations), disaster recovery and security policies and procedures
- All **ITSMD related processes** should be documented in a consistent, repeatable and standard framework such as **ITIL (IT Infrastructure Library)** and continuously improved
- Optimizing the utilization of IT assets and resources is critical

Top Concerns of CIOs*

IT Service Management

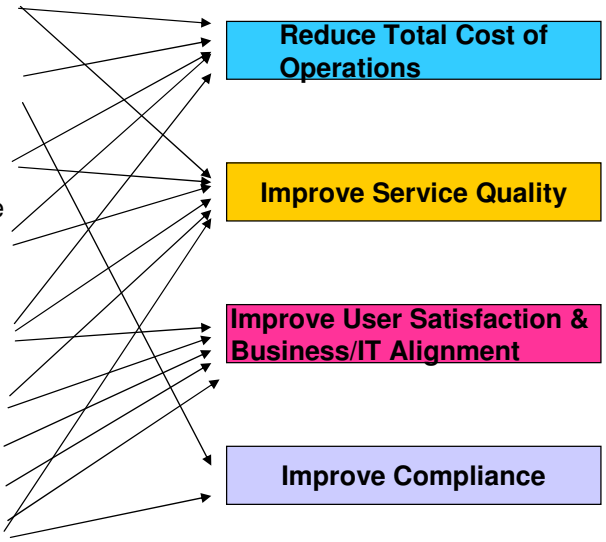
1. Aligning IT strategy with business strategy & Governance
2. Meeting business and user needs
3. ***Infrastructure & service management***
4. Coping with accelerating change
5. Dealing with senior management
6. Managing costs, budgets and resources
7. Keeping up with technology
8. Recruiting and retaining staff
9. Executing Projects Effectively
   (Time and resource management)
10. Maintaining skills and knowledge

*Source – www.cio.com/state-modified -2006

Benefits of IT Service Management & Delivery

Well executed IT Service Management is about optimizing the ability of IT to provide services that are cost-effective and meet the needs of the business.

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



Source: BearingPoint and Computer Associates, Webcast on ITIL, 2005

What is ITIL and Why is ITIL Different?

- The ITIL framework provides an effective foundation for higher quality IT Service Management
- ITIL consists of repeatable, documented best practice processes and functions essential for more effectively managing and improving IT service delivery and management.
- ITIL processes have recently become an ISO standard (ISO 20,000)
- Industry recognized training and certification – 3 levels : ITIL Foundation, ITIL Service Manager & ITIL Practitioner
- Standardized approach and terminology
  - Focused on IT Services that business/IT alignment and value propositions
  - Standardization of processes and key performance indicators
  - Provides the quality assurance foundation for ISO 9000
  - Industry supported software and tools
  - Supports Sarbanes-Oxley
- There are 12 process components of ITIL segmented into two major areas:
  - Service Delivery
  - Service Support

ISO/IEC 20000 - IT Service Management

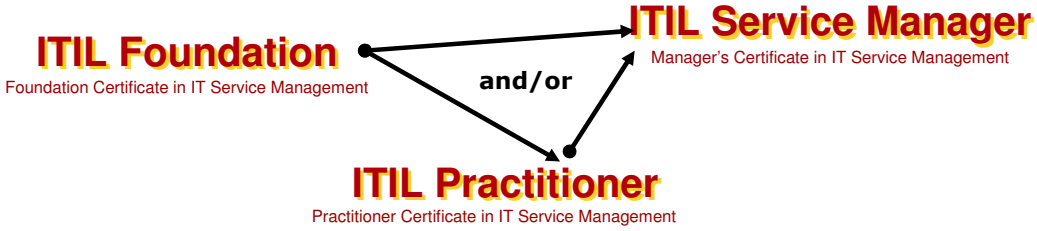
- The formal certification scheme for organizations wishing to demonstrate their conformance to the requirements of ISO/ IEC 20000 is currently owned and administered by ITSMF.
- ISO/ IEC 20000 applies to IT service management users and providers. The standard comprises two parts:

  - Part 1 – Specification: This is the documented requirements that an organization must comply with to achieve formal certification against ISO/ EIC 20000.
  - Part 2 – Code of Practice: Expansion and explanation of the requirements in Part 1.

- Both parts share a common structure which includes the following sections: scope, terms and definitions, requirements for a management system, planning and implementing service management, planning and implementing new or changed services, service delivery processes, relationship processes, resolution processes, control processes and release processes.
- ISO/IEC 20000 is synergistic with ITIL. The standard addresses the questions relating to IT service management as the "Why and What?" ITIL, complements the standard by addressing the question of "How?" and providing the process definitions and other details.

ITIL Certifications – v2

- EXIN *http://www.exin-exams.com*
  European Examination Institute for Information Science
- ISEB *http://www.bcs.org.uk/iseb/ism2.htm*
  The Information Systems Examination Board
- Testing at Prometric (www.prometric.com)

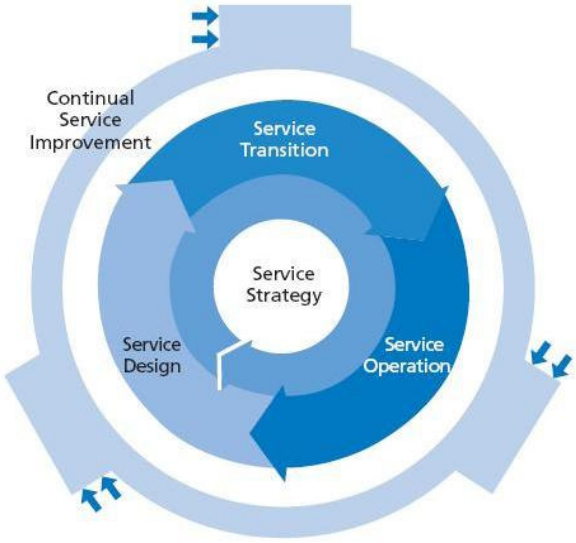


The IT Service Management Lifecycle (ITIL v3)

ITIL Version 3 consists of five(5) phases – Service Strategy, Service Design, Service Transition, Service Operation and Continual Service Improvement. Each phase consists of numerous processes, functions and related activities.

OGC contracted the management of ITIL rights, the certification of ITIL exams and accreditation to APMG. APMG defines the certification and accreditation for the ITIL exams and published the new ITIL Version 3 (v3) certification system.

ITIL v3 has been documented as five books. Each book focuses on one of the five phases of the new v3 IT Service Lifecycle.



Source: APMG

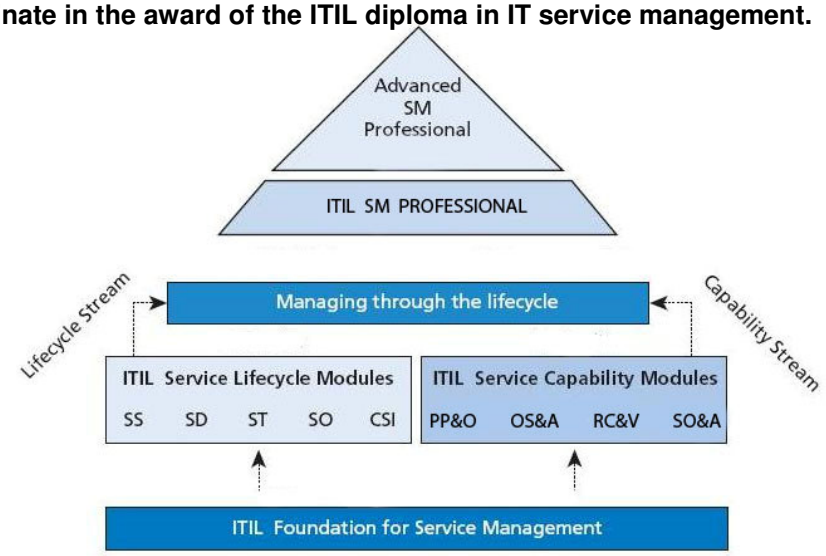
ITIL Version 3 Service Lifecycle, Related Processes and Select Activities*

Service Strategy	Service Design*	Service Transition*	Service Operation*	Continual Service Improvement
• Defining the market – Understand customers – Understand opportunity • Develop business case • Develop the service plan	• Service Catalogue Management (New in v3) • Service Level Management • Capacity Management • Availability Management • IT Service Continuity Management (ITSCM) • Information Security Management • Supplier Management (New in v3)	• Transition Planning and Support (New in v3) • Change Management • Service Asset and Configuration Management** (Revised for v3) • Release and Deployment Management** (Revised for v3) • Service Validation and Testing Evaluation (New in v3) • Service Knowledge Management (New in v3) • Pilots	• Event Management (New in v3) • Incident Management • Problem Management • Request Fulfillment (Service Desk) (Revised for v3) • Access Management (New in v3) • Monitoring and Control IT Operations (New in v3)	• Defining Cycle: – Plan – Do – Check – Act • Report (Metrics)

* NOTE: All processes in System Design, Service Transition and Service Operations are the same for v2 and v3, except where it is noted as new for v3.
** Service Asset and Configuration Management, Release and Deployment Management have been transitioned and enhanced from v2 to v3 with additional processes.

ITIL Version 3 – Qualification and Certifications

The ITIL version 3 certification framework has been significantly revised to reflect the service lifecycle approach. The new scheme recognizes the value of existing v2 qualifications and introduces a system that enables an individual to gain credits for both ITIL v2 and v3 courses. The ITIL v3 certification will be based on the following structure which will culminate in the award of the ITIL diploma in IT service management.



LEGEND

CSI = Continual Service Improvement
PP&O = Planning Protection and Optimization
OS&A = Operational Support and Analysis
RC&V = Release, control and Validation
SD = Service Design
SO = Service Organization
SO&A = Service Offerings and Agreements
SS = Service Strategy
ST = Service Transition

Source: OGC/ APMG

The ITIL Value Proposition – Select Company Examples*

- **Proctor & Gamble –** Started using ITIL about three years ago and realized a 6 to 8% reduction in IT total cost of operations (TCO).
- **Ontario Justice Enterprise –** Embraced ITIL 2.5 years ago and created a virtual help desk that cut support costs by 40%.
- **Caterpillar –** Embarked on an ITIL initiative 18 months ago. After applying ITIL principles, the rate of reaching the target response time for incident management on Web-related services jumped from 60% to more than 90%.
- **Large Global Manufacturing Company –** Due to long problem resolution times and costs and extended service outages, this organization established an ITSMD initiative with an owner with the power to enforce. The result was a savings of $30Million over a 3 year period.
- **Petro Canada –** Petro-Canada outsourced its IT infrastructure to multiple outsourcing vendors using ITIL process definitions and terminology. Vendors were required to the perform the work on-site and integrate into the in-house process flows (ITIL based). Petro-Canada was better able to manage inter-vendor relationships, cooperation and measurement of service levels and other key performance indicators.
- **Major Global Consumer Goods Company –** Conducted an external assessment of ITSMD maturity and decided to deploy ITIL on a global basis to clarify roles and accountability, standardize the use of processes and tools and improve compliance.

*Source: Blend of research from: Melissa Shaw, "Management Strategies," Network Management Newsletter, 11/7/01, Gartner Study on ITSM and ITIL, 2005 and GPS Group Research.

Advantages of ITIL to Customer and User

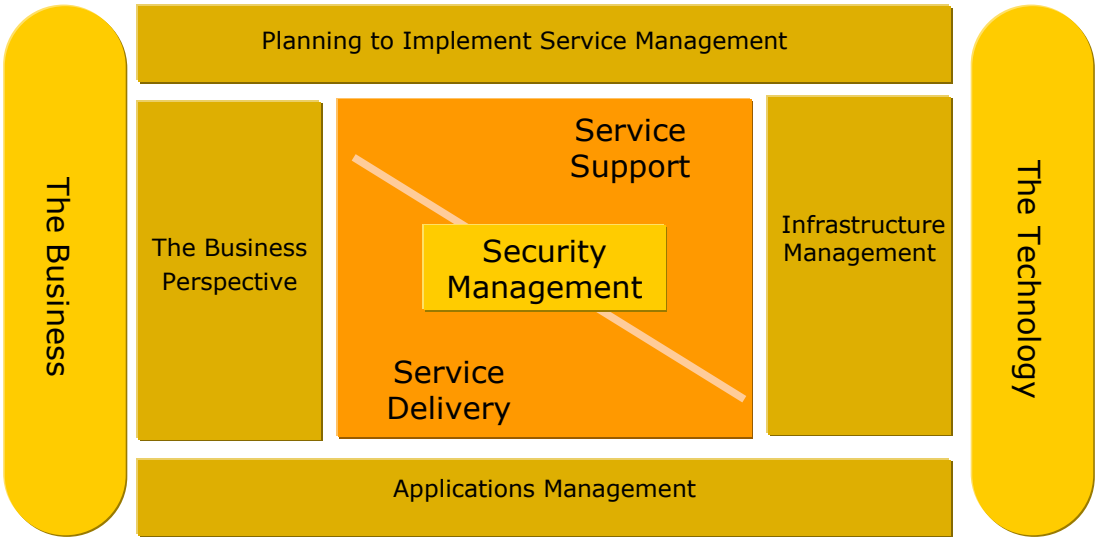
- Provision of IT Services becomes more customer-focused and agreements about service quality and SLA's improve the relationship
- The services are described better, in customer language, and in more appropriate detail (as in a IT Service Catalogue)
- The quality and cost of the services are managed better and more effectively
- Communication with the IT organization is improved by agreeing to limited points of contact

Advantages of ITIL to the IT Organization

- IT organization develops a clearer structure, improves accountability and documentation
- Change management is justified, formalized, authorized and traceable
- Facilitates decisions to outsource select services
- Encourages the a cultural change and migration towards a more effective and more mature organization
- Facilitates SOX compliance

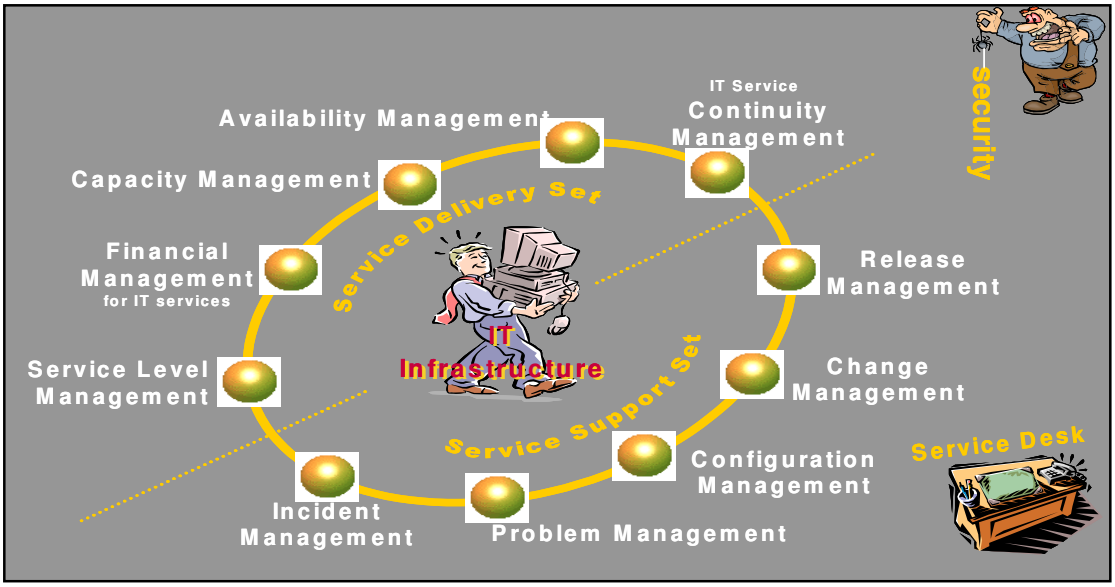
- Introduction of ITIL is lengthy and represents a significant effort – requires prioritization and agreement on key processes for implementation
- Improvement in the provision of services and cost reductions are insufficiently visible and poorly communicated
- A successful implementation requires the involvement and commitment of personnel at all levels in the organization
- Requires investment in ITIL support tools and technologies

The ITIL Framework - Illustrates the IT service delivery and support role in relationship to supporting the business, technology, infrastructure and application environments



Source: OGC - UK

IT Service Delivery Processes - focus on management control to improve the quality, stability and IT cost structure.
IT Service Support Processes – focus on operational aspects to detect and correct problems, and ensure appropriate change, configuration and release management authorization and documentation.



Definition: Acts as the single point of contact for the management of incidents and problem resolution and restoration coordination to normal operational services with minimal business impact on the Customer (inside or outside) within agreed or contracted service levels and business priorities.

Key Benefits:

- Provides a single point of contact for customer service requests
- Focuses on service support and reporting of incidents
- Provides a single point to manage and coordinate incident and problem resolution, coordination and communications
- Maintains a log and record of reported incidents, problems and their resolution in a data base
- Can produce const reduction through efficient use of resources
- Promotes customer retention and satisfaction

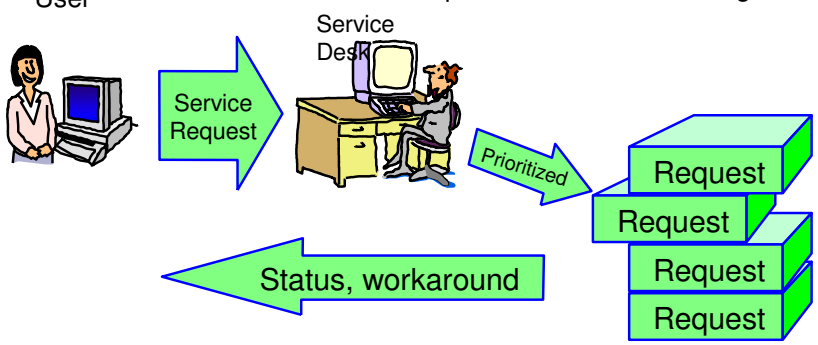
Key Implication:

The ITIL based Service Desk becomes the primary source of communication to the end users for service, operational and infrastructure related issues.

Goal:
To act as a single point of contact to users of IT services and to improve customer satisfaction with the efficiency and effectiveness of the service desk.

The major Service Desk functions are:

- Provide a single point of contact (SPOC)
- Communicate the level of service that will be provided, and when (**set expectations**)
  - Based on Service Level Agreements (e.g. mean time to resolution)
- Inform the user of the assigned priority of requests
- Build confidence that requests will not be lost or ignored



Definition: Defines process for logging, recording and resolving incidents. Restores normal service operation as quickly as possible and minimizes the adverse impact on business operations, thus ensuring that the best possible levels of service quality and availability are maintained.

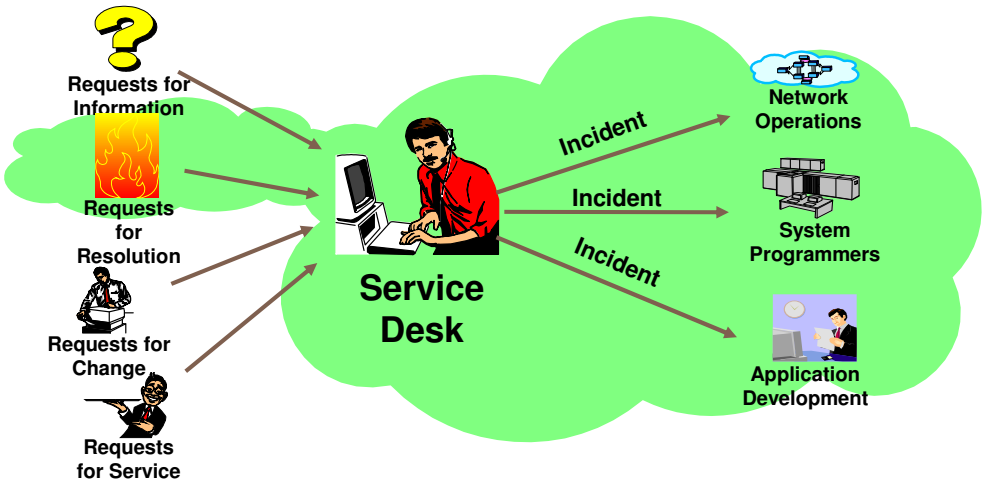
Key Benefits:

- Ensures that incidents are detected and that their impact on the business is known
- Ensures the best use of resources to support the business during service failures or disruptions
- Works to minimize the time to restore service and the negative effect on business operations

Key Implication:
Incident Management is about doing whatever is necessary to restore service to users when a disruption occurs in order to minimize business impact.
Select KPIs: Total Number of Incidents; Mean Elapsed Time to Resolution; Average Cost Per Incident; Percent of Closed Incidents

Goal:
To restore normal services as quickly as possible and minimize the adverse impact on business operations.

The Helpdesk or Service Desk, as an organizational unit, is only a part of the Incident Management process.



Definition: A problem is either an unknown underlying cause of one or more incidents or a known error and for which a work-around has been identified. Problem management supports incident management by providing work - arounds and quick fixes, but does not have the responsibility for resolving the incidents

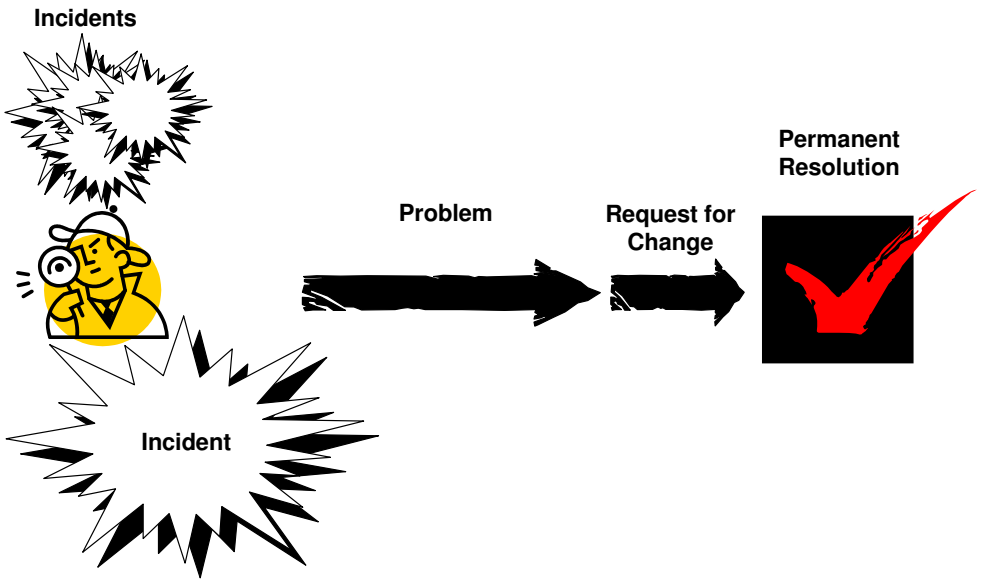
Key Benefits:

- Places primary focus on root cause analysis and error prevention; not just on service restoration
- Ensures better utilization of technical subject matter experts by enabling them to avoid routine event handling and resolution activities
- Supports Fault Management and Service Desk via population of knowledgebase and development of fault/incident work-around procedures

Key Implication:
Problem Management should be proactive and focused on prevention, rather than fire-fighting.

Select KPIs: Problem/error control reporting; Amount of Time/Cost Spent to Fix; Percent of Recurring Problems

Goal:
To minimize the impact of incidents on the business that are caused by errors within the IT Infrastructure or operations and to prevent reoccurrence of incidents related to those errors.



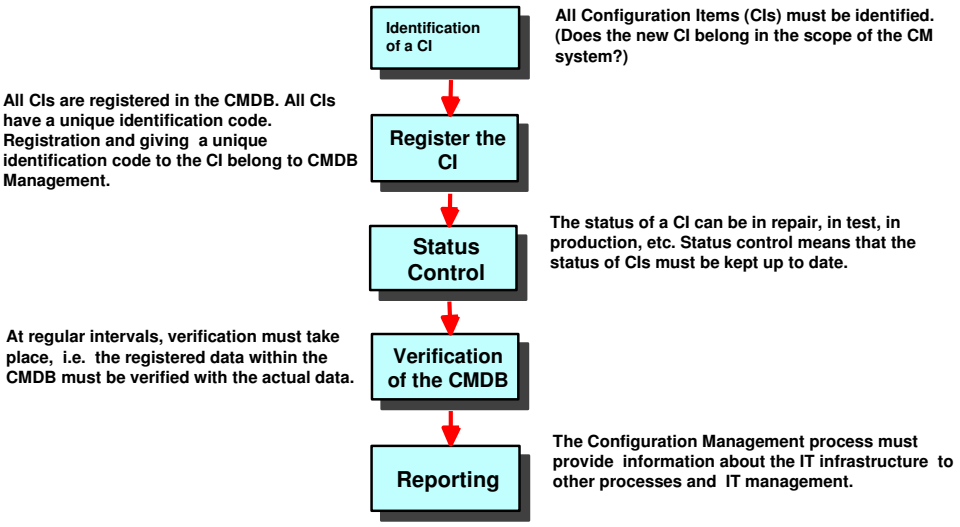
Definition: Accounts for all of the IT assets (infrastructure) and configuration items (CIs) within the organization and its services by maintaining, documenting and verifying the configurations and their versions. It provides a sound basis for enabling Incident Management, Problem Management, Change Management and Release Management to be managed effectively.

Key Benefits:

- Identifies and records the information required to manage IT services
- Ensures that a central repository of configuration information is up to date, and accurately reflects the actual infrastructure
- Documents relationships of IT components to IT Services
- Improves the economic and effective delivery of IT Services

Key Implication:
Most IT organizations do not have a good understanding of how their infrastructure devices/components are interrelated or how they support key business processes and functions.
Select KPIs: Incidents/problems traced back to improperly made changes; cycle time to approve and implement changes; unauthorized IT components

Goal:
To account for all of the IT assets and configurations within the organization; provide accurate information on configurations and their documentation to support all the other Service Management processes; verify the configuration records against the infrastructure and correct any exceptions.



Change Management Summary *IT Service Management*

Definition: The process of controlling changes to improve infrastructure and service with minimum disruption. Ensures that a consistent and repeatable process with the appropriate decision criteria are used to review, fund, prioritize, document and authorize all changes in order to minimize the impact of change related incidences on service quality and consequently improve the operational and infrastructure aspects in support of the business.

Key Benefits:

- Provides governance as to how IT changes are requested, funded, prioritized assessed, authorized, documented and implemented
- Minimizes the number of unauthorized changes and allows for introduction of change based on business needs
- Minimizes risk and disruption caused by failed changes via performance of impact assessments, development of back-out plans, etc.

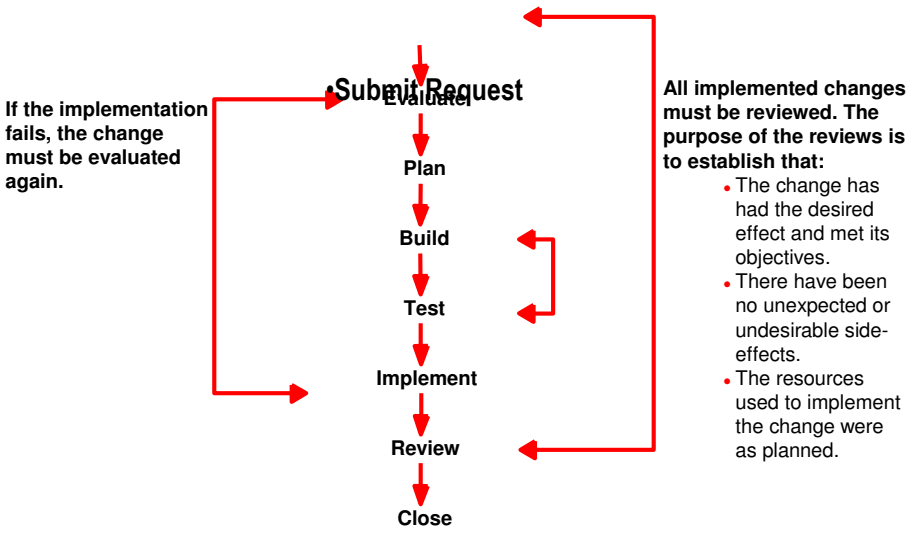
Key Implication:

An effective Change Management process is critical for minimizing IT service disruptions and service level violations caused by unauthorized, uncoordinated changes to the IT production environment. Scope includes hardware, network, systems software and "live" application software.

Select KPIs: # of Requested Changes; # of Successful Changes; # of Pending Changes; Time or Cost of Changes per Change Type

Change Management Summary *IT Service Management*

Goal:
To control and manage changes in the IT infrastructure and operations environment with the smallest possible risk to the agreed service levels.



Release Management Summary

IT Service Management

Definition: Ensure that all technical and non-technical aspects of an authorized release (e.g. hardware, software, network, application rollouts) and rollouts are managed in a coordinated manner with the appropriate checklists and signoffs between the appropriate constituents (e.g. development, architecture, operations, maintenance, vendors, etc.). Release types include: major, minor and emergency fixes.

Key Benefits:

- Provides a consistent, customer focused approach to deploying large releases into production
- Bundles similar changes together to decrease impact on the business and the workload on IT
- Better control on installed hardware and software leading to reduced costs in licensing and maintenance

Key Implication:
Release Management works to bridge the gap between development and operations by ensuring that new/updated services are not just "thrown over the fence" and formalizes the transfer process from development to production.

Select KPIs: # of major, minor and emergency releases; Problems attributed to releases; new, changed or deleted objects

Release Management Summary

IT Service Management

Goal:
To design and implement efficient procedures for the distribution and installation of changes to IT systems; plan and oversee the successful rollout of software, hardware and/or network components; and ensure that hardware and software being changed is traceable, secure and that only correct, authorized and tested versions are installed.

Release Management Activities and Lifecycle

Development/ Acquisition Env.			**Controlled Test Environment**					**Live Environment**
Release Policy	Release Planning	Design/ Develop or Order/ Purchase S/H/N	Build/ Configure Release	Fit-for-Purpose Testing	Accept Release	Roll-out Planning	Communication Preparation and Training	Distribution and Installation

Definition: Improves and maintains IT Service quality and performance through a continuous cycle of a monitoring and reporting on IT Service key performance indicators and results. Institutes corrective actions to eliminate poor service and support business continuity and operating improvements.

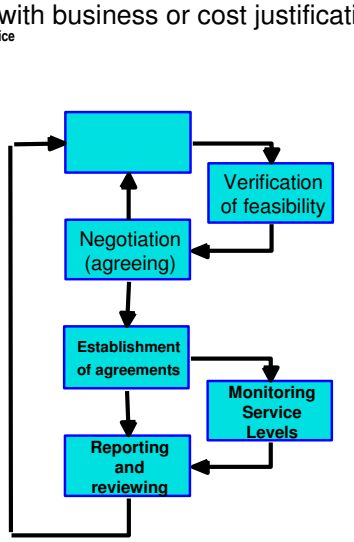
Key Benefits:

- Ensures customer requirements are known and that services are designed to meet these requirements
- Sets forth defined service targets that all IT groups can work towards
- Places a focus on service monitoring and improvement to identify and resolve issues
- Ensures that IT is focused on the most important areas

Key Implication:
Service Level Management should manage through a defined Service Level Agreement or contract that describes what services and corresponding SLAs are available to IT customers, with corresponding rewards and penalties if they are met or missed respectively. Service catalogues list all services and summarize each service and its key attributes

Select KPIs: SLAs; customer satisfaction surveys

Goal:
To maintain and improve IT service quality, through a constant cycle of agreeing, monitoring and reporting upon IT service achievements and instigation of actions to eradicate poor service - in line with business or cost justification.



Negotiation must take place before SLAs can be formally defined.

Monitoring of Service Levels is required to see if the Service Levels are met.

Definition: Ensures that all of the current and future infrastructure (the means of Service Delivery) and operational (current Service Delivery) capacity (e.g. Storage, Bandwidth, hardware, etc.) aspects to satisfy the business requirements, is scalable, backed-up and provided in a cost effective manner.

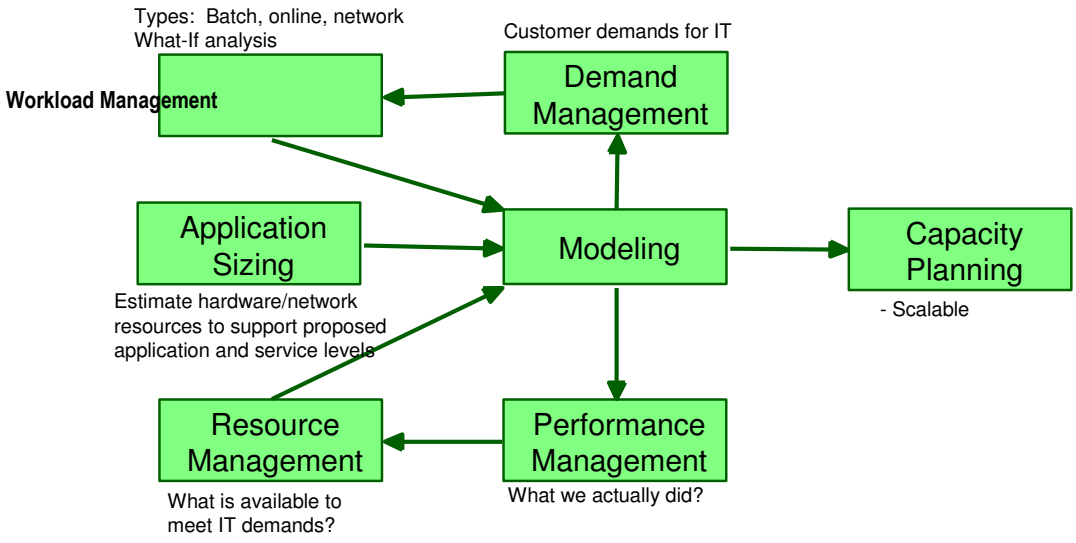
Key Benefits:

- Ensures that the existing infrastructure is optimized in terms of capacity when compared to the agreed service targets
- Understands the way in which the infrastructure is currently being used and will be used in the future
- Works to ensure that future capacity exists to meet business requirements and that it is provided in a cost effective basis.

Key Implication:
Capacity Management is concerned with both optimizing the current environment and planning for future business requirements.

Select KPIs: Capacity, Volume and Speed Metrics

Goal:
To ensure that cost justifiable IT capacity always exists which is matched to the needs of the supported business.



Definition: Optimize the capability of the IT Infrastructure, services and supporting organization to deliver a cost effective and sustained level of availability that enables the business to achieve its business objectives.

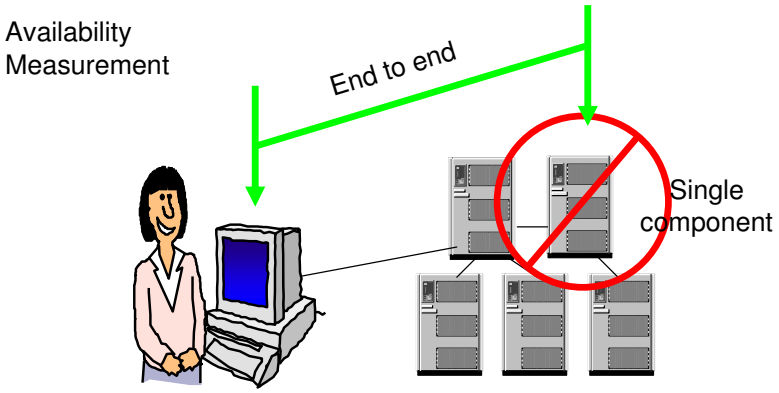
Key Benefits:

- Services can be designed to meet target service levels instead of defining the target and then hoping it is possible
- Provides a formal way to measure availability of IT services from a user perspective
- Over time, can reduce the number and impact of incidents by increasing resilience and reliability

Key Implication:
It is a proactive process that strives to ensure that availability targets are reasonable and achievable and that IT services are designed with this number in mind.

Select KPIs: Rate of availability; Overall uptime and downtime; Number of faults; Mean time to repair

Goal:
To guarantee the availability of IT services, agreed upon by clients, by adequate deployment of resources, processes and techniques.



Availability deals with the planning, management, improvement and monitoring of availability of services for the realization of the SLAs

A service is available when the service has been provided within an agreed:
- Number of direct users
- Maximum response time
- Functionality

IT Service Continuity Management (ITSCM) Summary

IT Service Management

Definition: Support the overall Business Continuity Management process by ensuring that the required IT technical and service facilities (e.g. computer systems, networks, applications, technical support and Service Desk) can be recovered within the required and approved timeframes. This also requires the development and maintenance of a backup, contingency and disaster recovery plan and facilities.

Key Benefits:

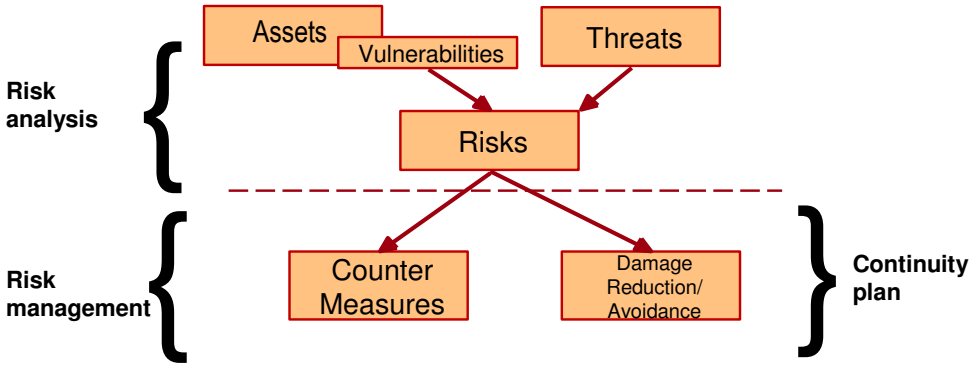
- Decrease the cost and impact to the business when a crisis occurs
- Improves the relationship between IT and the business
- Potentially lower insurance premiums
- Ability to adhere to regulatory requirements
- Competitive advantage when securing business partners

Key Implication:
The IT Service Continuity Plan is a part of the overall Business Continuity Plan and is focused on the continuity of business critical IT services. ITSCM is focused on technical and operational aspects and interacts with other ITIL processes (e.g. Service Level, Availability, Configuration, Capacity and Change Management).
Select KPIs: Lower insurance premiums; Impact and costs of major disruptions and discontinuity

IT Service Continuity Management Summary

IT Service Management

Goal:
To support the overall Business Continuity Management process by ensuring that the required IT technical and services facilities (including computer systems, networks, applications, telecommunications, technical support and service desk) can be recovered within required, and agreed, business schedules.



Definition: Provide cost-effective oversight of the IT assets and resources used in providing IT Services, including budgeting, accounting and charging of services.

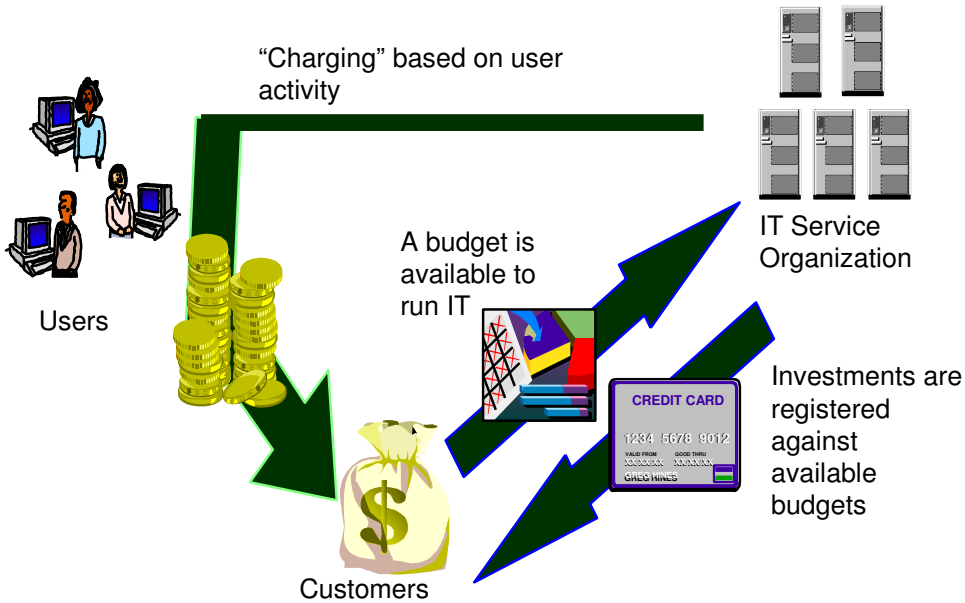
Key Benefits:

- Provides accurate cost information to support IT investments
- Provides a budget of expected IT costs
- Collects and defines the true cost of providing IT services and allows for accurate accounting of these cost by IT customers
- Allows for recovery of costs via charge-back of IT services to customers and helps in focusing on IT/client priorities

Key Implication*:*
IT organizations are being driven to operate as an Internal Service Provider. This demands that they have mature financial management capabilities and can accurately convey and recover costs for IT services.

Select KPIs: Cost tracking; Budgeting; Charge backs; Asset value and retirement

Goal:
To provide cost-effective stewardship of the IT assets and resources used in providing IT services.



IT Security Management Summary

IT Service Management

Definition: Ensure a high (whatever is necessary) level of security so that the IT infrastructure and services, as well as the business functions they support, are not compromised. ISO 17,799 provides a standard framework for IT security

Key Benefits:

- Provides secure policies and procedures to protect infrastructure components
- Creates awareness to protect and secure IT resources throughout the organization

Key Implication*:*

IT organizations are being driven to become more secure and protect the information, infrastructure and people resources working in their environments.

Select KPIs: Number of security breaches; Impact/cost of security violations

Summary of New or Modified ITIL Service Management Processes/Functions –v3

Service Catalogue Management (part of the Service Design Phase)

Definition: The Service Catalogue Management includes a description details and the status of all existing services and business processes they support, as well as those in development. There are two components of the Service Catalogue: 1) The Business Service Catalogue contains the details delivered to the customer. It represents the customer's view and 2) The Technical Service Catalogue expand the Business Service Catalogue with relationships to the supporting services, shared services, components and CIs (configuration items) necessary to support the provision of the service to business (it is not viewable by the customer).

Key Benefits:

- Simplifies the ordering of IT services from a customer's viewpoint.
- Provides a consistent description of IT services that can simplify pricing, scheduling and service fulfillment.
- Sustains a more proactive Service Level Management process and function.

Key Implication*:*

It helps customers to interface and request well defined services from IT in a consistent and effective manner.

Select KPIs: Number of services included in the service catalogue; Number of repetitive services ordered by customers from the catalogue, etc.

Summary of New or Modified ITIL Service Management Processes/Functions –v3 (Cont'd.)

Supplier Management (part of the Service Design Phase)

Definition: Involves the selection, contract management and on-going management of third party service providers.

Key Benefits: Provides a consistent process for dealing with service providers and outsourcing vendors

Key Implication: This is a new process within the ITIL suite. Other organizations such as the International Association of Outsourcing Professionals and Carnegie Mellon's IT Services Qualification Center already have developed life cycle phases, processes and certification programs for individuals and organizations for strategic sourcing.

Select KPIs: SLAs, etc.

Summary of New or Modified ITIL Service Management Processes/Functions –v3 (Cont'd.)

Transition Planning and Support (part of Service Transition Phase)

• This process focuses on plans and coordinates the resources to move a new or changed service into production within the projected cost, quality and time estimates.

• This is not really a new process, since both Release and Change Management, incorporated sections of these activities in their scope.

• However, the renaming of the process to Transition Planning and Support brings more visibility to an area that has suffered from poor or inadequate management and coordination for a long time in IT.

• Improper transitioning to either internal operations or vendor/outsourced operations without the appropriate tests, pilots, documentation, training and acceptance processes Can be disastrous.

Summary of New or Modified ITIL Service Management Processes/Functions –v3 (Cont'd.)

Service Asset and Configuration Management – (SACM) (part of Service Transition Phase)

This new process assumes responsibility for maintaining all secure libraries and stores, such as the Definitive Software Library (DSL) and Definitive Hardware Store (DHS) that Release Management previously maintained.

Release and Deployment Management (part of part of Service Transition Phase)

• This process has been renamed from release management to release and deployment management in v3. It now focuses on the activities of managing releases and deployments into the operational infrastructure.

• It also introduces the concept of early life support (ELS), which provides additional support to the users and support teams on the release of changes.

Service Validation and Testing (part of Service Transition Phase)

• Service Validation and testing represents quality assurance as described in ITIL v2, but was never really addressed.

• The new process describes the progression of testing and quality control in terms of incremental contributions to business value.

Summary of New or Modified ITIL Service Management Processes/Functions –v3 (Cont'd.)

Evaluation (part of Service Transition Planning)

ITIT v3 is much more specific than ITIL v2 with this process. It defines how to plan, guide and execute the evaluation process, including such assessment factors as service provider capability, organizational philosophy and management style, resources, modeling, metrics, purpose and use.

Service Knowledge Management Systems (SKMS) (part of Service Transition Phase)

Knowledge management is new in v3 and is important in presenting and using a wealth of knowledge stored and shared in a data base of IT service management.

Knowledge management addresses planning the knowledge management strategy, transferring and sharing knowledge throughout the organization, managing information and using knowledge management in a service environment. SKMS is supported by configuration management systems and CMDB(s) integrated with asset management.

Event Management and Request Fulfillment (includes the Service Desk from v2 and both are part of Service Operations Phase)

These two processes encompass the Service Desk from v2 and expand to include providing support for managing events and IT service requests from the initial request to the completion or resolution of the event or request.

Access Management (part of Service Operations Phase)

Access data is now incorporated into the CMDB at the information integration layer of the Service Knowledge Management System. This incorporates some of the security considerations from v2 and expands the security guidelines regarding access to specific information and data bases.

Monitoring and Control IT Operations (part of Service Operations Phase)

• This new process focuses on the day-to-day management of IT Services, including plans, policies, procedures, processes, metrics and status reporting.

• Overall, v3 appears to be a substantive improvement over v2, by filling significant gaps with useful and pragmatic content and much improved emphasis on services.

• It will be up to each organization to tailor a blend of both v2 and v3 into a best practice for its environment, level of maturity, pain points and other factors.

ISO 17799* – IT Security Framework – Establishes an Enterprise Security Architecture (ESA) based on two key concepts – Domains and Security Levels

- **Security Domains –** There are 9 security (policy) domains which are used to develop strategy, execute plans and track progress**:**
  - **Information Security Organization**
  - **Risk Assessment and Asset Classification**
  - **Operating and Architectural Controls**
  - **Personnel Security**
  - **Physical & Environmental**
  - **Access Control**
  - **Systems Development & Maintenance**
  - **Monitoring Compliance**
  - **Business Continuity**
  - **Wireless Communications**
  - **Security Incident Management**

* Note: **ISO 17799** is intended to be used with **ISO/IEC 27001** & integrates the process based approach of ISO's management systems standards, including the Plan-Do-Check-Act cycle and requirement for continual improvement..

ISO 17799 & ISO/IEC 27001 –Information Security

ISO 17799 – IT Security Framework – Establishes an Enterprise Security Architecture (ESA) based on two key concepts – 11 Domains and 6 Security Levels

Security Levels – There are 6 security (policy) levels which are used to develop policies, procedures and documentation **-** Information Security Policy Statement; Information Security Policies; General IT Standards; Minimum Security Guidelines, Security Procedures & Security Guidelines; Supporting Documents, Templates & Forms and Security Awareness (Marketing) Material and Training.

ISO/IEC 27001 IT Security Management Systems – The purpose of ISO/ IEC 27001 is to help organizations establish and maintain an information security management system (ISMS). It is designed to be used for certification purposes.

While ISO/ IEC 27001 lists a set of control objectives and controls, which came from ISO/ IEC 17799, ISO 17799 also provides implementation guidance. ISO/ IEC 27001 is aligned with ISO 17799. Many organizations use both standards to develop and improve their information security management environment, policies, processes and controls.

Steps in Making ITIL Real

- Must get commitment from the top
- Must get sufficient and available resources
- Identify Executive Champion and Multi-Disciplinary Team
- Do Homework – Educate yourself on current and emerging best practices
- Conduct a IT Service Management and Delivery maturity assessment using a leading best practice process such as CMMI to assess and define current and target-state maturity levels for each ITIL process and function
- Analyze assessment results and establish a Process Maturity Baseline and Roadmap.
- Develop and Prioritize ITIL Processes, Fucntions and Tools for Implementation
- Document and train
- Establish a “Web Portal” to Support Dissemination of Process Implementations.
- Continuously improve

ITIL v2 Process Areas – Maturity Level Ranking Matrix (Illustrative Example)

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

ITIL Process Areas		Existing		Revised/In-Process/Planned	
		Policies and Procedures	Workflow/ Processes/ Technologies	Policies and Procedures	Workflow/ Processes/ Technologies
IT Service Support:	Problem Management				
	Release Management				
	Incident Management				
	Service Desk Function				
	Change Management				
	Configuration Management				
IT Service Delivery:	Capacity Management				
	Service Level Management				
	Availability Management				
	Financial (Asset) Management				
	IT Service Continuity Management				
Security Management (Security is part of all processes and functions)					

Note - Matrix may be used to assess level of maturity of ITIL processes (Ranking: 1= Ad Hoc; 5 = Optimized Process)

Select ITSM Management Metrics

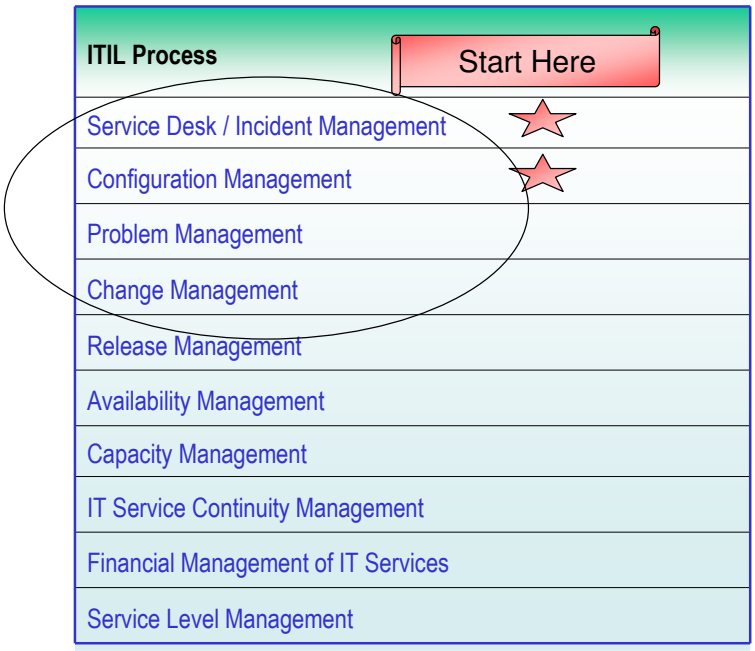
IT Service Management

There are many ITSM metrics, dashboards and KPIs – Below are some examples

- Number of Disruptions of Services
- Service Desk Effectiveness
- Establish and Implement Consistent Processes and Procedures
- Effective Use of Integrated Support Tools
- Effective Communications
- Availability and Capacity SLAs
- Effective Coordination and Cooperation
- Customer Response Time (2 min)
- Customer Response Time (5 min)
- First Call Resolution Rate
- Escalation Time for First, Second and Third Response Rate
- Number of Changes
- Security Violations/ Intrusions
- Trouble Ticket Acknowledgement (1 hr)
- Workstation Functional Restoration
- Reopened Trouble Tickets
- Network and Server Availability
- Global Service Interruption
- Partial Service Interruption
- Printing Services Availability
- Printing Services Availability
- MAC (Moves, Adds and Changes) Completion Percentage
- End User Satisfaction
- Timeliness and Schedule Adherence
- Mean Time to Repair
- Technology Refresh
- Performance of Major Projects – Time, Cost, Scope,
- Release Controls

Most ITIL Projects Start With Service Desk & Incident Management

ITIL Tools should support the ITIL processes, controls and templates



Select ITIL Design Templates/Documents (Illustrative Example) *ITSM*

Incident Management Process Deliverables	Configuration Management Process Deliverables
- Process Roles, Responsibilities & Ownership - Policies - Process Workflow - Process Activities and Work Instructions - Templates and Report Design - Prioritization and Escalation Attributes and Procedures - Incident Closure - Monitoring and Control Procedures - Key Metrics - Communications Plan and Notifications	- Process Roles, Responsibilities & Ownership - Configuration and Authorization Policies - Process Workflow - Process Activities and Work Instructions - Templates and Report Design - CMDB Scope, Data Definitions and Design Document - Identification Strategy - Monitoring and Control Procedures - Verification Strategy and Audit Schedule - Key Metrics - Communications Plan and Notifications
Problem Management Process Deliverables	**Release Management Process Deliverables**
- Process Roles, Responsibilities & Ownership - Policies - Process Workflow - Process Activities and Work Instructions - Templates and Report Design - Prioritization and Escalation Attributes and Procedures - Problem Closure - Monitoring and Control Procedures - Key Metrics - Communications Plan and Notifications	- Process Roles, Responsibilities & Ownership - Installation and Release Policies - Process Workflow - Process Activities and Work Instructions - Templates and Report Design - Sourcing, Release Schedule, Testing and Acceptance - Prioritization and Escalation Attributes and Procedures - Detection and Backup Policies - Definitive Software, Hardware and Network Library Design - Key Metrics - Communications Plan and Notifications

Global Manufacturing Organization

Environment & Drivers

- Annual revenue range - $45 to 55 Billion
- Number of Employees – 200,000+
- Number of IT employees – 3,500 – 5,000
- IT spend as a % of revenue – 1.1 to 2.5%
- Conservative management, very financially focused
- Brand management driven
- Decentralized on a regional (geographic) basis
- Think globally, act locally
- Technology used primarily to increase efficiency, reduce costs with limited focus on growth
- Company has primarily grown through acquisitions
- CIOs (corporate and regional) report to CFOs and are not part of the Senior Executive Management Team
- Industry is consolidating both on markets (fewer and larger customers/channels) and manufacturing

Approach

- External assessment of IT maturity was completed with mixed results for each IT governance component (range from beginning of Level 1 to Level 3 in some regions)
- Regional Business/IT Executive Steering Group – Approves major IT investments across all companies (e.g. >$1.0Million) in region to optimize strategy and alignment
- Each major program/project is steered and monitored by a Program/Project Steering Committee, comprised of Business/IT folks with decision making rights
- Corporate and regional CIOs is developing three IT policies for adoption and deployment by regional teams to improve effectiveness, efficiency and better control of compliance:
  - Project Management Policy & process (using PMI's PMBOK and Prince2). Global training is required., but regional have enforcement flexibility
  - ITIL policies and processes are being developed and deployed in IT Operations on a consistent basis globally, with an initial focus on 6 process areas
  - IT architecture and security is consistent applied global
  - People skills, competency & career choices model in-process

Issues and/or Problems

- Consolidate data centers by region to further reduce costs
- Balance investments to support growth while integrating and streamlining the back office IT operational resources
- Two levels of steering (regional and business unit) is being simplified to one to simplify one face to customer
- Lack of consistent IT policies, practices and standards
- Limited compliance documentation and limited sustainability

Results – Alignment

- IT/Business Investment Steering Committee significantly improved closer alignment
- Established Single Point of Contact between IT and Business Units for Requirements and Priorities
- Alignment has improved significantly, but requirements seem to be always greater than available resources (resource management allocation is being addressed organizationally and being enables with technology)

Global Manufacturing Organization

Results - Program/Project Management

- PM training for all IT folks was mandated by the Corporate CIO
- While a consistent and uniform PM policy and process was developed based on industry standards, each region is empowered to implement based on their environment and culture – some regions are more disciplined than others.
- Major project metrics monitored include schedule, cost, quality, number of open issues and customer satisfaction

Results – Performance Management

- Key performance indicators for IT are:
  - Costs and headcount for IT budget (pressure to constantly reduce is continuous)
  - Major projects, which represent 50-70% of the IT resources are tracked closely based on cost, schedule, resources and high risks. Minor projects are much less rigorously managed
  - IT Service Management and Delivery uses several tools to track and report a variety of dashboard & key performance indicators (e.g. SLAs, asset utilization, men time to repair incidents, etc.)

Results - IT Service Management & Delivery

- ITIL is being adopted as the process standard for IT operations and infrastructure.
- Six ITIL processes have been identified as priorities (e.g. change mgt., configuration mgt., service level mgt., release mgt., incident mgt. & problem mgt.)
- Corporate and regional Centers of Excellence have been formed to develop, adopt, train and deploy ITIL within their region.
- The initiative was launched in 2005-2006 –too early to assess results

Critical Success Factors

- Global CIO sponsorship of consistent global processes and term definitions for Project Management, ITIL and Security, which are deployed with regional and local flexibility
- Clearly defined roles and responsibilities for global and regional IT organizations
- Mandated education and training in these areas
- Sponsor and reward applicable industry certifications
- Use outside consultants to fill gaps and get started

Lessons Learned • Management style in each region will determine the level and degree of IT governance enforcement • Conduct an assessment of IT maturity levels , based on industry best practices, for each governance area, identify gaps and develop a plan to fill gaps • Large, complex and highly visible programs and projects are tightly controlled, while others are controlled based on the discretion of the Project Board and project Manager for the project • Conduct a detailed post-mortem on completed or challenged projects and record lesson learned.	

Summary

- IT Service Management puts a heavy emphasis on the importance of process implementation and improvement.
- Processes should b well defined, documented, scalable, flexible and measured.
- Processes define interfaces between organizations and ensure that the work flow effectively spans organizational silos and boundaries.
- Roles and responsibilities should be well defined with respect to each ITSMD function and process.
- Each process should have an owner.
- Leverage tools to support and enable the efficient management of ITSMD processes.

6.0 Strategic Sourcing, Outsourcing & Vendor Management Excellence

It is not the strongest among the species that survive nor is it the most intelligent. It's those that are most adaptive to change.

Charles Darwin

Objectives

- Identify build versus buy criteria and introduce the outsourcing decision-making scorecard
- Review major outsourcing trends, opportunities, issues and concerns
- Describe the vendor selection, evaluation, contract negotiations and management process
- Discuss the outsourcing governance process and key metrics
- Explain differences between domestic and off-shore outsourcing

What is Outsourcing?

• **Outsourcing – act of obtaining services from an external source**

• **Onshore ((Home Country) Outsourcing – obtaining services from an external source in your home country**

- Rural Outsourcing –variation of home country outsourcing where an organization obtains the services of an external source in a rural area (implies that the service is less expensive)

• **Near - shore Outsourcing – refers to contracting a company in a nearby country, often one that shares a border (but not always). Canada or Mexico are near – shore countries for United States based organizations**

• **Offshore Outsourcing – refers to contracting with a company that is geographically distant, like India, Ireland, China, Philippines, Israel and Rumania**

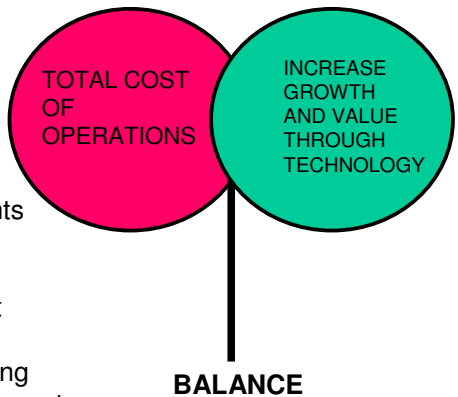
• **Best - shore Outsourcing – A recently coined term that describes which "shore" will offer better communications, lower costs and higher productivity**

Remember, savings from the lower wage rate countries must exceed the increased costs and time of management and risk associated with offshore outsourcing for it to be economically viable.

How to Minimize Technology Total Cost of Operations (TCO) while Maximizing its Use to Achieve Growth, Innovation, Speed and Competitive Advantage

REDUCE/CONTAIN/AVOID COSTS

- **Outsourcing**
- Cost tracking/acct. systems
- Charge Backs
- Benchmarking and best practice comparison
- Management by objectives with rewards and punishments
- Six (6) Sigma quality
- Planning
- Formal Project Management
- Measurements and metrics
- Lifetime education and training
- Continuous process improvements
- IT Service Management (ITIL)



INCREASE VALUE

- Increase revenues
- New products/services
- New distribution channels
- New Markets
- e-Business
- Acquisitions and mergers
- Outstanding customer service
- **Outsourcing**

The Outsourcing Decision-Making Scorecard*

Company Environment: (Yes or no response)

1. Is this a core competency?
2. Does this service need to be provided on a continual basis?
3. Do we have in-house expertise to provide this service?
4. Do we have available staff to provide this service? Is it sufficient?
5. Can we legally outsource the service ?(e.g. restrictive policies or regulations; security or embargo considerations; on-going litigation)

Objectives: (Yes or no response)

1. Can the objectives for this service be clearly defined?
2. Are the objectives short or long term?
3. Can the results be easily and objectively measured?
4. If the objectives are not achieved, will this have a negative impact on the firm?
5. Are the objectives tactical or strategic?

Risks: (Yes or no response)

1. Would loss of content of this service hurt the firm?
2. Would loss of expertise have a negative impact?
3. Is quality-of-service delivery a concern?
4. Would the response time to situational problems be reduced?
5. Would current contract performance be negatively impacted?
6. Would the impact of the vendor going out of business be significant?

Source: Modified from Brown & Wilson, "the Black Book of Outsourcing"

Vendor Evaluation/Governance: (yes or No)

1. Are there known vendors for this service?
2. Are the vendors known to have the capability and capacity to provide this service?
3. Is the vendor certified vis-à-vis an industry standard (e.g. ISO, PMI, CMMI, ITIL, etc.)?
4. Does the vendor have local and international presence and capability?
5. Has the firm had previous experience with the vendor?
6. Does the vendor have a superior reputation for delivering high quality services?
7. Will the vendor comply with the firms governance requirements?

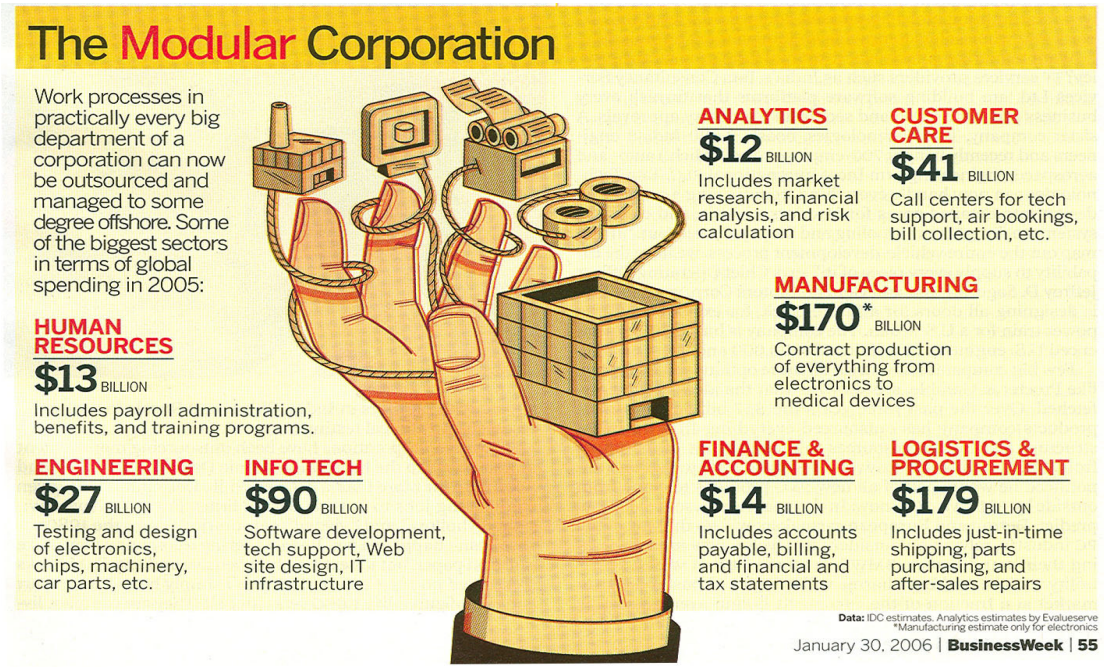
Outsourcing Motivations – Build versus Buy Criteria

BUY (OUTSOURCING) CRITERIA	BUILD (IN-SOURCING) CRITERIA
Cost Reduction	Competitive advantage (proprietary requirements)
Speed up time-to-market	Expertise available in-house
Assist a rapid growth situation or overflow situations	May be less expensive than buying
Aggressive Schedule	Can be completed on time
Politically correct	Opportunity costs trade-offs
Lower risk	No suitable vendors available
Improve flexibility	Core competency
Acquire new skills/resources/management	Security and control are critical
Avoid major capital investments	Strategic initiative or function or process
Improve performance	Threat to intellectual property
Enable innovation	

Major Outsourcing Trends & Challenges

- Growing Market -$ 500+Billion at 15-20% per year - I.T. and Non- I.T. (Engineering, Architecture, Medical Transcription, etc.)
- Faster, but slowing Offshore Growth:
  - Major Countries – India, China, Ireland, Israel
  - Emerging Countries – Philippines, Brazil, Russia & Eastern Europe, Some African Countries
- Growing near shore –Canada and Rural Shore (USA rural states)
- Balance Scorecard of Performance Metrics:
  - Management – Financial, Quality, Delivery Schedule, Customer Satisfaction, Other
  - Operational - SLAs, Responsiveness Index, Mean Time to Repair, Up Time, Redundancy, Availability, etc.
- Penalties for Non-Performance
- Reward for Extra-Ordinary Performance
- Contingency & Backup Provisions
- Varying Models & Contract Durations

Leading to What Some Have Called the Modular Corporation, the Estimated Value of the Outsourced Functions = $546 Billion+ in 2005.



Outsourcing Goes Global

India still dominates services offshoring, with three-fifths of total industry revenues, but other countries around the world are trying to horn in on the lucrative work

REGION	 CENTRAL AND EASTERN EUROPE	 CHINA AND SOUTHEAST ASIA	 LATIN AMERICA AND CARIBBEAN	 MIDDLE EAST AND AFRICA
Market Size	**$3.3** BILLION	**$3.1** BILLION	**$2.9** BILLION	**$425** MILLION
Top-Ranked* Countries	Czech Republic, Bulgaria, Slovakia, Poland, Hungary	China, Malaysia, Philippines, Singapore, Thailand	Chile, Brazil, Mexico, Costa Rica, Argentina	Egypt, Jordan, United Arab Emirates, Ghana, Tunisia
Up-and-Comers	Romania, Russia, Ukraine, Belarus	Indonesia, Vietnam, Sri Lanka	Jamaica, Panama, Nicaragua, Colombia	South Africa, Israel, Turkey, Morocco
Emerging Local Providers	Luxoft (Russia), EPAM Systems (Belarus), Softline (Ukraine), DataArt (Russia)	NCS (Singapore), Bluem, Neusoft Group, BroadenGate Systems (China)	Softtek (Mexico), Neoris (Mexico), Politec (Brazil), DBAccess (Venezuela)	Xceed (Egypt), Ness Technologies (Israel), Jeraisy Group (Saudi Arabia)

Data: Gartner, A.T. Kearney, Nasscom, *BusinessWeek*

* Rankings by A.T. Kearney list countries in order of attractiveness for outsourcing, based on costs, people skills, and business environment. (Source: A.T. Kearney Global Services Location Index 2005)

Outsourcing – Vendor Views

- Substantial Revenue Stream Potential
- Growing Global Market
- Long Term Customer Relationship
- Competitive Environment
- Bid Process Expensive
- Technically Complex
- Pricing Sensitive – Make Provisions for Change
- Cost Estimating Difficult
- Increased Pressure to be Certified in Quality, Software Development, Project Management, ITIL, Security, etc.:
  (e.g. ISO 9000, 17799, 20000, SEI's CMMI, PMI's PMP)

Outsourcing – Customer Views (& Wants)

• Quality = or > Current

• Reduced Costs & Reduced Capital Expenditures

• Availability, Reliability, Dependability, Credibility, Bench Strength, Financial Accountability and Service

• Redundancy, Contingency & Disaster Recovery (No Single Point of Failure)

• Wants Measurable Results with Realistic & Enforceable Metrics

• Wants a Governance & Escalation with Single (Limited) Point of Vendor Contact

• Wants Dependability, Credibility & Disengagement Options

• Global Contract for Volume Discounts (Think Global, Act Local)

Outsourcing – Customer Issues and Challenges

• Security of Data

• Business Continuity

• Geopolitical (Off-shore)

• Vendor Maturity

• Quality of Work

• Schedule Adherence

• Presence (Representation) in US

• Communications and Culture – Distance, Time Difference, Management time to coordinate, Language,

Outsourcing – Can Be Complicated

According to a recent Forrester Research report on Outsourcing based on a survey of organizations buying outsourcing services:

• 53% reported that they have outsourcing challenges because their companies lack project management skills (e.g. they have no experienced outsourcing governance)

• 58% reported that they lack a good process for specifying the work

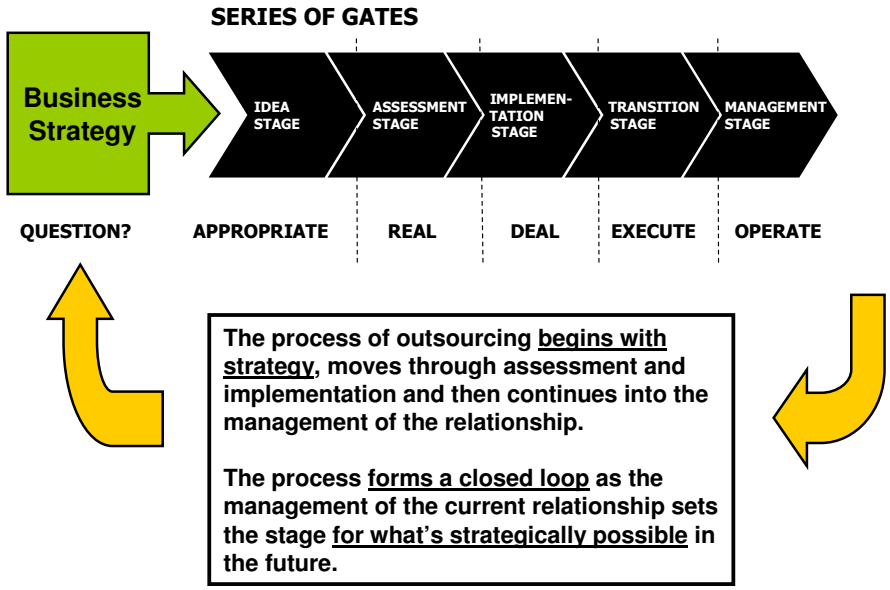
• 48% said they did not have the right metrics for measuring performance

Differences Between Domestic and Off Shore deals

- Vendor cost/pricing structure
- Tax implications
- Regulatory implications
- Political concerns
- Data protection and security
- Sourcing process itself
- Management and governance process is more complex and time consuming
- Legal and arbitration adjudication
- Intellectual property protection

Five Stages of Outsourcing

The five stages of outsourcing include: idea, assessment and planning, implementation, transitions and management (ongoing).



Source: IAOP

Key Business Questions

1.0 Idea Stage

- Which outsourcing opportunities are appropriate in support of the organization's business strategy?

2.0 Assessment and Planning Stage

- With development of the business case and of the provider marketplace, are the anticipated benefits, indeed, real?

3.0 Implementation Stage

- Can we reach agreement on a deal with one of the providers?

4.0 Transition Stage

- Can we execute successfully?

5.0 Management (Operating) Stage

- With the transition complete, are we ready to operate under the new agreement? Are the benefits being realized?

Key Deliverables and Go/No Go Decision Criteria by Outsourcing Stage

Stage	Idea	Assessment & Planning	Implementation	Transition	Management
Deliverables	• Develop Concept • Perform High Level Review of Operations • Identify corporate direction • Perform Situation Analysis & Identify Outsourcing Opportunity • Get executive sponsor • Assign Steering Comm.	• Analyze current processes & functions • Define proposed processes & functions • Define user needs • Perform risk analysis • Develop business case (with plan)	• Issue RFP • Finalize deal structure and terms • Develop and negotiate contract • Develop human resource and asset transfer plan • Communications Plan • Governance plan	• Detailed transition plan (with pilot) • Implement new organization structure • Transfer people, assets, functions and/or processes • Develop training plan • Outplacement plan and arrangements of personnel	• Perform daily management activities • Monitor performance • Implement relationship management process • Institute change management process
Go/No Go Criteria	Appropriate? • Alignment with business strategy? • Core competency? • High level cost/benefit acceptable? • Acceptable risk? • Competitive advantage? • Legal, ethical, etc.?	Real? • Acceptable business case? • Acceptable risk? • Acceptable reward/ risk analysis?	Deal? • Approved/ signed contract?	Execute? • Approved transition plan? • Approved pilot? • Monitor progress in transition and fix issues as necessary • Defined roles and responsibilities for all transition tasks	Operate? • Governance and Metrics Being Met? • Renew, Expand, or Disengage?

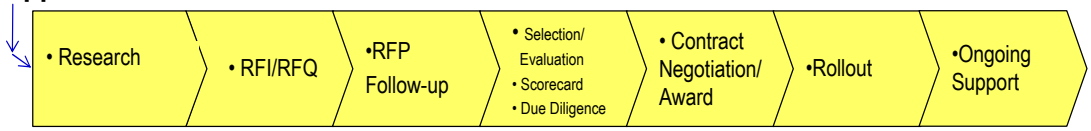
Outsourcing Business Case Outline (Illustrative Example)

1. Executive Summary (Synopsis of Business Case Assessment):
   - Purpose, Objectives, Strategy and Scope
   - Description of Opportunity, Value and Alignment
   - Financial, Operations, HR, Risks
   - Dependencies, Assumptions, Constraints
   - Sponsor and Management Team
2. Assessment of Current Environment (Reference Base –Where are we today?):
   - Current Processes, Functions and Technology
   - Current Costs, Resources, Volumes, Locations
   - Major Issues, Constraints and Sensitivities
3. Proposed Business (Outsourcing) Environment: and Blueprint
   - Proposed Requirements, Processes, Functions and Technology
   - Proposed Cost/Benefit Analysis
   - Major Issues, Constraints and Sensitivities
   - Impact on the Organization, Resources, People
   - Roles and Responsibilities of Buyer and Vendor
4. Change Analysis (Why Change?)
   - Value Proposition Analysis

4. Change Analysis (Why Change)? (Continued)
   - Financial Analysis (description and quantification; full economic life cycle; best case, worse case, most likely case; cash flow (cash in and cash out); costs/savings)
   - Non-Financial benefits
   - Risk Analysis & Mitigation
5. Recommended Approach
   - Structural Model
   - Contractual Model
   - Critical Success Factors
   - Macro Plan, Milestones and Schedule
   - Transition Team
   - Division of Assets
   - Day-to-Day Management
   - Key Performance Indicators
6. Appendices
   - Detailed Project Plan
   - Detailed Risk Management Plan
   - Detailed Contingency and Backup Plan
   - Detailed Communications Plan

Vendor Selection Process Flow

Approved Business Plan



- Internal/external research; requirements definition
- Evaluation criteria
  - RFI/RFP focused on services, infrastructure, technology skills, processes, HR policies, governance and metrics
    - Vendor presentations; reference checks; due diligence
      - Debrief sessions;
      - Weighted scorecard
        - Contract strategy, type & negotiations
        - Transition planning
          - Governance and metrics
          - Operating model/roles
          - Disengagement Considerations
            - Relationship Model

RFIs, RFQs and RFPs

Provide formal request for information, quotation and proposals from customer to service provider.

<u>Request for Information (RFI)</u>
The RFI is used to collect information (business, financial, product, service, other etc.) about companies.

Desired Information:

Company Profile
Products and Services – Current and Future Research and Development Focus and Funding
Financial Stability (Growing or Shrinking)
Plans and Direction
Customer Base and References
Key Players in Organization
Number of Locations and Strategic Alliances
Service, Support and Training Facilities and Resources
Pre-Installation and Post-Installation
Support, Maintenance and Service
+++

Provide formal request for information, quotation and proposals from customer to service provider.

Request for Quote (RFQ)
The RFQ is primarily used to solicit pricing and/or cost information from vendors.

Desired Information:

Requirements and Deliverables (from RFP or high level prior to RFP)
Contract Type, Terms and Special Conditions
Pricing and Discounts
Change Criteria and Their Impact on Pricing
Payment Terms
+++

RFPs provide formal request for information, quotation and proposals from customer to service provider.

Request for Proposal (RFP)
The RFP is used to define the buyer's requirements, scope, objectives and deliverables in order for the vendor to provide a proposal to supply the product or service for evaluation by the buyer .

Desired Information:

Background
Objectives and Scope
General/Detailed Requirements
Functions, Features and Performance Criteria
Standards and regulatory compliance
Constraints – Time, Business, Technical, Other
Governance, Reporting and Dispute Escalation
Customer/Vendor Contacts
Backup, Recovery and Contingency Plans
Vendor's quality assurance and risk mitigation plans
Detailed schedule of deliverables
Insurance
Contract Information and type
Contract Clauses – Discretionary or Mandatory clauses
Recourse, Remedies and Warranty
Pricing
Change Management
Acceptance Criteria
Disengagement Conditions and Responsibilities
+++

Demonstrated Competencies – 15% – People (Recruitment, Training, Experience) – Processes (Benchmarking, Certification, Continuous Improvement) – Technologies (Level of Investment, Leading Edge) – Experience (Functional, Industry, Application) – Proven Performance & Certifications – Track Record of Innovation	***Competitiveness of Solution – 50%*** – Solution itself (Fit to Requirements, Innovative) – Service Delivery (Quality of Processes, Tools, Resources, Performance, Management Depth and Capabilities) – Risks and Risk Sharing – Financial Proposal & Contract Terms (Pricing, Volume Considerations, Structure, Switching Costs, Change Management) – Terms and Conditions (Arbitration, Disputes, Adjudication, Jurisdiction) – Human Resources (Employee Transition, Career Opportunities, Lay Offs, Outplacement)
Vendor Capabilities – 15% – Financial Strength and Stability – Infrastructure and Resources (Bench Strength, Weaknesses/Points of Failure) – Management Systems – Complete Suite of Services (Type and Scope, Ability to Scale, Backup, Redundancy, Security, IP protection, etc.) – Scalability	***Relationship Dynamics – 20%*** – *Culture* – *Mission and Strategy* – *Relationship Management (Flexibility, Partnership, Trust, Executive Presence, Governance and Reporting)* – *Relative Importance (Size, as a Client)* – *Achievement (esp. existing relationship)*

Source: IAOP

Key Outsourcing Contract Negotiation Pointers – Validate in Writing

- Scope, Requirements, Deliverables, Roles/Responsibilities & Schedule
- Financial and legal arrangements – payments, discounts, rewards and penalties, pricing formulas & changes; insurance, taxes, foreign exchange, indemnities, liability limitations & consequential damages
- Acceptance criteria - quantitative and qualitative criteria
- Metrics & Service Criteria - Volume, capacity, speed, performance, quality, documentation, training, mean time to repair, schedule, budget, program/project, etc.
- Governance, Disputes, recourse, remedies, escalation & issues resolution
- Support services - training, documentation, maintenance, service
- Updates, new releases, upgrades
- Performance Warrantees & Service levels – OLAs, SLAs (ranges with incentives, penalties)
- Status reporting periods, formats & contents - What? When? To whom? How often?
- Theory of "NO SUPRISES"
- Disengagement options - conditions, responsibilities, transition plan

Key Outsourcing Contract Negotiation Pointers (Cont'd)

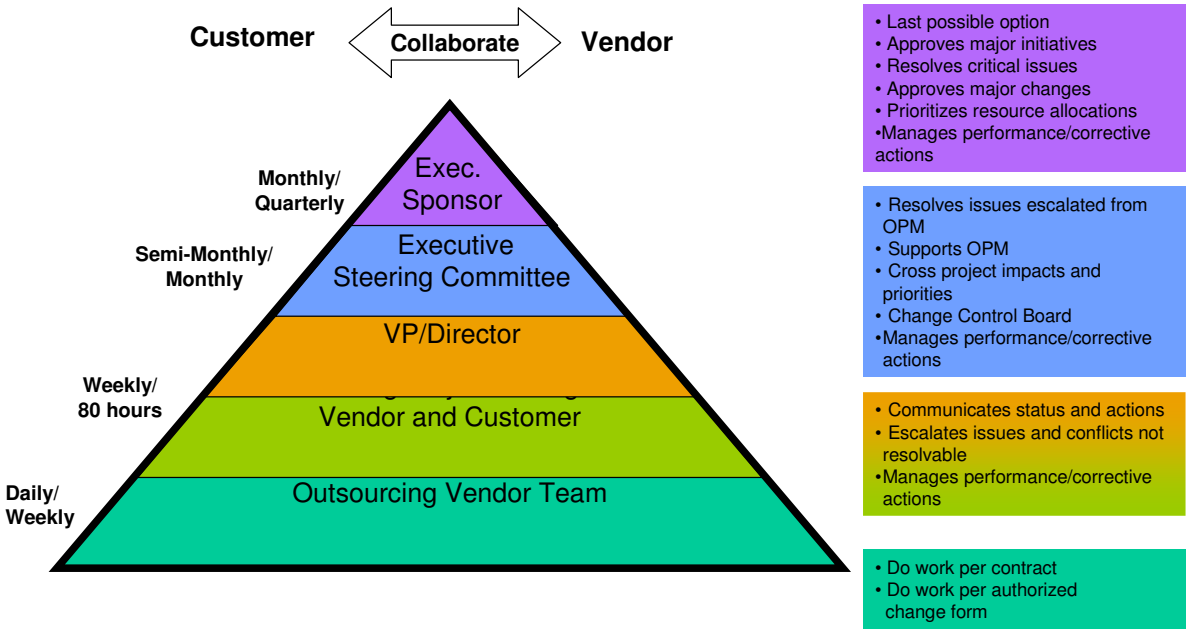
- Responsibilities of both parties
- Ownership of Hardware, Software, Network, Data Contents, etc.
- Change management triggers, process and approvals
- Confidentiality, non-disclosure and security (physical, logical)
- Intellectual property and content protection
- Termination triggers, disengagement process and provisions
- Contingency, Back-up & Disaster Recovery Plans and Resources
- Single Point of Contact

Do's and Don'ts of Strategic Sourcing

Do:	**Don't:**
• Establish a Vendor Selection and Management Team • Appoint a Sr. Manager to Manage the Relationship – both long term and operationally • Establish meaningful KPI's and continuously monitor performance and customer satisfaction • Continually renegotiate contracts • Keep business units accountable and involved • Have a contingency and back-up plan (based on risk assessment) • Develop a long term relationship	• Rely solely on one vendor (Don't put all of your eggs in one basket) • De-skill (keep some experts on your payroll and don't rely solely on the vendor's expertise • Ignore requirement to establish quantitative metrics for performance & accountability • Fail to establish a formal and clear escalation process and authority • Forget to monitor vendor's reputation, profitability and industry certification strategy

Outsourcing Governance and Escalation Roles – Customer and Vendor (Illustrative Example)

A formal outsourcing governance and review process should be established and followed with clearly defined roles, responsibilities and actions.



Summary of 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, Other**
- **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**
- **Governance, Contract Management & Performance Monitoring**
  - **Assure compliance with project or service objectives, scope, schedule, & deliverables**
  - **Measure and evaluate delivered work**
  - **Vendor governance and reporting**
  - **Integrate vendor tasks and deliverables into Project or Operations**
  - **Assign Senior Manager/Director/VP to manage vendor relationship with "clout" (Level should be in proportion to criticality, visibility and & value of initiative**
- **Disengagement Options and Re-In-sourcing Decision**
  - **Options (Outsource with another vendor or In-source)**
  - **Triggers and Conditions**
  - **Ownership – Assets, Licenses, etc.**
  - **Transition Roles, Responsibilities and Plan**
  - **People**

A Case Study – Textron and AT&T
Outsourcing

The Deal: AT&T to upgrade, expand and manage Textron's global communications infrastructure that services the company's 30 business units globally. **Value:** $1.1 billion over 10 years (1996-2006) **Value Proposition:** "Textron must be able to deploy telecommunications technology cost-effectively across the entire enterprise." William Gauld, VP & CIO, Textron **Textron:** $10+ Billion in revenues; 50,000 +employees who operate in 24 time zones in 130 countries and conduct business 24/7.	**What AT&T Brings to Textron** • Ability to build a global network in a compressed time frame and manage the network effectively • Infrastructure to provide full service networking management and technology expertise on a global basis • Alliance and partner relationships with most PTTs in many countires • AT&T Program Manager and team on sight at Textron
Textron Corporate Objectives: • Aggressive growth via acquisitions and new product development (product and innovation centric) • Global expansion and diversity • Productivity enhancement and agility • Operational excellence (cost-centric)	**Benefits of Outsourcing to Textron:** • Ability to scale easily and meet the demand for growth o the business • Reduce Operating cost – over $125Million in 10 years • Ability to implement new technologies efficiently and effectively • Clause in contract allowed Textron to re-evaluate deal every three years.

A Case Study – Textron and AT&T
Outsourcing

AT& T to Perform the following: • Acquire and consolidate Textron's current network (and transition 35 employees to AT&T) • Optimize current service levels • Manage and optimize Textron's network (voice, data and video) • Design and deploy a next-generation network platform on a global basis	**Lessons Learned:** • Develop strong customer/vendor relationship model - Open and honest communications - Formal and informal status and performance reviews • Allow for realistic time and schedule to transition to outsourcing vendor (business unit by business unit)
Select SLA's for AT&T: • Response time of help desk • Network Availability • Accuracy and timing of billing • Meeting scheduled due dates • 3 year re-evaluation of contract's overall performance	

Summary

- Assure that the deliverables and expectations are clearly defined and agreed
- Strong relationship management and stress open communication
- Stress the urgency of meeting deadlines, communicating delays and checking back frequently to assure targets are met
- Spend time on planning, requirements and scope (get right people involved)
- Clarify governance and escalation process with clearly defined roles and responsibilities
- In case of divorce, develop a disengagement plan
- Security and confidentiality safeguards
- Avoid de-skilling (Do not outsource all of your expertise)
- Risk management and change management are imperative
- Contract with a primary and secondary vendor (Do not put all of your eggs in one basket)
- Balance between on-shore and off-shore

Outsourcing is Hard!

7.0 Performance Management, Management Controls and Risk Mitigation

• Those that keep score, know they are winning and have the necessary information to maintain the lead.

• Those that keep score, know they are losing but have the information they need to change direction,

• <u>Those that don't keep score truly don't know their position and may be beyond help.</u>

Objectives

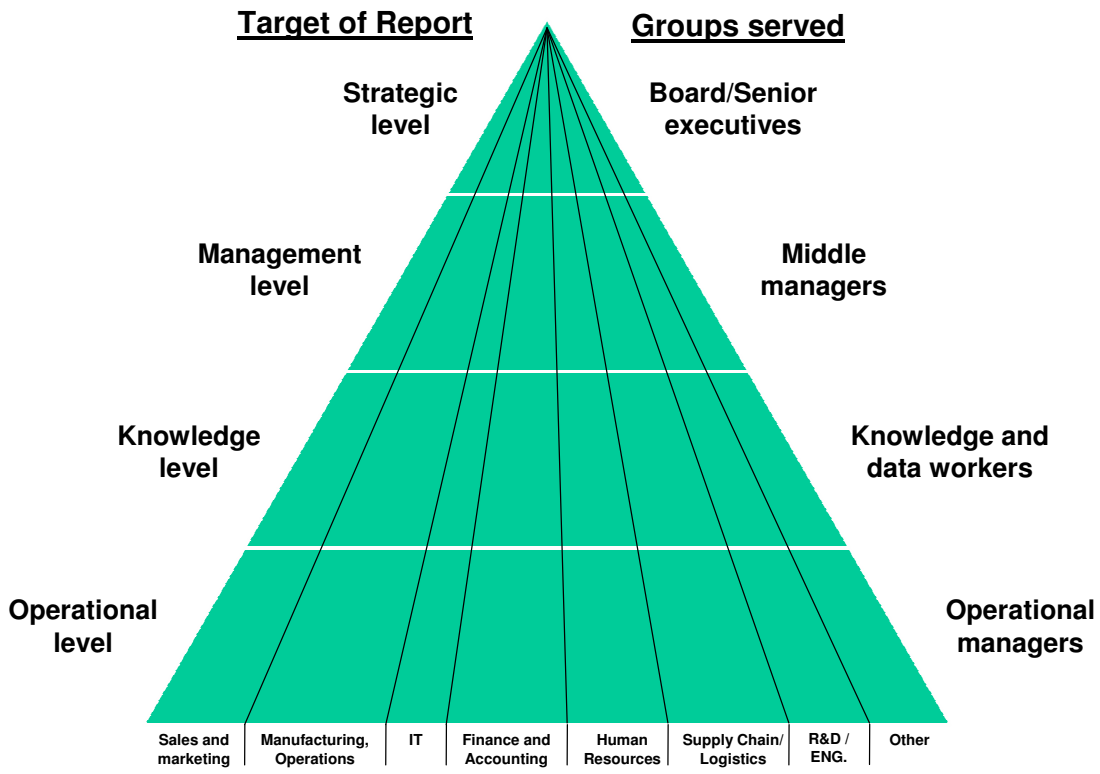
• Understand the issues, constraints and opportunities involved in improving performance management, risk management and management controls as components of IT Governance

• Identify the critical success factors and their related key performance indicators that support the governance objectives of better business/IT alignment, higher IT investment and performance returns and better and more sustainable compliant

• Illustrate various KPIs that can be used to monitor the effectiveness of IT and its major components

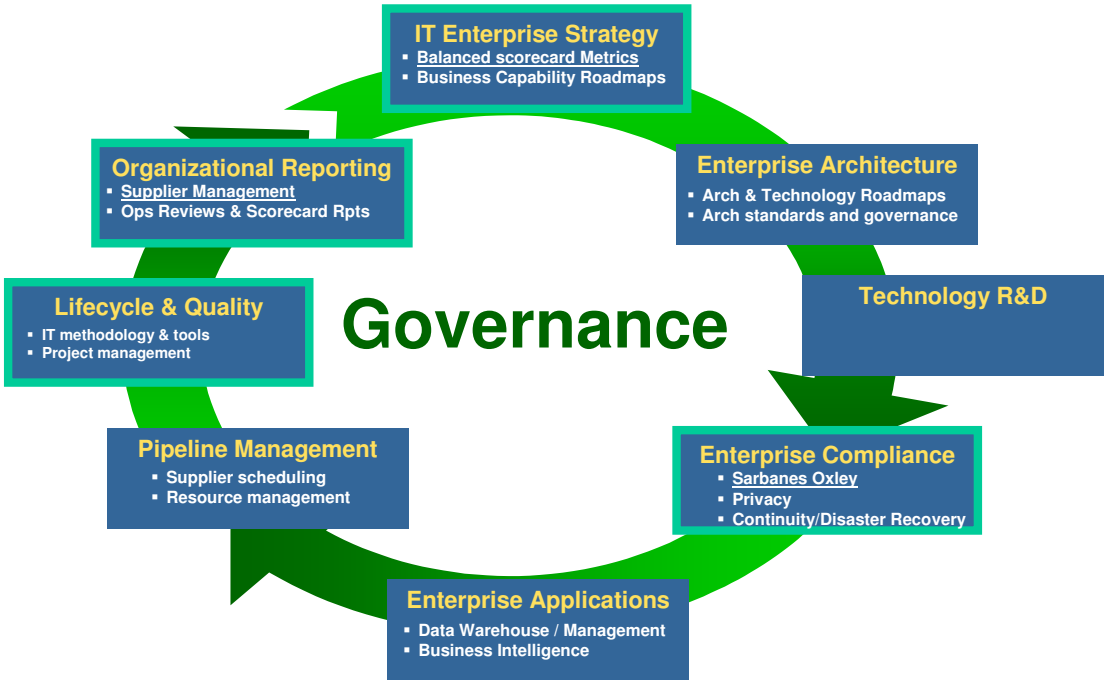
• Discuss how the COBIT framework can be used to establish IT management controls

A Framework for IT Performance Management, Analysis, Control and Reporting - Organizational Levels and Groups Served



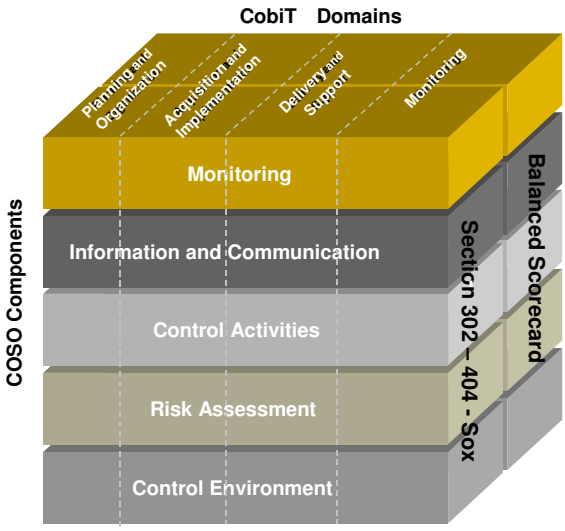
Source: Modified from Anthony, R. N. , Planning and Control Systems: A Framework for Analysis, Cambridge, MA: Harvard University Press (1965)

Key Components for Performance Management, Compliance and Reporting Include: IT Enterprise Strategy, Enterprise Compliance, Lifecycle and Quality and Organizational Reporting



A well-designed sustain framework based on industry standards and guidelines can help create more consistency for performance and compliance management and controls.

- Establish a baseline framework for measurement, reporting and control
- Optimize controls and related processes
- Integrate financial and KPI reporting and internal control processes
- Redirect efforts from risk aversion to risk intelligence
- Enhance market competitiveness
- Reduce the cost of compliance & certification
- Appoint owners to each component and link results with reward system



Principles for Achieving Performance Management Excellence

- Identify critical success factors for the business and IT and identify the key performance indicators linked to factors
- Build key performance indicators into your performance evaluation system, starting at the top and permeating to all positions that can influence those KPIs
- Make KPIs relevant, simple, comparable, easy to report and focused on goals and objectives
- Define and issue a management control policy and related procedures, which identify all of the areas requiring management controls
- Monitor, audit and assure that IT operates in accordance with the approved Management Controls
- Develop a risk management and mitigation plan, policy and process

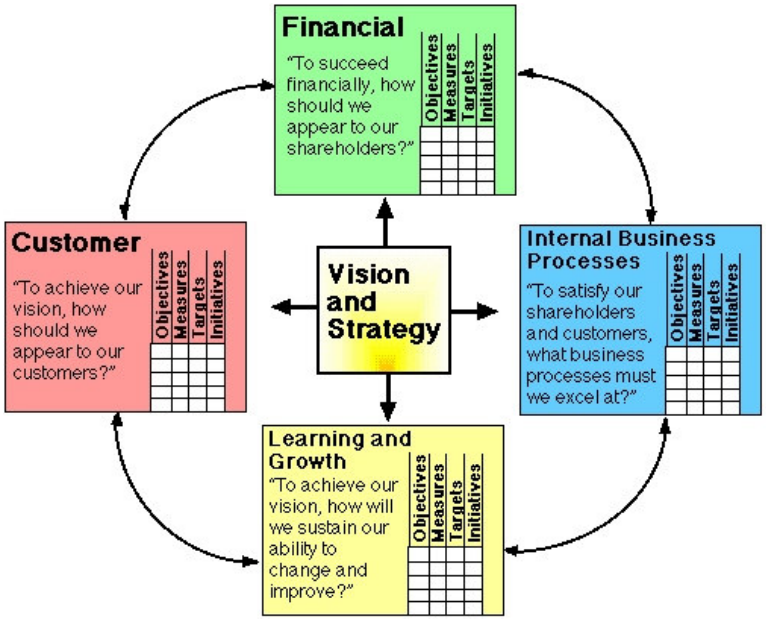
What Key Performance Indicators Should be Tracked?

- Revenues/ Costs/ Profits
- Headcount
- People Skills, Competencies, Certifications and Learning
- Workload/Availability/Capacity/Quality
- Speed & Innovation
- Alignment
- Technology Absorption Rate
- Organization Agility and
- Process Innovation and Continuous Improvement
- Program/Project Management Execution
- Service Level and Management
- Integration and Synergy
- Customer, Employee and Management Satisfaction
- ++++

You get what you measure, so it is critical to measure the right things.

The Balanced Scorecard

Identifies what companies should measure to translate their vision and strategy into actions.



Source: http://www.balancedscorecard.org/basics/bsc1.html

CSFs for IT and Key Performance Indicators

Performance Management

What Key Performance Indicators Should Be Tracked for IT?

The CSFs and KPIs are best determined by the current environment, objectives and strategies of an organization. They must be measurable, comparable & reportable.

• **Critical Success Factor (CSFs) Categories:**

- Financial
- Customer
- Employee
- Process & Product Innovation
- Program/Project Innovation
- Service Level Innovation

• **Key Performance Indicators (KPIs):**

- Financial
- Customer – Internal & External
- Performance – Team & Individual
- Program/Project Mgt.
- Skills/Competencies
- Service availability & readiness

• **Attributes:**

- Performance (Historic)
  - ✓ Time
  - ✓ Cost – Reduction, Containment & Avoidance
  - ✓ Profitability – Direct or Indirect
  - ✓ Responsiveness
  - ✓ Quality
  - ✓ Availability
  - ✓ Capacity
  - ✓ Reliability
- Predictive (Future)
  - ✓ Maturity Level
  - ✓ Capability/Skills
  - ✓ Alignment
  - ✓ Key Issues
  - ✓ Major Risks
  - ✓ Customer Satisfaction

Reality Check – Do the CSFs and KPIs…

- **Translate into specific actions?**
- **Help align business and IT?**
- **Provide leverage to institute change?**
- **Manage end-to-end results across silos?**
- **Drive performance and process improvements?**
- **Allow for benchmarking to compare best practice performance?**
- **Enhance your ability to compete in the future?**
- **Drive learning and innovation?**
- **Predictors of Future Poor Performance?**

Select Balanced Score Card Metrics for Business & IT Governance

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, process and/or technology innovation and transformation, improvement in employee and organizational skills and maturity, etc.
- **Business Processes –** process and quality improvements 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.

Link Business to IT Metrics

Balanced Score Card – Key Performance Indicators - Information Technology*

- **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.
- **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.

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

High Level IT Metrics Included in a Financial Services Enterprise Balanced Scorecard* As Part of Executive Performance Reviews (Illustrative Example)

Financial:

- IT Spending/Company FTE (Full Time Employees)
- IT Spending/Company Revenue
- Keep-the-Lights On Spending/Company FTE

Non-Financial:

- IT Employee Turnover
- Quality of Management Index (Measures IT worker satisfaction with IT management)
- Engaged Employee Index (Measures IT worker motivation)
- Risk Mitigation Index (Measures degree of risk mitigation actions)

Note: Numerous intra-IT project and service level metrics are used as well.

Select Balanced Scorecard Metrics – A Composite of Case Study Companies (Illustrative Example)

Financial Performance	
Most Common Metrics	**IT Departmental Cost**
Total IT expenditures as a % of sales	IT cost per employee
IT cost per employee	Total IT spending by geography
Total IT spending by geography	Total IT spending by business unit
Percentage of IT expenditures new versus maintenance systems	Expenses compared to revenue per quarter
Percentage of "lights on" operating costs (including break/fix, depreciation) versus total IT spend	Spend per portfolio category (e.g. new revenue generation, cost reduction, business transformation)
Project and Investment Cost Performance	Performance against IT spending performance
Percentage of R&D investment resulting in operational applications	Central IT spend as percentage of total IT spend
Total value creation from IT enabled projects	Net present value delivered during payback period
IT Project ROI	
Percentage of key projects completed on time within budget	
IT Service Management and Delivery Costs	
Dollar value of technology assets still in use beyond depreciation schedule	
Share of discretionary spending shared by IT	
Percentage reduction in maintenance cost of all systems	
Average network circuit cost reduction per quarter	
PC/laptop software maintenance cost per month per user	
Workstation software maintenance cost per month per workstation	
E-mail service: cost per month per user	
Infrastructure spending as a % of total IT spending	
Total maintenance cost	
Percentage of year-over-year cost reduction per service	
Total cost of ownership of IT services versus external benchmarks	
Service unit cost	

Select Balanced Scorecard Metrics – A Composite of Case Study Companies (Illustrative Example) **(Cont'd)**

Project Management Performance	
Most Common Metrics	**Project Alignment with IT Strategy**
Percentage of projects on time, on budget, within scope	Percent of projects directly linked to business objectives
Percentage of projects compliant with architectural standards	Percentage of applications deployed on a global basis
Customer Satisfaction Index	Percentage of infrastructure standardization projects of total project pool
Project Spending and Costs	Percentage of projects using common project methodology
Actual versus planned ROI for implementation of key initiatives	Percentage of application failures within first 90 days of deployment
Percentage of projects with completed business case	Percentage of "at-risk" projects that adopt quality, security, and compliance standards
Percentage of budget allocated to unplanned projects	Increase in project management maturity
Earned value (for Federal Government Projects)	Project quality index
Cost Performance Index	
Project Timeliness and Delivery	
Percent and cost of project rework due to changed scope, poor requirements definition, etc.	
Average project duration	
Percentage of projects with detailed project plan	
Dollars saved through productivity improvement and reusable code	
Schedule performance index	
Percentage of project milestones delivered	

Select Balanced Scorecard Metrics – A Composite of Case Study Companies (Illustrative Example) **(Cont'd)**

IT Service Management and Vendor Performance	
Most Common Metrics	**IT Vendor Management**
Key applications and systems availability Help-desk first-call resolution rate	IT contract cost ($) IT contract cost as a % of IT spend IT project completion (on time, within budget) SLA performance (%) Customer satisfaction index (%)
User-Centric Operational Performance	**Help-Desk Performance**
Average number of incidents per user per month (average number of times end user experiences global desktop availability outages per month) Consistently available and reliable IT services to users Rate of failure incidents impacting business	Mean time to repair for all network and desktop outages Mean time to repair for all application systems outages less than four hours Percentage of infrastructure service requests closed within service level agreements
Network and Systems Performance	**Operational Strategy Adoption**
Print server availability All critical systems and infrastructure have viable business continuity plans System/application database maintained with more than 95 percent accuracy E-mail transmit less than 20 seconds (all regions) Monthly average of network availability consistently more than 99.5 percent Monthly average of critical systems availability consistently above 99.5 percent Mean time to repair for all client outages less than two hours Network uptime PC/laptop hardware fix or replacement within 48 hours Total cost of ownership of identified products and services compared to industry standards	Completion of service transformation with minimum business disruption All announced changes completed within advertised downtime window Percentage of IT architectural plans approved, reviewed, and accepted by business Number of applications used by more than one line of business Percentage of desktop PC standardized End-to-end availability for customer service IT effectiveness in resource allocation supporting business objectives Identify and manage strategic alliances with IT partners Decrease average development cost by 10 percent
Information Security	
Percent of systems compliant with IT security standards Number and type of security incidents time to respond and resolve security incidents	

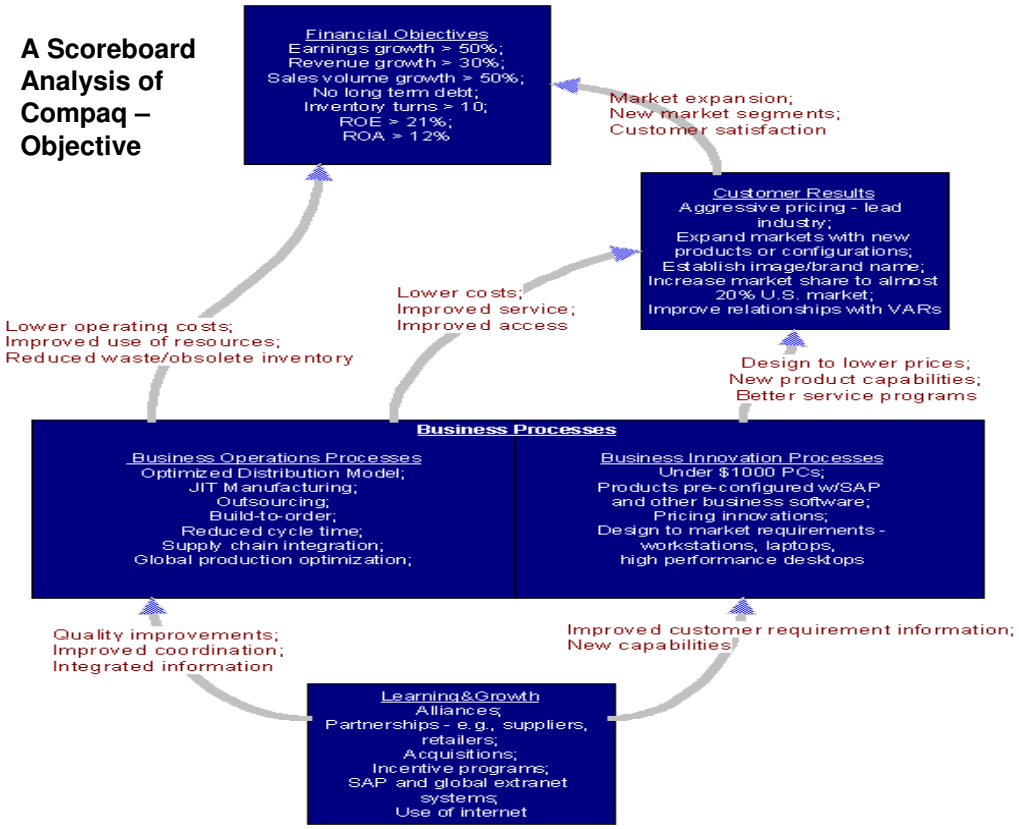
Select Balanced Scorecard Metrics – A Composite of Case Study Companies (Illustrative Example) **(Cont'd)**

IT HR Skills Management	
Most Common Metrics	**Training and Personal Development**
Employee morale/satisfaction Overall IT staff retention and attrition rate	Percentage of performance assessment and development plans delivered to employees Percentage of employees with mentors Percentage of employees with individual development plans Percentage of individual training objectives met Employee "business knowledge" survey performance Percentage of managers trained in employee motivation Percentage of staff with appropriate measures for their personal goals Share of IT training spent in business units Number of IT person-hours spent at industry events Number of training hours per employee per quarter
Staffing	**Marketing/ PR - Related Metrics**
Percentage of non-entry-level position filled internally Average tenure of solid performers (in years) Percentage of projects assignments that are cross-functional Ratio of skills sets needed to skills set represented Performance against staff diversity goals Number of candidates interviewed per open position IT headcount (number of full-time IT staff) Contractor headcount Percentage of planned staffing levels Average years of IT experience Percent of IT staff who are certified (number of industry recognized certifications)	Number of awards won by company for use of IT Competitiveness of current employment offer versus industry Citation of IT organization in press

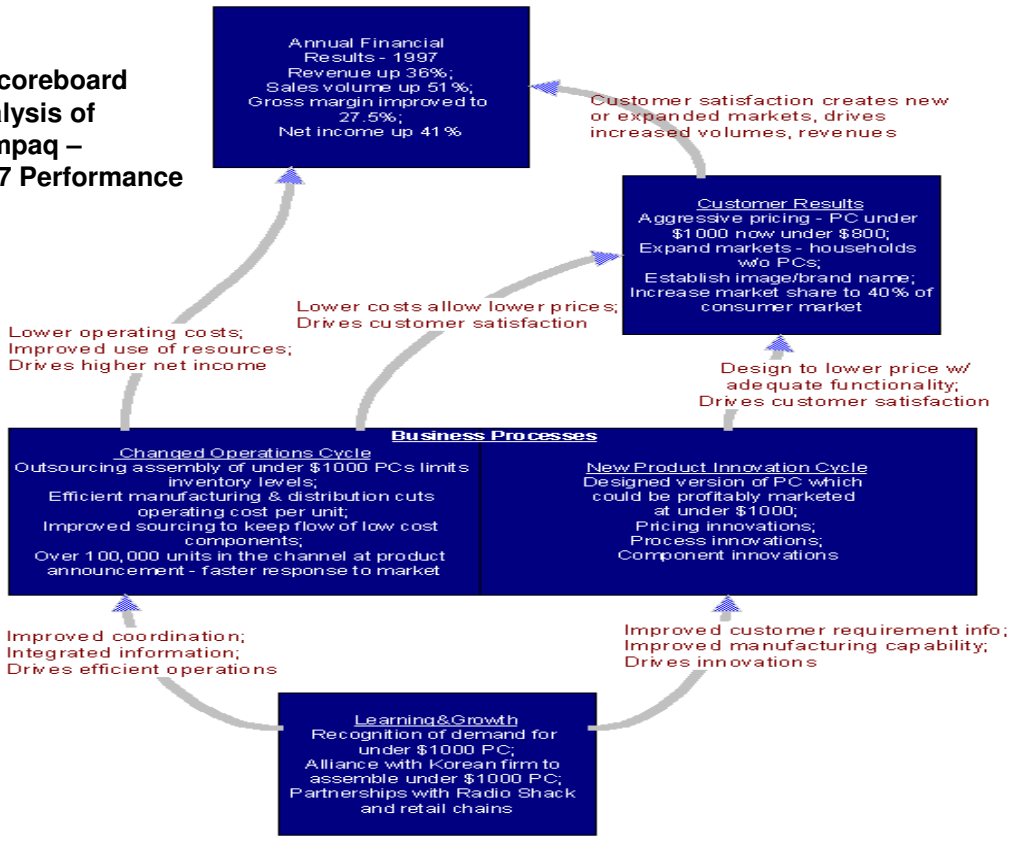
Figure 8.7 – Select Balanced Scorecard Metrics – A Composite of Case Study Companies (Illustrative Example) **(Cont'd)**

Customer Satisfaction
Most Common Metrics
Customer satisfaction survey – quarterly or semi-annually
Surveys
Overall business executive satisfaction rating
Survey Questions
Perceived versus actual price competitiveness of IT services
Perceived ability to deliver technical/business solutions and services
Quality of communication about available services and new technologies
Help-desk client satisfaction—percent dissatisfied
Contribution to business process improvement and innovation
Contribution to business value creation
Contribution to corporate business strategy

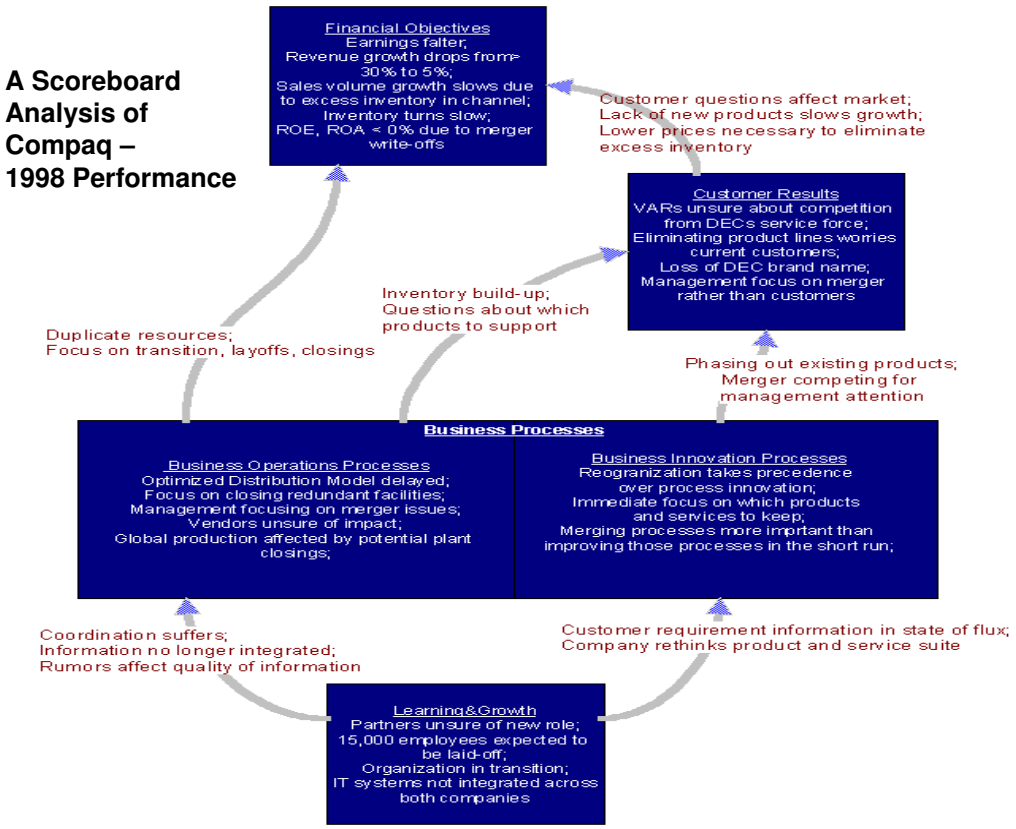
A Scoreboard Analysis of Compaq – Objective



A Scoreboard Analysis of Compaq – 1997 Performance



A Scoreboard Analysis of Compaq – 1998 Performance



Governance Report/Meeting Calendar

Performance Report

A Governance Schedule should be issued annually Identifying the Key Deliverables, Reports, Review Meetings, etc.

JAN | MARCH | MAY | JULY | AUGUST | OCT | DEC

Strategic & Operational Plans & Budgets (Capital & Expense)
PROGRAMS, PROJECTS and INFRASTRUCTURE OPERATIONS PLANS/BUDGETS/REPORTS*

- **Strategic Plan**
  - Annual Operating Plan
    - Investment Approvals
    - Program/Project Reports, Metrics and Reviews
    - IT Service Management & Delivery (Operations and Infrastructure Reports, Metrics and Reviews
- **Program/Project Plans**
  - Charter
  - Schedule
  - Budget
  - Deliverables

Weekly
- Projects Status Report (milestones/issues)
- Operations Status Project
- Technical Exchange Group
- Staff Meetings
- Weekly Activity/Status Report to Management

Bi-Weekly/Monthly
- Project Status Reviews (Financials, Schedule)
- Monthly Management Report
- Multiple Dash Boards (Top 10 Projects + Key Service SLA's) – Green, Amber, Red Report

Bi-Monthly/Quarterly
- Executive Steering/Governance Board Reviews

Semi-Annual/Annual
- State of IT Report Card
- Performance Reviews

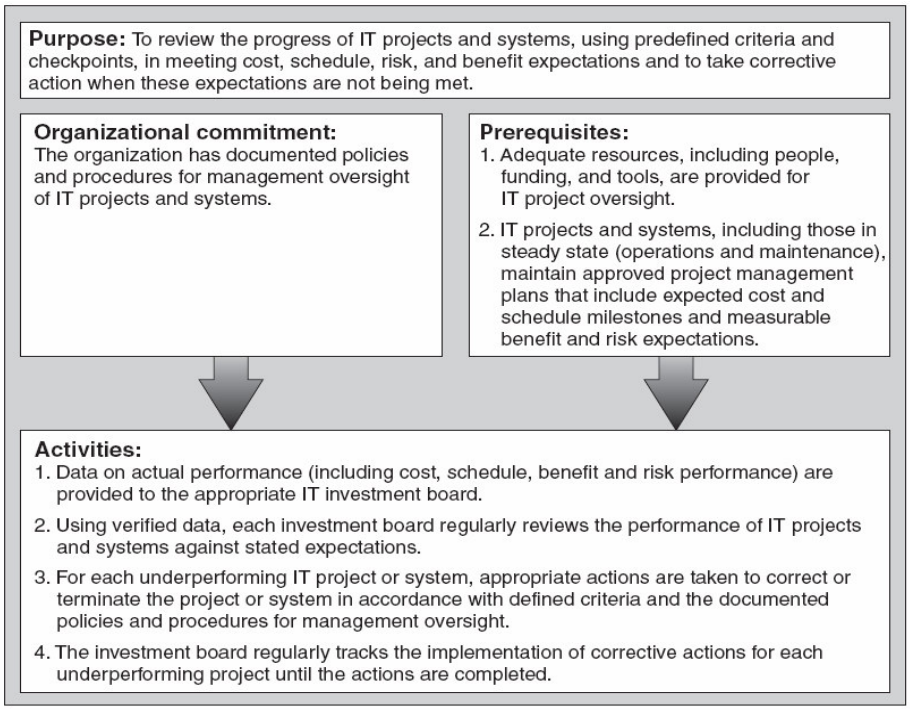
Performance Management

Select Examples - Key Performance Indicators, Dash Boards and Tool Outputs

- While each IT governance module in this workshop provided examples of KPIs that measure a specific component, the following slide illustrate additional examples of relevant KPIs in select areas:
  - Alignment
  - Program/Project Investment Management
  - IT Service Management & Delivery
  - Financial and Asset Management
- There are numerous software tools that enable enterprises to collect, record, analyze, track and report KPIs relating to each IT Governance areas, but none thus far, that address all of the areas. Several vendors are working on tools that address the enterprise governance processes.

The bottom line for each organization is to define, track and enforce those KPIs that measure the CSFs and objectives and <u>are relevant</u> to the performance management practices and compensation incentives of their enterprises.

Program/Project Investment Board Oversight *Performance Management*



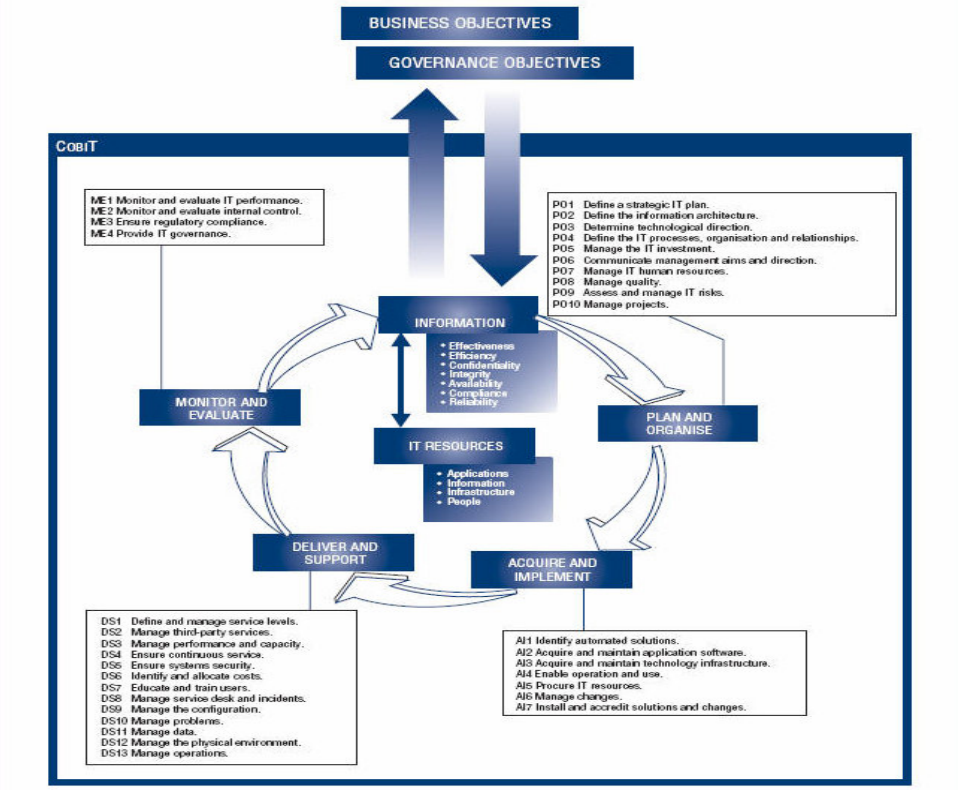
Source: GAO.

Management Controls *Performance Management*

COBIT, previously described in Module 2 provides a reference framework to identify and develop the appropriate management control and audit policies and procedures for an organization. Some assumptions to consider:

- Many management controls apply to all IT organizations
- Some management controls may be unique and applicable to only specific organizations based on regulatory, legal, environmental and other factors
- Management controls should be focused on improving compliance, audit-ability, traceability and integrity
- The 34 COBIT process areas identify the areas that should be prioritized and for which management controls should be established and maintained

COBIT IT Processes by Domain*



* Source: ITGI

COBIT ®(Control Objectives for Information and Related Technology)

Domain → / Process ▼	Planning & Organization	Acquisition & Implementation	Delivery & Support	Monitoring
P01- Strategic IT Plan	X			
P02- Information Architecture	X			
P03- Determine Technology Direction	X			
P04- IT Organization	X			
P05- Manage IT Investment (Portfolio Investment Management)	X			
P06- Communicate Direction	X			
P07- Manage Human Resources	X			
P08- Ensure External Compliance (SOX ++)	X			
P09- Assess Risks	X			
P10- Manage Projects (PMMM, PMBOK,Prince2, CMMI, etc.)	X			
A11- Identify Automated Solutions		X		
A12- Buy/Maintain Application Software		X		

COBIT ®(Control Objectives for Information and Related Technology) (Cont"d)

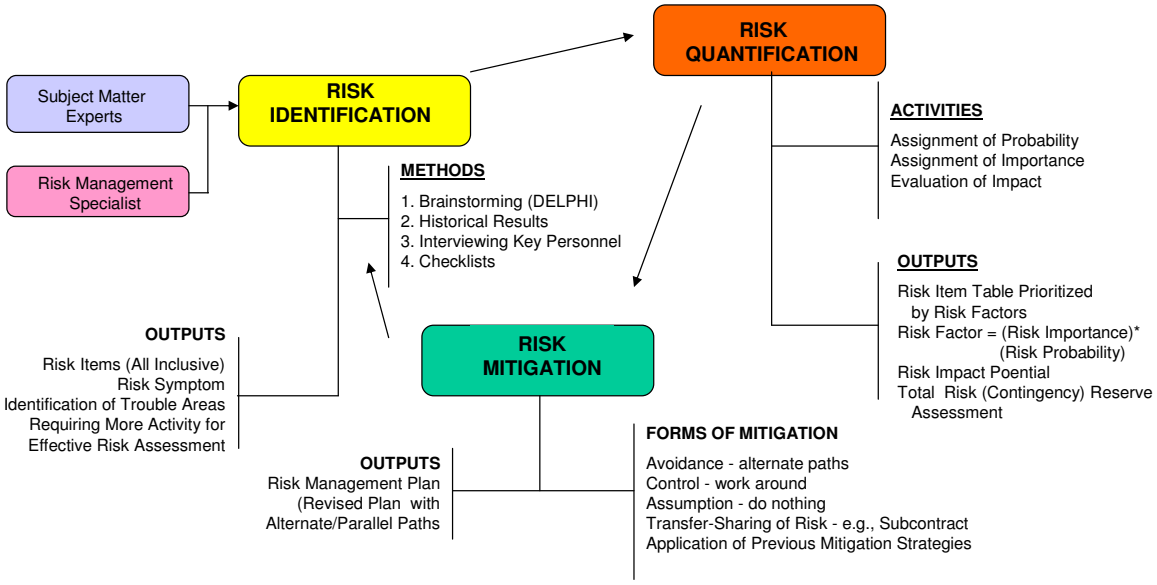
Domain → / Process ▼	Planning & Organization	Acquisition & Implementation	Delivery & Support	Monitoring
A13- Acquire/Maintain Technology Infrastructure (ITIL)		X		
A14- Enable Operations & Use (ITIL)		X		
A15- Procure IT Resources		X		
A16- Manage Changes (ITIL & PM)		X		
A17- Install & Accredit Solutions		X		
DS1- Define & Manage Service Levels (ITIL)			X	
DS2- Manage Third party Services			X	
DS3- Manage Performance & Capacity (ITIL)			X	
DS4- Ensure Continuous Service (ITIL)			X	
DS5- Ensure Systems Security (ISO 17799 & ITIL)			X	
DS6- Identify/allocate costs			X	
DS7- Educate/Train Users			X	
DS8- Manage Service Desk & Incidence (ITIL)			X	
DS9- Manage the Configuration (ITIL)			X	

COBIT ®(Control Objectives for Information and Related Technology) (Cont"d)

Domain → / Process ▼	Planning & Organization	Acquisition & Implementation	Delivery & Support	Monitoring
DS 10- Manage Problems (ITIL)			X	
DS11- Manage Data			X	
DS12- Manage Facilities & Physical Environment			X	
DS13- Manage Operations (ITIL)			X	
ME1- Monitor & Evaluate IT Performance				X
ME2- Monitor & Evaluate Internal Controls				X
ME3- Ensure Regulatory Compliance				X
ME4- Provide IT Governance				X

By addressing these 34 high-level control objectives, the business process owner can ensure that an adequate control system is provided for the IT environment.

Outlines the Flow of the Risk Management and Mitigation Process



Risk Management & Mitigation

Definition:

Risk analysis is the systematic identification of potential areas of project uncertainty or concern. There are three primary aspects of risk management to be considered:

- Risk identification and analysis
- Risk quantification
- Risk response & contingency plan development

Guidelines for identifying and analyzing risk:

Isolate potential risks in each of the following areas:

Schedule:

- Tasks on the critical path
- Tasks having several predecessors
- Tasks that have minimal float
- Optimistically estimated tasks
- Tasks reliant on external dependencies, such as vendor deliverables
- Major milestones
- Unforeseen events (a key employee quits)

Resources:

- Tasks with an individual
- Tasks with many people assigned
- Tasks using scarce resources
- Tasks with technology, facilities & outsourcing vendors

Risk Management & Mitigation (Cont'd.)

Business/Service Continuity:
- Disruption of business processes
- Disruption of IT service
- Lack of disaster prevention/recovery plans

Budget:
- Uncertainty of corporate budgeting
- Shifts in corporate budget priorities
- Uncertain resource costs or availability

Scope
- Dynamics of customer requirements
- Availability of tools and/or techniques
- Large number of quality defects
- Competitor actions
- Vendor deliverables, quality, timelines, service levels, financial viability, etc.

For each risk, ask these questions, then assign a value of high, medium, or low:
- What are the possible triggers for these risks?
- What is the probability ($ or time) this risk will occur?
- What would be the impact on the project if this risk should occur?
- What can be done to mitigate the risk (e.g., avoid, mitigate, contingency)

For risks with high rankings for either impact or probability, develop contingency plan by:
- Developing authorized revisions to the schedule, resource assignments, or scope
- Developing alternative actions, contingency plans and disaster recovery plans

Risk Assessment Matrix – Used to quantify risks and suggests areas that should have contingency plans (High risk areas are denoted in RED)

Risk Exposure Key
Highest (R_E = 15-20) Contingency Plan Required
High (R_E = 9-12) Contingency Plan Highly Recommended
Medium (R_E = 4-8) Contingency Plan Discretionary
Low (R_E = 1-3) Contingency Plan Not Required
Risk Exposure (R_E) = R_I x R_P

Criteria	Risk Impact [R_I]			
Hazard	Unrecoverable impact to environment, system, and/or personnel health ***and/or***	Major damage impact to environment, system, and/or personnel health ***and/or***	Minor impact to environment, system, and/or personnel health ***and/or***	Negligible impact to environment, system, and/or personnel health ***and/or***
Schedule	Unachievable ***and/or***	Serious delay (>30% late) ***and/or***	Moderate delay (10%-30% late) ***and/or***	Will meet schedule but use all "slack time" ***and/or***
Cost	Major budget overrun (>50%) ***and/or***	Serious budget overrun (30%-50%) ***and/or***	Budget overrun (10%-30%) ***and/or***	Consumption of all management financial reserves ***and/or***
Support	Unsupportable systems ***and/or***	Major delays in systems modifications ***and/or***	Minor delays in systems modifications ***and/or***	Irritating and awkward maintenance ***and/or***
Performance	Non-achievement of technical performance	Significant degradation of technical performance	Some reduction in technical performance	Minimal to small reduction in technical performance, at the detailed level

Risk Probability [R_P] Criteria	▼ Value(R_E) ►	Catastrophic (4)	Critical (3)	Marginal (2)	Negligible (1)
81%-99% Probability of Happening	**Near Certain (5)**	20	15	10	5
61%-80% Probability of Happening	**Probable (4)**	16	12	8	4
41%-60% Probability of Happening	**Possible (3)**	12	9	6	3
21%-40% Probability of Happening	**Marginal (2)**	8	6	4	2

Risk Management & Mitigation Template (Illustrative Example)

- For each contingency plan, specify the circumstances that would trigger that plan into action.

High Risk Situation *

Probable Causes **

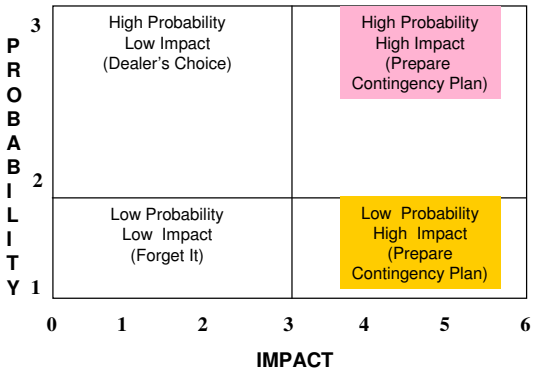
Probability
Hi=3; Med=2; Low=1
Score=

Impact
Hi=6; Med=4; Low=4
Score=

Preventative Plan(s): **
- Mitigate
- Avoid
- Acceptance
- Transfer

Contingency Plan(s): *
- Business continuity
- IT continuity

Trigger Point(s):



* **The Contingency Plan responds to Risk Situation**
** **The Preventative Plan responds to the Probable Cause(s)**

Business/IT Continuity Plan and Checklist Outline

1.0 Preparing the Plan
2.0 Initiating the BCPP Project
2.1 Project Initiation Tasks
2.1.1 Review of Existing BCPP
2.1.2 Benefits of Developing a BCPP (Value Proposition and Marketing)
2.1.3 BCPP Policy Statement
2.1.4 Decision Authority and Approvals
2.1.5Communications Plan
2.2 Project Organization
2.2.1Charter – Objectives, Timetable, Budget, Deliverables, Scope, Authorization
2.2.2 Appoint Project Manager and Team
2.2.3 Reporting Requirements and Metrics
3.0 Assessing Business Risk and Impact of Potential Threats and Emergencies
3.1 Threat Assessment
3.1.1. Environmental Disasters
3.1.2 Terrorist or Other Deliberate Disruptions
3.1.3 Loss of External Services – Supplies, Utilities, Raw Material
3.1.4 Equipment or System or Information Technology Failures
3.1.5 Serious Security Breaches
3.1.6 Other Emergencies

3.2 Business Risk Assessment
3.2.1 Major Business Processes and Locations
3.2.2 Assess Financial and Operational Impact
3.2.3 Determine Time Outage Impacts
3.2.4 Key Business Executives/Personnel and Contact Information
3.3 Information Technology
3.3.1 Determine Business and IT Dependencies
3.3.2 Major IT Systems, Networks and Data
3.3.3 Key IT Personnel and Contact Information
3.3.4 Key IT Vendors and Facilities
3.3.5 IT Recovery Policies and Procedures
3.4 Current Emergency Policies and Procedures
3.4.1 Summary of Current Policies, Procedures and Responsibilities for Handling Emergencies
3.4.2 Key Personnel and Contact Information for Business Recovery Organization (BRO), Escalation and Delegation of Authority
3.4.3 External Emergency Services and Contact Information
3.4.4 Building, Power, Information, Vital Records Backup
4.0 Preparing for a Possible Emergency
4.1. Emergency Response Procedures
4.2 Command, Control and Emergency Operations Center (Crisis Management)
4.2.1 Organization Chart
4.2.2 Key Personnel and Emergency Contact Information
4.2.3 Key Vendors and Suppliers and Emergency Contact Information
4.2.4 Manpower Recovery Strategy
4.2.5 Establish the Disaster Recovery Team
4.2.6 Establish the Business Recovery Team

Business/IT Continuity Plan and Checklist Outline (Cont'd)

4.3 Emergency Response Linkage to Business Recovery	5.2.5 Business Recovery Tasks
4.3.1 Alternative Business Process Strategy	5.2.5.1 Power and Other Utilities
4.3.2 IT Systems, Networks and Data Backup and Recovery Strategy	5.2.5.2 Premises, Fixtures, Furniture (Facilities Recovery Management)
4.3.3 Premises and Critical Equipment and Asset Backup	5.2.5.3 IT and Communications Systems and Facilities
4.3.4 Customer Service and Call Center Backup	5.2.5.4 Production Facilities and Equipment
4.3.4 Administration and Operations Backup	5.2.5.5 Operations
4.3.5 Insurance Coverage	5.2.5.6 Distribution, Warehousing, Logistics and Supply Chain Management
4.4 Key Documents and Procedures	5.2.5.7 Sales, Marketing and Customer Service
4.4.1 Documents and Records Vital to the Business	5.2.5.8 Engineering and Research and Development
4.4.2 Off- Site Storage and Backup	5.2.5.9 Finance, Administration and Security
4.4.3 Emergency Office Supplies	5.2.5. 10 Other +++
5.0 Disaster Recovery	6.0 Testing the Business Recover Plan and Process
5.1. Mobilizing the Disaster Recovery Team, Roles, Responsibilities and Authority	6.1 Planning the Tests
5.2 Disaster Recovery Plan	6.1.1 Test Multiple Scenarios based on Different Threats
5.2.1 Identification of Potential Disaster Status and Assess Extent of Damage and Business Impact	6.1.2 Evaluate Results, Identify Gaps and Improve
5.2.2 Notification and Reporting During Disaster Recovery Phase	7.0 Education, Training and Plan Updating
5.2.3 Prepare Specific Recovery Plans – Detailed Resumption, Recovery and Restoration	7.1. Develop organizational awareness and training programs
5.2.4 Communicate Status of Recovery	7.2 Develop Vehicles for Dissemination Information
	7.3 Develop budget and schedule for plan updates
	7.4 Plan Distribution, Audits and Security

Risk Response & Mitigation Plan Development (Cont'd)

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, impact or both
- **Acceptance** - simply accept the consequences

There are several responses to potential risks:

- **Outsourcing/Procurement** - get additional products/services from outside
- **Contingency Planning** - define action steps that will be taken in the event the risk event occurs, and estimating the costs associated with that action
- **Alternative Strategies** - consider changing the approach
- **Insurance** - may protect against financial losses associated with certain types of risk

Enabling Technologies to Improve IT Governance

Select Technology Software Solution Attributes Necessary to Support IT Governance And Its Major Components

- **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
  - What if alternative analysis
  - Work Breakdown Structure - work package management
  - Task List
  - Organization Breakdown Structure
  - Estimating and budgeting
  - Resource loading
  - Scheduling – multiple techniques

- **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.

Enabling Technologies to Improve IT Governance

Select Technology Software Solution Attributes Necessary to Support IT Governance And Its Major Components

- **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.
- **Product/Service Catalogue** – list of standard repetitive IT product and service solutions offered by IT with pricing and estimated deployment time, etc.
- **Financial Management** – support capital and expense budgets, cost management, budget and forecasts, accommodate multiple base lines and changes, etc.
- **Performance Management** – support and reporting of multiple balanced scorecard metrics - planning, project, operational and service performance dashboards, continuity management, 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.
- **Procurement, Vendor, Outsourcing Management** – Link to vendor governance and reporting, contract management, license tracking, metrics, escalation, etc.

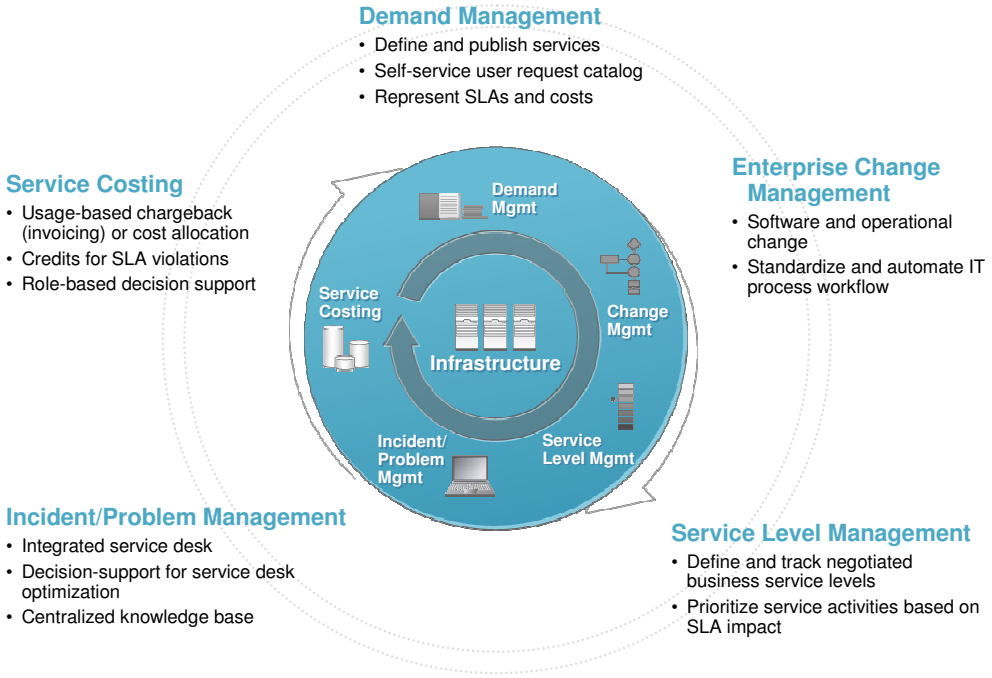
Enabling Technologies to Improve IT Governance

Select Technology Software Solution Attributes Necessary to Support IT Governance And Its Major Components

- **Compliance Management** – documentation, traceability, secure third party access, audit support, 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)
- **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
- **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.

Service Life Cycle Management Processes Supported by Tools

(Illustrative Example)

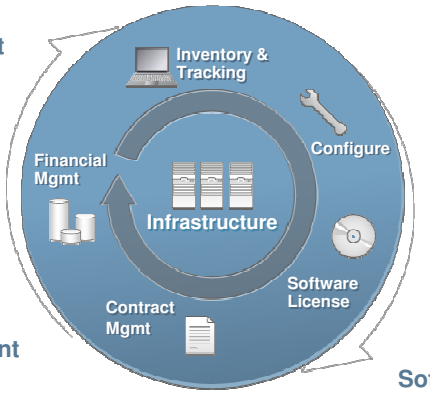


Source: CA

Asset Management Processes Supported by Tools (Illustrative Example)

Asset Inventory and Tracking
- Understand inventory and usage
- Provide detailed history of changes

Financial Management
- Budget and forecast
- Procurement to retirement



Configuration Management
- Update software and apply patches
- Support migration and standardization efforts
- Deploy and provision systems

Contract Management
- Manage leases
- Insight into TCO to support negotiation

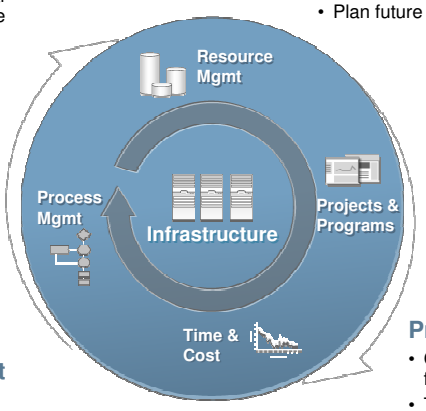
Software License Management
- Meet true-up requirements
- Discover over- and under-utilized licenses

Source: CA

People and Project Management Processes Supported by Tools
(Illustrative Example)

Process Management
- Create templates, graphical workflows and best practice methodologies
- Report on process compliance

Resource Management
- Catalog, assess and search skills
- Plan future capacity by role



Project Management
- Create estimates, budgets and forecasts
- Track deliverables and progress against milestones
- Manage issues and risks

Time and Cost Accounting
- Account for actual project costs
- Allocate and charge-back project work

Source: CA

Leading Software Organization

Environment & Drivers

- Annual revenue range -2004 - $3.0 to $6.0Billion
- Number of IT personnel range – 500 – 800
- Major compliance issues with former executive management team (replaced by new executive management team focused on transformation and re-invigorating growth)
- Former IT organization was reactive, lethargic and slow to address business needs
- Lack of formalized IT policies, practices and disciplines
- New CIO reports to CEO and is part of the senior executive management team
- Fragmented business processes

Approach

- New executive management team hired a new CIO, who brought in a new senior leadership team in IT
  - Reconstituted Business/IT Executive Steering Group which developed a strategy & priorities focused on: business growth, creating a performance based culture that rewards achievement of goals, accountability and innovation and building strong customer partnerships
  - CIO developed a transformation plan which was approved by executive management team
- IT reorganized with following major functions:
  - IT Strategy and Governance (includes PMO, PR/Marketing & People Development)
  - Application Development
  - IT Operations & Infrastructure
  - Enterprise Architecture

Issues and/or Opportunities

- Poor IT governance, reporting and inadequate business intelligence –requires a cultural change
- Poor IT customer satisfaction and unmet business needs caused business units to ramp up their own systems development functions
- Inadequate and inappropriate IT skills, competencies and leadership
- Challenge – Drive business process transform business for growth and greater profitability using IT
- Self fund (through cost reduction programs) IT budget growth for new initiatives & keeping the lights on
- Lack of business intelligence (multiple sources of inaccurate business information)

Approach (Cont'd)

- IT hired a consulting firm to assist in developing a blueprint for IT governance framework and process.
- Company is moving towards a two year realistic strategic plan (from a three year plan) linked to an annual operating plan
- With new IT management team in place for only six month, many initiatives are in process and key results are not yet clearly visible or measurable (they are definitely going in the right direction, but the jury is still out)

Leading Software Organization

Results – Alignment

- Business/IT Executive Steering Committee (consisting of "C" level executives) are closely coordinated strategy, direction, priorities, investments and periodically review progress on major IT/business transformation initiatives
- Business strategic and operating plans drive IT plans
- IT is in process of developing and deploying a pragmatic strategy and governance policy and process for the organization and re-centralizing IT development based on an improved relationships service with the business units

Results - IT Service Management & Delivery

- ITIL is being deployed on a phased basis to improve customer service, satisfaction and related metrics (e.g. SLA, response and repair time to reported problems and outages, etc.)

Results - Program/Project Management

- An IT PMO is being established using the Nikku software tool for Portfolio Management, Project Management, Time Reporting and Resource Management
- Folks being hired into the IT PMO Center of Excellence are or will be certified via Six Sigma and/or PMI's PMP
- Demand Management (IT Requests for Service) will be reviewed in a consistent and uniform manner based select critical success factors and associated metrics in two categories – Discretionary and Non-Discretionary (Mandatory)

Results - Performance Management

- IT is in the process of identifying key performance indicators to measure its effectiveness and progress

Critical Success Factors • To transform a culture and use IT to enable that transformation mandates the sponsorship and commitment of the CEO and the executive management team • Hire select competent business and IT leaders who bring in external experiences and success and who are not part of the old guard	
Lessons Learned • Conduct an assessment of current state of IT maturity against best practice companies and industry standards • Develop a plan and roadmap for transformation to a desired future state • Assign adequate resource to deploy a successful transition • Make sure that you have the right talent to do the job	

Summary

• Align IT objectives, strategies and initiatives with the customer and develop a set of Critical Success Factors required to meet those objectives – then build Key Performance Indicators to measure performance and monitor improvement and progress or issues toward goals.

• Develop and evolve measurement systems into tools that prepare, predict and prescribe solutions to meet current and future challenges

• Identify and prioritize the IT management control policies and procedures to facilitate compliance, traceability, audit-ability, honesty, security, privacy and control

• Assure that high risk situations are identified and mitigated

• Make sure that the reward and compensation structure is linked to continuous improvement performance management programs:
- Provide a link between outcomes and organizational objectives
- Work to communicate the impact of improvements to all of the stakeholders

8.0 Summary, Lessons Learned, Critical Success Factors & Next Steps

IT is an integral part of the business, therefore IT governance must be an integral part of enterprise governance.

On Survival:

For to win one hundred victories in one hundred battles is not the Acme of skill. To subdue the enemy without fighting is the Acme of skill.

Sun Tzu
The Art of War
Oxford University Press, 1971

Steps in Making the IT Governance Real and Sustainable

- **Must have a corporate mandate fro the top - the Board and the Executive Leadership Team are committed** to implementing and sustaining a robust Governance environment
- Must have dedicated and available resources - identify **Executive Champion** and **Multi-Disciplinary Team** (to focus on each IT Governance component)
- **Do Homework** – Educate yourself on past, current and emerging best practices
- **Market the benefits and communicate the IT governance value proposition to the organization**
- **Develop a tailored IT governance framework and roadmap for your organization based on current and emerging industry best practices**
- Assess the "**current state**" of the **level IT governance maturity (decompose into its major components)**, using a leading industry best practice framework such as CMMI

Steps in Making the IT Governance Real and Sustainable (Cont'd)

- Develop a **"future state"** IT governance **blueprint** (**where you want to be**) & keep it i
- **Decompose the IT Governance components into well defined work packages &** an assig
- Develop an **IT Governance action plan, identify deliverables**, establish priorities, milestones & allocate resources
- **Sponsor organizational and individual certifications in the IT Governance component areas**, where they are available (e.g. PMP, ITIL, IT Security, IT Audit, BCP, Outsourcing, etc.)
- Identify **enabling technologies** to support the IT Governance initiatives
- Establish a "Web Portal" to access IT Governance policies, processes, information and communication wins
- Plan for and sustain IT governance process improvements and link to a reward structure. Create a "Continuous IT Governance Improvement group to sustain the framework

Lessons Learned

- **Don't focus on specific ROI as a measure of success**
- **Use TCO (Total Cost of Operations) and business innovation and transformation metrics such as TBR (Total Benefits Realized) as measures of organizational improvement (Need current environment baseline compared to future projected baseline).**
- **For select well defined projects, ROI may be OK.**

Critical Success Factors

- **IT must work with business leaders to define the right set of CSF's and metrics to reflect and measure the business performance of IT**
- **Clearly define the roles and responsibilities for IT governance, authority and decision making for IT and the business (no ambiguity).**
- **IT needs a consistent and rigorous method of reporting performance both throughout the IT function and to business management (it must be meaningful, comparable and easily measurable)**
- **IT must establish and enforce (make it part of the performance management system) consistent, but flexible policies and processes for all of the components of governance (e.g. alignment, programs, projects, products, services, infrastructure, architecture, etc.)**
- **IT organizations that want to build and sustain higher levels of business impact, effectiveness and compliance will implement "continuous improvement programs," based current and emerging best practices, standards and guidelines and endorse individual and organizational certifications**

Critical Success Factors (Cont'd)

- **Create the right environment and culture (See Appendix for a Change Acceleration Framework)**
- **Get the right people involved with the right attitude for each governance component**
- **Focus fast**
- **Select and deploy automated tools to support the governance processes**
- **Create an IT Governance Center of Excellence**

Develop a Personal Action Plan & Next Steps

Based on the lessons learned, the critical success factors identified in the workshop and your own experience:

- **Identify your and your organizations' strengths & limitations**
- **List and prioritize the gaps in the processes, skills, techniques and tools you and your organization wants and needs to develop and/or update**
- **Define your and your organizations' action plan for next steps:**
  - **Create awareness and commitment to action**
  - **Develop a plan with milestones and metrics**
  - **Use, as appropriate, inside/outside subject matter experts to fill the gaps and facilitate organizational change and transformation**
  - **Institute continuous learning and education – Improve your skills, competencies and knowledge of the relevant standards, processes, tools, techniques, etc.**
  - **Institute continuous process improvement based on current and emerging best practices**

GOOD LUCK!

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10.0 Appendix

Appendix 1: Managing Accelerating Change and Transformation

Success at large scale transformational change demand more than plans and processes – It requires an intimate understanding of the human side, as well as the organization's culture, values, people and behaviors that must be changed to deliver the desired results.

Booz Allen and Hamilton

Nine Principles for Creating and Sustaining Change

- Address the human side of change systematically
- Change starts at the top and happens at multiple levels – top, middle and bottom through proactive change agents
- Confront reality and articulate a compelling need for change
- Provide a vision and roadmap to guide behavior and decision rights
- Create ownership and distributed leadership (change agents at multiple levels
- Frequent and honest communications on why, what, how and results
- Assess the cultural landscape early at all levels
- Prepare for the unexpected – Be flexible and listen with an open mind

Key Components of Managing Large Scale Change Successfully

- **Engage the Top and Lead the Change**
  - Create the "Value Proposition" & Market the Case for Change
  - Committed Leadership
  - Develop a Plan and Ensure Consequence Management
- **Cascade Down and Across the Organization & Break Down Barriers/Silos**
  - Create Cross-Functional and Global Teams (where appropriate)
  - Compete on "Speed"
  - Ensure a Performance Driven Approach
- **Mobilize the Organization and Create Ownership**
  - Role Out Change Initiative
  - Measure Results of Change (Pre-Change versus Post-Change Baselines
  - Embrace Continuous Learning, Knowledge and Best Practice Sharing
- **Attributes of Effective Change Teams and Agents**
  - Strong and focused Leader
  - Credibility and Authority (Charter) to Lead the Initiative
  - "Chutzpa", Persistent and Change Zealots
  - Ability to Demonstrate and Communicate "Early Wins" to build the momentum
  - Create a Sense of Urgency and Avoid Stagnation
  - Knock Obstacles Out of the Way, Diplomatically or Otherwise

Appendix 1: Managing Accelerating Change and Transformation

Critical Success Enablers for Managing Change, Accelerating Change and Cultural Transformation – are segmented into the following categories:

• **Change Acceleration Framework –** Overall pre-requisites for effecting accelerating change and transformation

- People/Organization Architecture and Management Philosophy

- Process Transformation

- Technology

"It is better to be 80% correct & make change happen than to be 100% correct after the opportunity has passed"

Norman Augustine

Former Chairman & CEO, Lockheed Martin Corp.

Framework for Managing Accelerating Change and Transformation

Used to Help Organization Transition from the Current Environment to a Future Environment

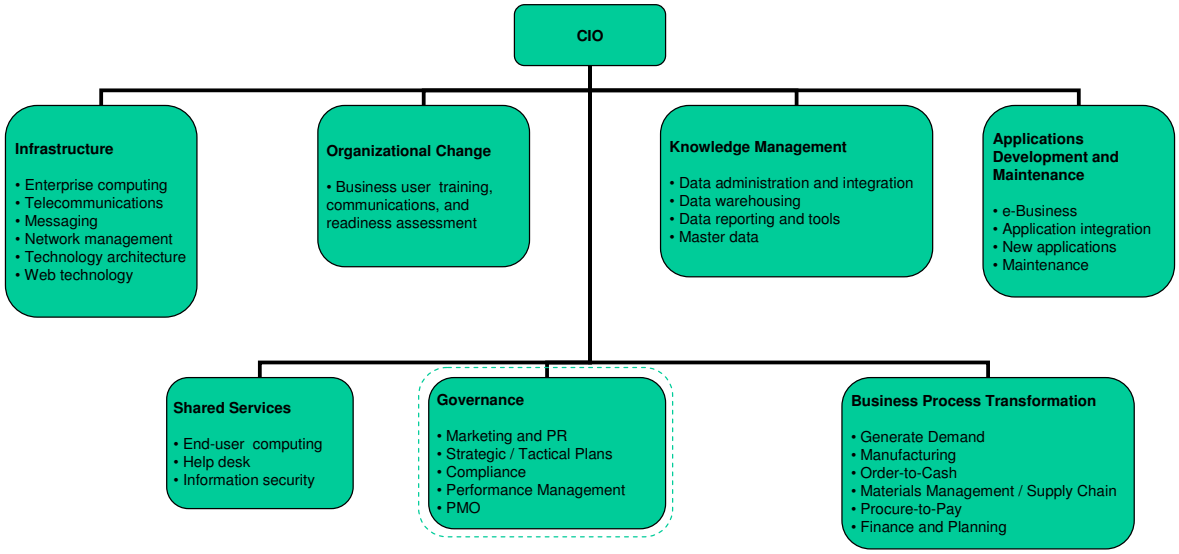
Leading Change:
– Is there a strong change leadership team (CLT) and champion? Knowledgeable in the model and tools?
– Is the CLT actively involved in leading and driving the change process and initiatives?
– Are CLT members monitoring all "essential elements" and "necessary conditions"?

----------A Framework for Managing Change ----------

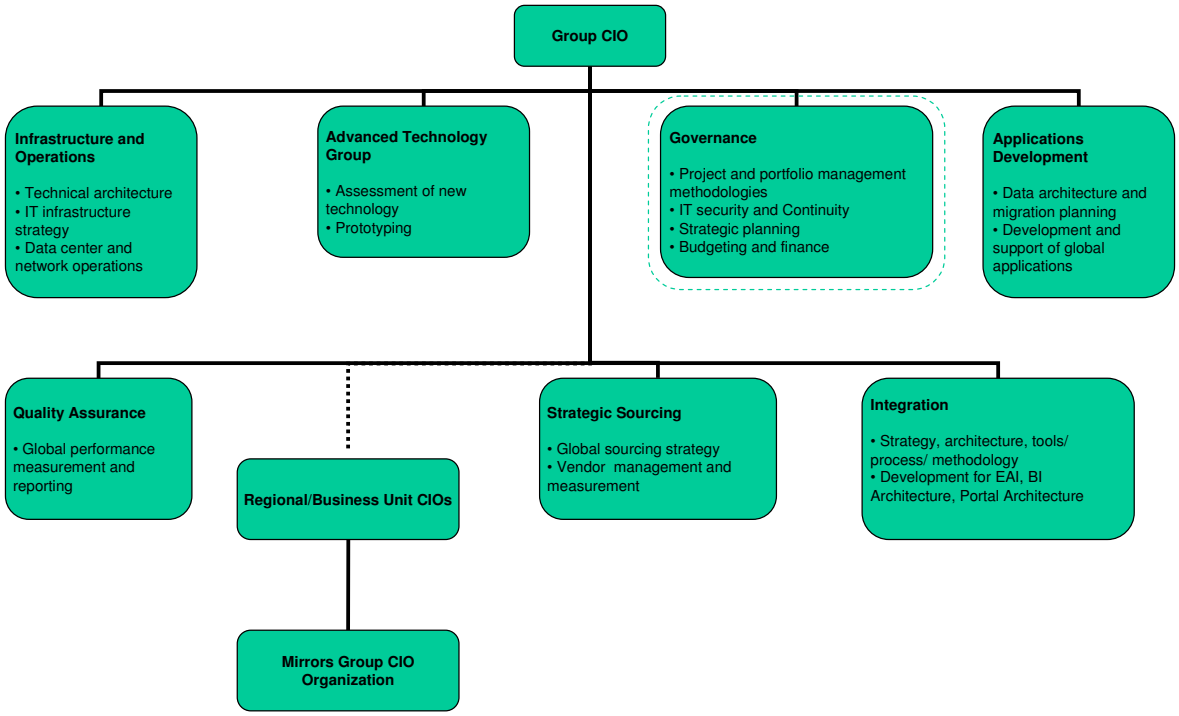
Creating Shared Need:	**Shaping Vision:**	**Making Commitment:**	**Making Change Endure:**	**Monitoring Progress & Learning:**
– Is the reason to change, whether driven by threat or opportunity, instilled within organization? – Is it widely shared through data, demonstration, demand or diagnosis? – Does the need for change exceed its resistance?	– Is the desired outcome of change clear, and legitimate? – Is the outcome expressed in simple terms? – Is it widely understood and shared?	– Is there a strong commitment from all key constituents to invest in the change, make it work, and demand and receive management attention?	– Once the change is started, can we implement it on a sustained basis? – Are the results transferred throughout the organization? – Are there rewards and recognition Linked to change progress? Other motivators?	– Do we know our real progress? – Have benchmarks and metrics been set to guarantee accountability? – Has organization feedback and learning been captured?

Changing Systems, Structures & Capabilities:
– Is change woven into the very fabric of the organization?
– Are management practices used to complement and reinforce change?
– How have we addressed issues of: staffing & development, measurements & rewards?
– Is there a communication strategy?
– Do we know how the organizational structure must be changed?

IT Organization Structure for a Large Food Company (Illustrative Example)



IT Organization Structure for a Global Manufacturing Company (Illustrative Example)



Leadership Competency Model (Illustrative Example)

The Leadership Competency Model represents a blend of models developed by select leading edge organizations such as Verizon, Motorola, Proctor and Gamble, GE and Others

Leadership	Market/ Customer Focus	Critical Thinking	Achieving Results & Execution	Functional Expertise*
■ Collaborate ■ Visionary ■ Change Agent ■ Interpersonal Relations & Skills ■ Communications ■ Mentoring ■ Diversity ■ Risk Taker ■ Integrity	■ Customer Focus/VOC ■ Business/ Industry Insight ■ Entrepreneurial/ Intrapreneurial Orientation ■ Environmental Trends & Implications ■ Relationship Building	■ Financial Acumen ■ Life Long Learning ■ Creativity & Innovation ■ Adaptability ■ Problem Solving ■ Decision Making/ Judgment ■ Analytical ■ Conceptual	■ Quality Focus ■ Leveraging Technology ■ Improve Processes ■ Change Management ■ Take Initiative ■ Decisiveness ■ Stress Management ■ Performance Management ■ Common Sense ■ Flawless Execution	■ Marketing ■ Operations ■ HR ■ IT/PM/BA/Tech. ■ R&D/Engineer. ■ Public Affairs ■ Cust. Service ■ Treasury ■ International ■ Sales ■ Finance/Account. ■ Product Dev./Mgt ■ Legal

Summary of Operating Characteristics Present in World Class Teams

Clear Purpose	**The vision, mission, goal or task of the team has been defined and is now accepted by everyone. There is an action plan.**
Informality	**The climate tends to be informal, comfortable, and relaxed. There are no obvious tensions or signs of boredom.**
Participation	**There is much discussion and everyone is encouraged to participate.**
Listening	**The members use effective listening techniques such as questioning, paraphrasing and summarizing to get ideas out.**
Civilized Disagreement	**There is disagreement, but the team is comfortable with this and shows no signs of avoiding, smoothing over, or suppressing conflict.**
Consensus and Fast Decisions	**For important decisions, the goal is substantial but not necessarily unanimous agreement through open discussion of everyone's ideas, avoidance of formal voting, or easy compromises. It is also important to avoid or minimize "groupthink" which often limits individual creativity and may sub-optimize the team's actions.**
Open communication	**Team members feel free to express their feelings on the tasks as well as on the group's operation. There are few hidden agendas. Communication takes place outside of meetings.**
Clear Roles and Work Assignments	**There are clear expectations about roles played by each team member. When action is taken, clear assignments are made, accepted and carried out. Work is fairly distributed among members.**
Shared Leadership	**While the team has a formal leader, leadership functions shift from time to time depending upon the circumstances, the needs of the group, and the skills of the members. The former leader models the appropriate behavior and helps establish positive norms.**
External Relations	**The team spends time developing key outside relationships, mobilizing resources, and building credibility with important players in other parts of the organization.**
Style and Cultural Diversity	**The team has a broad spectrum of team-player types representing different cultures including members who emphasize attention to task, goal setting, focus on process and questions about how the team is functioning.**
Self-Assessment	**Periodically, the team steps back to examine how well it is functioning, examines what may be interfering with its effectiveness and takes corrective actions.**
Use of Technology	**Organizations are creating "global centers of excellence" to take advantage of global brains. This has accelerated the use of technology to save time, costs and facilitate collaboration amongst multi-location team members.**

Appendix 1: Managing Change and Transformation

People/Organization Architecture & Philosophy

• Obtain **executive sponsorship** and champion(s) – Need "Leadership" at highest levels

• **Get the right people** involved at the right time (phases)
- Know the skills and competencies of your people
- Develop and maintain a current database
- Define roles and responsibilities
- Co-location

• **Create peer pressure** that forces behavior change based on:
- Value propositions
- Speed
- Acceptable attitude about taking prudent risks and making mistakes (learn from them)
- Balance risk with appropriate reward
- Define optimum individual performance objectives & measure progress:

Energy
Energize
Edge
Execution

Ethics
Excellence – "Be All That You Can Be"

Appendix 1: Managing Change and Transformation

People/Organization Architecture (cont'd)

• Set **bold cycle time** reduction objectives –
- Establish current state base line
- Establish future state baseline
- Define transitional approach
- Time sensitive performance metrics and vital signs

• Embrace **speed and excellence**
- Establish "speed" incentives and rewards (balance with quality, risk and customer involvement)
- Incentivize employees to challenge the norms **(think and do out-of-the box; dare to be different)**
- Recognize people and teams for a superior job
- Continuous reinforcement of a job well done
- Make decisions locally and in real time

•Create **"speed" teams**
- Fast teams have strong leaders (well trained)
- Keep team focused
- Knock obstacles out of the way or neutralize them
- Best-in-class talent
- Establish ultra-clear priorities, roles and responsibilities
- Reduce/eliminate job fragmentation **(do what you do best – do not sub-optimize)**
- Fast electronic communications (24 by 7) –Cell, Teleconferencing, Videoconferencing
- Make fast adjustments
- Leapfrog & compete on speed
- Act within the spirit of the process (not strictly by the process)
- Rotate "high potential team members" (at end of project) as change agents (to other initiatives) and incent them
- Leverage the same Project Manager across similar type projects

Appendix 1: Managing Change and Transformation

People/Organization Architecture (cont'd)

- Conduct **fast team meetings**
  - Do your homework
  - Don't mind your manners
  - Stand up meetings make meetings short (no coffee or doughnuts)
  - Focus fast and keep focused
  - Encourage fast follow up
  - Make fast work out of peripheral issues
  - Bump up, not down (for meeting attendees)
  - Stand up meeting speed things up
  - Turn off cell phones
  - No side conversation – listen when someone else is talking

- Create **flatter, smaller and nimbler organizations based on effective teams**
  - Increase span of control – virtual organization with access to **global brains**
  - Change fast
  - Multifunctional and team based
  - Work on **building effective teams** – Forming, Storming, Norming and Performing
  - Real-time communication amongst team members

Appendix 1: Managing Change and Transformation

People/Organization Architecture (cont'd)

- **70/30% Decision Process** – it is an attitude about how sure you have to be to make a decision that provides permission to speed things up by not working harder, but smarter:

  - Complete consensus not required
  - **Time box scope and deliverables**
  - Use your judgment and previous experience – **odds are you are right**
  - Set time constraints on decisions
  - Make decisions and then move on - no rehash
  - Mistakes are acceptable – **but fix them fast**
  - Frequent customer validations
  - Take informed risks – **no pain, no gain**
  - Encourage continuous improvement
  - Learn how much you need to engage others to be 70% certain of your decision
  - Learn how much information is required to be 70% certain of your decision
  - Champion the 70% solution
  - Less stress
  - Encourage all to support and commit – it's an attitude that affects behavior change

A good decision today is better than a perfect decision tomorrow

People/Organization Architecture (cont'd)

- Create and sustain a **continuous learning** environment:
  - Know skills sets of employees **(skills database)**
  - Establish minimum competencies for various positions
  - Know gaps
  - Encourage personal development, education and training programs and subsidize
  - Invest in continuous education and training (set minimum requirements per employee per year)
  - Design training and education offerings to fit "speed" criteria (e.g. Webcasts, Video Conferencing, 3 hour focused modules, etc.)
  - Encourage regular (senior to junior) and reverse (junior to senior) mentoring programs
  - Establish **Knowledge Management** process to capture and access **Lessons learned**

- **Best practice benchmarking:**
  - Form peer (external) group to share best practices
  - Continuously monitor, improve and adopt
  - Ensure that the organization develops as a learning system

Process Transformation

- Develop **scalable, flexible and tailored (**80/20 rule (preferable **Web based**) **IT Governance processes and architecture for its major components** (including Alignment, Planning, Project Management , IT Service Management, Outsourcing, Systems Development, Infrastructure Development, Product Development, Performance Management etc.), **Processes, Templates and Tools.**

- Define **Mandatory (Minimum) and Discretionary** Phases, Components, Templates, Procedures, etc.
  - Accommodate **multiple project. Product, systems and service types** (e.g. new, enhancements, operational software, infrastructure, product, etc.) & **complexity - size/value/reach/integration/funding/ location/risk, etc.**
  - Accommodate multiple development methodologies (e.g. Waterfall, Iterative, Rapid Application Development, Hybrid, etc.)
  - Accommodate **outsourcing/insourcing/hybrid models**
  - Accommodate **fast track and full risk mitigation** projects.

- Define Business Process Models (How the business should operate), streamline and automate.

Process (cont'd)

Establish and enforce a well defined/uniform **governance process** with simple clear metrics, reporting guidelines and escalation processes:

- Clear roles and responsibilities
- Issues management
- Change management
- Employ multiple communications techniques and frequencies (especially prior to due dates for deliverables, milestones, meetings, etc- 60 day, 30 day, 15 day, 7, day, 2 day, 1 day reminder notices)
- Use dashboards and graphs (color coded) to convey successes and show laggards
- Escalate sooner than later

Process (cont'd)

- Institute a **Portfolio Management process** –formalize the selection, prioritization and funding of initiatives based on business criteria
  - Reprioritize active projects on an on-going basis
  - Do not classify each project as a priority

- **Time Box Scope**
  - Smallest and clearest scope possible
  - Decompose large initiatives into programs and/or interrelated projects with time boxing
  - Chunk scope into time slots (no individual initiative exceeds 3 months, but interrelated projects can be longer as a group)

- **Time Box Deliverables**
  - Short term incremental deliverables (80 hour rule)
  - Frequent iterations with constituencies, customer(s), team, etc.
  - Acceptance criteria

- **Outsource** (non-core initiatives or tasks, domestically or internationally) with a limited number of qualified (and certified) vendors
  - Have a vendor selection and RFP process in place
  - Have a vendor management, escalation. and metrics process in place

- Create **knowledge management cafes and repositories (capture intellectual capital for reuse)**
  - Lessons learned, best of breed processes, training for junior and senior folks
  - Leverage process experience to create templates, etc. for reuse

Technology

- Encourage collaborative tools (Share documents, Central Repository for Projects, Groupware, etc.)
- Automate, automate, automate – Web and sub-webs , tools, templates, PM software, lessons learned repository, knowledge management,
- Easy to use, easy to locate
- Use expert systems and knowledge management to capture and re-use best practices and change poor practices
- Fast electronic communications (24 by 7)

Appendix 2

Sarbanes-Oxley Controls Template for a Manufacturing Company (Illustrative Example)			Completeness	Existence	Valuation	Rigts & Obligations	Presentation & Disclosure	Control Type		Frequency of Occurrence	Control Type 2	Aerospace Operational
		Control Activities	Purpose of Control Activities					F O C		Q,M,W,D	Preventive / Detective	
Cycle	VIII.	Information Technology										
Sub-Cycle	VIII.1	System Development Life Cycle										
Control Objective	VIII.1	Controls provide reasonable assurance that systems and applications are designed and modified to adhere to business requirements, are properly authorized, tested, and approved prior to migration to the production environment. (Implementation of financia										
Control Activities	VIII.1.1	A formal systems development methodology is in place to guide the organization through the systems development life cycle.						F				
	VIII.1.2	Business unit management and users are involved in the review and approval of all business system requirements prior to development. Authorization and written approval is required for business systems requirements. (I.e. a passport steering committee or						F				
	VIII.1.3	Formal and documented unit, integration, and user acceptance testing is required prior to implementation.						F				
	VIII.1.4	Individuals responsible for development or coding changes are separate from those who test and migrate the change into production. For smaller locations, mitigating controls are in place.				X		F				
	VIII.1.5	Management approval of the readiness of the business requirements and corresponding test results and data conversion (if applicable) is required prior to implementation.						F				
	VIII.1.6	Program change management tools (such as Visual Source Save or Excel logs) are utilized to track software changes and to segregate the development and production environments.						F				

Sarbanes-Oxley Controls Template for a Manufacturing Company (Illustrative Example)			Completeness	Existence	Valuation	Rigts & Obligations	Presentation & Disclosure	Control Type		Frequency of Occurrence	Control Type 2	Aerospace Operational
		Control Activities	Purpose of Control Activities					F O C		Q,M,W,D	Preventive / Detective	
Cycle	VIII.	Information Technology										
Sub-Cycle	VIII.2	Change Management										
Control Objective	VIII.2	Controls provide reasonable assurance that minor modifications are designed and modified to adhere to business requirements, are properly authorized, tested, and approved prior to migration to the production environment. (Report generation, patches, fun										
Control Activities	VIII.2.1	A change control process is in place to ensure production changes are documented and implemented only after proper approval. This process should require user/management involvement.						F				
	VIII.2.2	Formal and documented unit, integration, and user acceptance testing is required and must be approved by Mgt prior to implementation.						F				
	VIII.2.3	Individuals responsible for development or coding changes are separate from those who test and migrate the change into production. For smaller locations, mitigating controls are in place.				X		F				
	VIII.2.4	Program change management tools (such as Visual Source Save or Excel logs) are utilized to track software changes and to segregate the development and production environments.						F				

Sarbanes-Oxley Controls Template for a Manufacturing Company (Illustrative Example)			Completeness	Existence	Valuation	Rigts & Obligations	Presentation & Disclosure	Control Type		Frequency of Occurrence	Control Type 2	Aerospace Operational
		Control Activities	Purpose of Control Activities					F O C		Q,M,W,D	Preventive / Detective	
Cycle	VIII.	Information Technology										
Sub-Cycle	VIII.3	Data and Systems Backup and Recovery										
Control Objective	VIII.3	Controls provide reasonable assurance that programs and data files are regularly backed up and data is available for restoration in the event of processing errors and/or unexpected interruptions.	X									
Control Activities	VIII.3.1	Backups of critical programs and data files are scheduled, managed, and backup media tracked by a tape management system. Daily backup status and backup reports are reviewed to ensure successful completion.						F				
	VIII.3.2	Backup media are rotated to an approved offsite storage location at predetermined rotation schedules. Formal policies and procedures exist for logging when Media are sent to and received back from the offsite location.						F				
	VIII.3.3	Access to backup media are restricted to authorized personnel.				X		F				
	VIII.3.4	Testing of data restoration procedures is performed on a periodic basis.	X					F				

Sarbanes-Oxley Controls Template for a Manufacturing Company (Illustrative Example)			Completeness	Existence	Valuation	Rigts & Obligations	Presentation & Disclosure	Control Type		Frequency of Occurrence	Control Type 2	Aerospace Operational
		Control Activities	Purpose of Control Activities					F O C		Q,M,W,D	Preventive / Detective	
Cycle	VIII.	Information Technology										
Sub-Cycle	VIII.4	Data and Systems Backup and Recovery										
Control Objective	VIII.4	Controls provide reasonable assurance that data centers are adequately protected from environmental hazards.										
Control Activities	VIII.4.1	Environmental factors such as temperature, humidity, and water leaks are monitored by automated monitoring tools which alert the appropriate individuals of problems.	x					o				
	VIII.4.2	Fire suppression sensors and systems are installed within the data centers.	x					o				
	VIII.4.3	Uninterruptible Power Supply (UPS) or emergency generators are in place and automatically start in the event of a power outage.	x					o				
	VIII.4.4	Preventive maintenance of environmental control systems is performed.						o				

Sarbanes-Oxley Controls Template for a Manufacturing Company (Illustrative Example)			Completeness	Existence	Valuation	Rigts & Obligations	Presentation & Disclosure	Control Type		Frequency of Occurrence	Control Type 2	Aerospace Operational
		Control Activities	Purpose of Control Activities					F O C		Q,M,W,D	Preventive / Detective	
Cycle	VIII.	Information Technology										
Sub-Cycle	VIII.5	Data and Systems Backup and Recovery										
Control Objective	VIII.5	Controls provide reasonable assurance that formal plans exists to recover critical IT services and applications in accordance with established business requirements.										
Control Activities	VIII.5.1	A disaster recovery planning process is in place to identify potential disaster risks and document formal recovery procedures and prioritization.	x					o				
	VIII.5.2	Management periodically reviews and formally approves the plan.						o				
	VIII.5.3	The plan identifies and prioritizes critical applications to be recovered, and timeframes for recovery have been documented.				x		o				
	VIII.5.4	The plan includes the equipment requirements and configuration standards needed to support the recovery of critical applications and data.						o				
	VIII.5.5	The plan includes formal identification of key personnel and specific functions to be performed by management, IT personnel and external vendors.				x		o				
	VIII.5.6	The disaster recovery plan is tested periodically for critical systems and that external vendors were included in the plan.	x			x		o				

Sarbanes-Oxley Controls Template for a Manufacturing Company (Illustrative Example)			Completeness	Existence	Valuation	Rigts & Obligations	Presentation & Disclosure	Control Type		Frequency of Occurrence	Control Type 2	Aerospace Operational
		Control Activities	Purpose of Control Activities					T O C		Q,M,W,D	Preventive / Detective	
Cycle	VIII.	Information Technology										
Sub-Cycle	VIII.6	Logical Access										
Control Objective	VIII.6	Controls provide reasonable assurance that logical access to production applications and data files is restricted to appropriately authorized personnel.										
Control Activities	VIII.6.1	User, developer and Security Administrator access to business systems is determined based on job roles, responsibilities and written management approval for adding and/or modifying user access.	X	X	X	X		F				
	VIII.6.2	Users are required to have a unique user id and password in order to access production business systems. Passwords are periodically forced to expire, follow strict password composition rules, and are encrypted to prevent viewing.	X	X	X	X		F				
	VIII.6.3	Users are allowed a limited number of invalid access attempts before being locked out. Security violations and remote access attempts are logged, maintained, periodically reviewed and reported to management.	X	X	X	X		F				
	VIII.6.4	HR distributes termination and transfer lists to IT and security administration to facilitate the access review process and if necessary, removal of terminated user accounts.						F				
	VIII.6.5	Networks have installed UTC approved and managed barriers (i.e. firewalls) to prevent unauthorized outside penetration.						F				
	VIII.6.6	Wide Area Networks are monitored and potential security issues are identified and investigated to resolution.						F				
	VIII.6.7	Adequate safeguards exist to ensure that data that is deemed to be critical or sensitive and that is transmitted externally is protected from unauthorized access by encryption or dedicated connections.	X					F				
	VIII.6.8	Procedures for remote operations are in place to ensure that access is properly secured and managed.						F				
	VIII.6.9	A process exists to ensure that all critical software is appropriately licensed.						O				

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Sarbanes-Oxley Controls Template for a Manufacturing Company (Illustrative Example)			Completeness	Existence	Valuation	Rigts & Obligations	Presentation & Disclosure	Control Type		Frequency of Occurrence	Control Type 2	Aerospace Operational
		Control Activities	Purpose of Control Activities					T O C		Q,M,W,D	Preventive / Detective	
Cycle	VIII.	Information Technology										
Sub-Cycle	VIII.7	Physical Access										
Control Objective	VIII.7	Controls provide reasonable assurance that physical access to computer equipment and storage media is limited to appropriately authorized personnel.						F				
Control Activities	VIII.7.1	Access to computer operations and data center facilities is physically secured and logs (electronic or paper based) of user access exist.	X	X	X	X		F				
	VIII.7.2	Access is granted only upon receipt of a formal request from an authorized approver. A list of authorized approvers is maintained.	X	X	X	X		F				
	VIII.7.3	Server terminals automatically lock or logoff a user after a period of inactivity.	X	X	X	X		F				
	VIII.7.4	Periodic reviews of all individuals with access to data center facilities are performed.	X	X	X	X		O				
	VIII.7.5	Facilities are alarmed and monitored.						O				

Sarbanes-Oxley Controls Template for a Manufacturing Company (Illustrative Example)			Completeness	Existence	Valuation	Rigts & Obligations	Presentation & Disclosure	Control Type		Frequency of Occurrence	Control Type 2	Aerospace Operational
		Control Activities	Purpose of Control Activities					T O C		Q,M,W,D	Preventive / Detective	
Cycle	VIII.	Information Technology										
Sub-Cycle	VIII.8	Production/Batch Processing										
Control Objective	VIII.8	Controls provide reasonable assurance that production processing is appropriately scheduled, and deviations from scheduled processing are identified and resolved timely.						F				
Control Activities	VIII.8.1	System capacity and performance is monitored to ensure system availability and application response times are consistent with the business requirements.	X					O				
	VIII.8.2	A process exists to inform the appropriate individuals when a processing problem occurred and that the functional owner provides written notice that the output of the rescheduled jobs are correct.	X		X			F				
	VIII.8.3	Changes to production processing/job schedules are required to go through a change management process and should be authorized by the functional owner.	X		X			F				
	VIII.8.4	Formal policies and emergency access controls are utilized when migrating non scheduled changes to production programs/data.						F				

Sarbanes-Oxley Controls Template for a Manufacturing Company (Illustrative Example)			Completeness	Existence	Valuation	Rigts & Obligations	Presentation & Disclosure	Control Type		Frequency of Occurrence	Control Type 2	Aerospace Operational
		Control Activities	Purpose of Control Activities					T O C		Q,M,W,D	Preventive / Detective	
Cycle	VIII.	Information Technology										
Sub-Cycle	VIII.9	Organization and management										
Control Objective	VIII.9	Appropriate IT governance exists to ensure management and oversight of IT initiatives are aligned to the business needs.										
Control Activities	VIII.9.1	A steering committee, comprised of IT and business area management, is in place to prioritize and monitor IT planning and significant projects.						O				
	VIII.9.2	An IT strategic planning process exist to support the business units medium and long-term goals.						O				
	VIII.9.3	Appropriate expense budgeting and monitoring for IT expenditures is reviewed by management.						O				

Sarbanes-Oxley Controls Template for a Manufacturing Company (Illustrative Example)		Completeness	Existence	Valuation	Rigts & Obligations	Presentation & Disclosure	Control Type		Frequency of Occurrence	Control Type 2	Aerospace Operational
	Control Activities	Purpose of Control Activities					F O C		Q,M,W,D	Preventive / Detective	
VIII.	Information Technology										
VIII.10	Organization and management										
VIII.10	Controls provide reasonable assurance that outsourced resources maintain adequate levels of IT controls and service levels. (UTC will Cover CSC)										
VIII.10.1	Formal contracts with each third-party/outsourcing service provider exists and are in written accordance with business unit or corporate standards and guidelines.						O				
VIII.10.2	Contracts clearly define the responsibilities and obligations of both the Business Unit and the third party service provider.						O				
VIII.10.3	A business area manager is responsible for managing the service provider and monitoring the performance of the third party against their contractual obligations.						O				
VIII.10.4	IT Management obtains and reviews periodic reporting of key performance indicators or service level agreements (SLA's) and formally addresses service issues and monitors through to resolution.						O				

Appendix 3 - Select References to Business/IT Strategy and Governance Models/Frameworks

(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; Generic Framework for Information Management	IT Governance Institute, 2003; Weil and Ross, 2004; University of Holland,	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, 2004	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, 2002	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), 1998 (Now known as OGC – Office of Government Commerce	A PM methodology that focuses on the business case
	IT investment management	General Accounting Office (U.S. Federal Government)	Helps to evaluate and assess and select and prioritize IT investments
Systems/Software Development	CMMI (Capabilities Maturity Model – Integrated)	Software Engineering Institute (SEI) – Carnegie Mellon, 2002 and 2005	Used to analyze 5 stages of maturity for achieving process improvements in systems & software development

Appendix 3 - Select References to 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
Systems/Software Development	SSADM (Structured Systems & Design Method)	CCTA (Central Computer & Telecomm. Agency (UK Government - OGC)	Structured methodology to develop systems
	DSDM (Dynamic Systems Development Method	The DSDM Consortium	Used as a RAD (Rapid Application Development) Methodology
Quality & Security	Six Sigma; Lean; Baldrige Quality Award	Motorola with GE popularizing the concept; Breyfogle, et. al.	Framework used to continuously improve processes and reduce errors or defects (can be applied to any process)
	ISO 9001 (Quality)	International Standards Organization	Focus on quality management policies and practices of an enterprise
	ISO 17799 and 27001	International Standards Organization	IT security frameworks and models

Appendix 3 - Select References to 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)

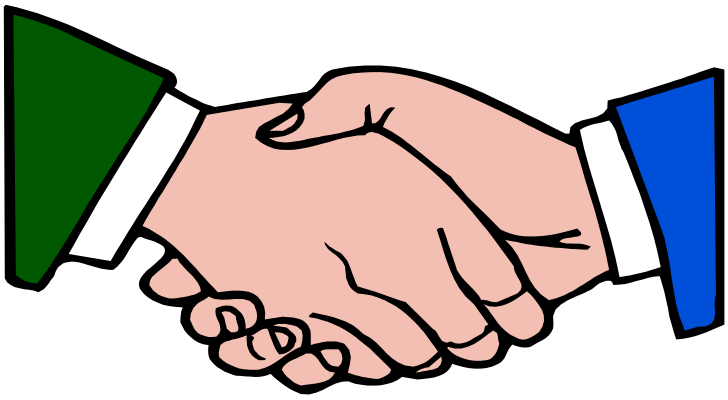
Model Focus	Model Name	Author	Use
IT Operations & Infrastructure	ITIL (IT Infrastructure Library) v2 and v3;	Originated by CCTA (Central Computer & Telecomm. Agency, now OGC (UK Government); Currently ITIL is licensed to and maintained by APMG, which also is responsible for accreditation.	A framework of 10 processes and functions focused on improving IT service management.
	ISO/ IEC 20000 – IT Service Management	Currently owned and maintained by ITSMF	
Human Resources	P-CMM (People - Capability Maturity Model)	Software Engineering Institute (SEI) – Carnegie Mellon University	Model for advancing people and competencies
Performance Measurement	Balanced Scorecard; Critical Success Factors	Kaplan & Norton; Cattuci; Rockhart	Method for strategy focused measures of success

Appendix 3 – Select References to 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 – All public US companies	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, FDIC, HIPPA, SEC Others	Various government agencies that apply to either all or select industries	
Outsourcing and Vendor Management	Outsourcing Frameworks – OPBOK; eSCM (eSourcing Cabability Models for service providers and client organizations)	Palvia; Casale; Brown, et. al. eSCM, IAOP	Various frameworks and guidelines on how to outsource IT and manage vendors.
Voice of the Customer VOC)	Kano	Kano	Frameworks to capture VOC and customer requirements

Thank You!



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