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”

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Contents

Preface
Objectives of Workshop
Benefits of Workshop
How to Get the Most Out of the Workshop

1.0 Executive Summary
Today’s Business Challenges
Scope and Definition of Enterprise Governance
Enterprise versus Business versus IT Governance
The Board’s Role in IT Governance
Major Challenges and Pressures for IT
Board and Executive Questions for IT
Definition and Purpose of IT Governance
Who Benefits from Effective and Sustainable IT Governance?
Key Components of Managing Large Scale Enterprise Change Successfully
Value Propositions from Best-in-Class Companies on Governance
Successful IT Governance is Built on Three Critical Pillars – Leadership & Organization, Scalable Processes and Enabling Technology
Results of Ineffective IT Governance Can Be Devastating
Linking the CEO Role to Achieving Business Growth, Improving Profitability and Creating an Effective Governance Environment
How Much Governance is Required? When is Enough, Enough?

Key IT Governance Strategy and Resource Decisions
Integrated IT Governance Framework and Roadmap
Key Roles and Responsibilities
Key Work Breakdown Areas to Manage the IT Governance Initiative
IT Governance – Decision Rights
Executive Steering Committee Charter - Illustrative
IT/Business Steering and Governance Boards and Roles
Business/IT Demand Management – Classifications
Strategic IT Investment Alternatives
Business/IT Governance - Balanced Score Card

Essential Competencies for Successful IT Governance
Sarbanes-Oxley Act, Compliance and Implications – Increasing Important and Complex
Select Technology and Process Solution Enablers to Improve IT Governance
Avoiding Implementation Pitfalls
Key Leadership Principles for Creating & Sustaining a Successful IT Governance Culture & Environment
Steps in Making IT Governance Real
A First Step – Assess Current Maturity of IT Governance
IT Governance – Maturity Model Levels
IT Governance - Current and Future State Transformation Flow
Future State of IT Governance – A Blueprint Concept

Case Study - Consumer Products Company

Summary
2.0 Integrated IT Governance Framework and Roadmap and Related Current and Emerging Industry Best Practices

Objectives
Benefits of Using an Integrated IT Governance Framework Leveraging Best Practices Models
Integrated IT Governance Framework and Roadmap
Select Examples of Business/IT Strategy and Governance Reference Models, Frameworks and Standards
(e.g. COBIT 4.0, ISO 17799, 20000, 27001 & 9001, PMBOK, OPM3, QFD, CMMI, ITIL, Prince2, PMM, Kano, ITIM, 6 Sigma, Lean, Baldridge, ITsqc, IAOP, ETA and others)

Summary

3.0 Business/IT Alignment and Strategic Planning Excellence

Objectives
The Board’s Role in Driving Business/IT Alignment
Views of IT Value Differ
Principles for Aligning IT to the Business More Effectively
IT/Business Alignment Maturity Model
IT Investment – Key Value Proposition Questions
High Level Flow - Business/IT Planning, Investment, Execution and Evaluation
Business and IT Plan Integration Flow
Business Strategy and Plan Development Framework
IT Strategic Planning Cycle and Outlines
IT Strategy and Plan Development Framework
Key Practices for Effective IT/Business Alignment
IT/Business Alignment Triangle and Flow
Company "X" Strategic Planning Process Stages and Timetable + Plan Templates
The Five Stages of IT Investment Management Maturity
Strategic IT Investment Portfolio Alternatives
IT Engagement (VOC Relationship) Model and Roles
Case Study – Financial Services organization

Summary

4.0 Program/Project Management (PM) Excellence

Objectives
Value Propositions of PM from Leading Organizations
PM is Complex & Requires Multiple Competencies
Major Causes of Program/Project Failures
The Cost of Failure
Principles for Achieving Excellence in Program/Project Management
Essential Skills for PM
Key PM Definitions
PM Maturity (PMMM) Model
High Level Flow – From IT/Business Alignment, Portfolio Management, PM/SDLC to Steady State Operations

Summary

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

Objectives
Principles for Achieving IT Service Management and Delivery Excellence
Top Concerns of CIOs
Benefits of IT Service Management and Delivery
What is ITIL and Why is it Different?
ITIL Certifications – v2
ISO/IEC 20000 – IT Service Management
The IT Service Management Lifecycle (ITIL –v3)
ITIL v3 Service Lifecycle, Related Processes and Activities Table
ITIL v3 – Qualifications and Certifications
ITIL Value Proposition – Select Leading Company Examples
Advantages of ITIL to Customers, Constituents and the IT Organizations
Potential Issues with ITIL
ITIL Frameworks
Summary of ITIL Service Management Processes & Functions – v2
Service Support Processes - Service Desk; Incident Management; Problem Management; Configuration Management; Change Management; Release management
Service Delivery Processes: Security Management; Service Level Management; Capacity Management; Availability Management;
IT Service Continuity (ITSCM) Management; IT Financial Management
Summary of New or Modified ITIL Service Management Processes and Functions – v3
5.0 IT Service Management (ITSM) Excellence (Continued)
   Steps in Making ITIL Real
   ITIL Process Area Maturity Level Ranking Matrix
   Select ITSM and ITIL Metrics
   Most ITIL Initiatives Start with Service Desk and Incident Management
   Enabling Technology Attributes for ITIL
   Case Study – Global Manufacturing Company
   Summary

6.0 Strategic Sourcing (Outsourcing) and Vendor Management Excellence
   Objectives
   The Information Technology Balancing Dilemma
   The Outsourcing Decision-Making Scorecard
   Outsourcing Motivations - Build versus Buy Criteria
   Major Outsourcing Trends and Challenges
   Outsourcing Vendor Views
   Customer Wish List
   Customer Issues and Challenges
   Outsourcing Can Be Complicated
   Differences Between Domestic and Off Shore Deals
   Empowering Executives to Outsource
   Vendor Selection Process Flow
   Key Vendor Evaluation Criteria
   Vendor Governance Process and Roles
   Key Contract Negotiation Pointers
   Do’s and Don’ts of Outsourcing
   Proctor and Gamble In-sourcing and Outsourcing Mix
   Summary Steps in Vendor/Outsourcing Selection, Negotiations and Management
   Case Study
   Summary

7.0 Performance Management, Management Controls, Risk Management & Enabling Technologies
   Objectives
   Principles for Achieving Performance Management Excellence
   What Key Performance Indicators Should be Tracked?
   Critical Success Factors (CSFs), Key Performance Indicators (KPIs) and Historic/Predictive Attributes
   Balanced Scorecard and Key Performance indicators
   Governance Calendar

7.0 Performance Management, Management Controls, Risk Management &Enabling Technologies (cont.)
   Select Examples of KPIs in Support of IT Governance Components
   Investment Oversight Board
   COBIT and Key Management Controls
   Risk Assessment, Management & Mitigation
   Enabling Technologies to Improve IT Governance
   Case Study – Leading Software Company
   Summary

8.0 Lessons Learned, Critical Success Factors & Next Steps
   Migration Plan for Making IT Governance Real
   Lessons Learned
   Critical Success Factors
   Personal Action Plan & Next Steps

9.0 Select References

10.0 Appendix
   1. Framework for Managing Accelerated Change and Transformation
   2. Sarbanes-Oxley Template for a Manufacturing Company
   3. Select References to Business/IT Strategy and Governance Models/ Frameworks
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.

All rights reserved. The reproductions or utilization of this workbook, in whole or in part, in any form by an electronic, mechanical or other means, such as xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Gad J. Selig, Managing Partner of GPS Group, Inc. We welcome suggestions to improve and update the material.

This is a “How To Course” that is pragmatic and actionable
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
Meet the Instructor

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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

Reduced Cycle Time and Increase Speed

Retain and Attract Key Human Resources

Globalization of Markets & Supply Chain Economics

Improve Governance and Compliance

Growing Trade Partnerships (Competition & Cooperation)

Reduce Time-to-Market

Continuous Innovation

Privacy, Security & Ethics

Competitive Differentiation & Value Proposition

Business Issues

Sustainability & Growth

More Demanding/Sophisticated Customers

Rapidly Changing Technology

Cut costs & grow profits

Process enabled best practices

Protect Intellectual Property

Organizational Empowerment
Executive Summary

“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 versus Business versus IT Governance

<table>
<thead>
<tr>
<th>Enterprise Governance</th>
<th>Business Governance</th>
<th>IT Governance</th>
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</thead>
<tbody>
<tr>
<td>Separation of Ownership &amp; Control</td>
<td>Direction &amp; Control of the Business</td>
<td>Direction and Control of IT</td>
</tr>
<tr>
<td>• Roles of Board and Executives</td>
<td>• Business Strategy, Plans &amp; Objectives</td>
<td>• IT Strategy, Plans &amp; Objectives</td>
</tr>
<tr>
<td>• Regulatory Compliance</td>
<td>• Business Processes &amp; Activities</td>
<td>• Alignment with Business Plans and Objectives</td>
</tr>
<tr>
<td>• Shareholder Rights</td>
<td>• Innovation and Research</td>
<td>• IT Assets and Resources</td>
</tr>
<tr>
<td>• Business Operations &amp; Control</td>
<td>• Intellectual Capital</td>
<td>• Demand Management</td>
</tr>
<tr>
<td>• Financial Accounting &amp; Reporting</td>
<td>• Human Resource Management</td>
<td>• Value Delivery and Execution Management (PM and ITSMD)</td>
</tr>
<tr>
<td>• Risk Management</td>
<td>• Performance Metrics and Controls</td>
<td>• Risk, Change &amp; Performance Management</td>
</tr>
<tr>
<td>• Asset Management</td>
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“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 organization’s strategies and objectives.”


Major Challenges for IT

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

- **Total Cost of Ownership & IT Value Proposition**: • ROI based decisions for new investments based on IT enabled business changes, reducing costs, competitive differentiation and keeping the lights on; Do more with less; Re-invest savings
- **SOX/ Other Compliance**: • Sustainable Compliance Model
- **Architecture & Applications**: • Implement scaleable, secure, open architecture & standardized solutions
- **Security**: • Impenetrable, scaleable and cost-effective security policies, processes & controls
- **Asset Optimization**: • Optimal infrastructure and other asset utilization: Physical Assets, Human Capital & Strategic Sourcing
- **On Demand Management & IT Investment**: • Manage on demand requests in a consistent, manner
- **Business/Competitive Intelligence**: • Data Strategy: Transform raw data to knowledge & intelligence
**Executive Summary**

**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*

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**Executive Summary**

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

**Business – The Bottom Line:**
- Cut costs
- Grow profits
- Improve governance
- Grow business

**Delivered by:**
- Process enabled best practices (PM, CMMI, ITIL, COBIT, SDLC)
- Standardization
- Certification

**Impacts on IT:**
- Higher customer demands & expectations
- Staff/Budget reductions
- Outsourcing
- Formal Investment Process

**IT: Do More with Less:**
- Maximize business value proposition
- Increase IT effectiveness and service levels
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, with 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 and Purpose of Governance

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.
Executive Summary

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


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. 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

Executive Summary

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
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.

### 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.

<table>
<thead>
<tr>
<th>Areas of Work</th>
<th>Description/Components</th>
<th>Deliverables/References</th>
</tr>
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</table>
| 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                                 | Plan Document                                                                          |
| • Business Performance Management (Key Metrics)                              | Financial                                                                             |
| • Executive and Other Steering & Review Councils, Organization Structure      | Balanced Scorecard Metrics                                                             |
| IT Plan, Objectives, Portfolio Investment and Approvals (Demand Management & Alignment) | IT Strategic/Tactical Plan/Metrics                                                     |
| • IT Plan is aligned with the Business Plan – IT Capital/Expense Budget         | Portfolio Mgt. Model (Investment Criteria, TAM)                                        |
| • IT portfolio investment, rationalization, selection, prioritization, funding and approval (Portfolio Management Model for New, Change Programs and Projects and/or Operational and Infrastructure Functions) | Engagement Model – Risks                                                                |
| • Fund major                                                                  | Business Risks & Authorization                                                        |
| • IT Performance Management (Define Metrics and Measurement Criteria)          | McFarlan, Cash, Luhman, Popper, Selig                                                 |
| Performance Management, Controls, Risk, Compliance and Vendor Management (Execution Management) | Ensure Implications of PMMM, PMBOK, CMIA, ITIL, SO2C, Cobi, Security (ISO 17799), Prin02, JSCEM Frameworks |
| • Program, Project and Operating Plans (Capital Plans, Project Plans and Budgets) | • Balanced Scorecard & KPIs                                                             |
| • Policies, Standards, Guidelines & Processes (e.g. Management Control, Enterprise Architecture, Security, PMO, ITIL, etc.) | • Performance Management                                                               |
| • Processes (PMO, Help Desk, Security, Administration SOPs, Workflows, Change, Risk, etc.) | • RFI RFP RFP & Contract Management, ISO, (Tox)                                       |
| • Financial, program, project, application, maintenance and operational accountability | • Sarbanes-Oxley ++ Compliance                                                        |
| • Manage and measure plans, budgets programs, projects, operations & risks     | • Management Compliance                                                                |
| • Define and track key performance indicators (KPI)                            | • Management Control (PCMM; OMB 300; ISO; ITIM)                                         |
| • Compare plans to actuals and take appropriate corrective actions             | • Current and Emerging Industry and Government Best Practices Standards & Guidelines |
| • Outsourcing and Vendor Selection, Tracking, Measurement                      | • Organizational, Project & Operational Maturity Models and Standards                  |
| • Business and IT Continuity, Security, Contingency and Disaster Recovery     | • Managing Change and Transformation (e.g. culture, interoperability)                   |
| People Development, Continuous Process Improvement & Learning                | • Training and Certification (e.g. Individual and Organization)                        |
| • Human capital development                                                    | • Adopt Current and Emerging Industry and Government. Best Practices Standards & Guidelines |
| • Organizational, Project & Operational Maturity Models and Standards         | • ISO 27001, ISO 31000, ISO 17799, Private, JSCEM Frameworks                          |
| • Managing Change and Transformation (e.g. culture, interoperability)         | • Business Rules & Authorization                                                       |
| • Training and Certification (e.g. Individual and Organization)               | • Performance Management                                                              |
| • Budget/Annual Plan and Budget                                                | • Balanced Scorecard & KPIs                                                             |
| • Portfolio Investment Management                                              | • Program, Project and Operating Plans (Capital Plans, Project Plans and Budgets)     |
| • Develop Roadmaps                                                            | • Policies, Standards, Guidelines & Processes (e.g. Management Control, Enterprise Architecture, Security, PMO, ITIL, etc.) |
| • Develop Strategic & Annual Plan and Budget                                   | • Processes (PMO, Help Desk, Security, Administrative SOPs, Workflows, Change, Risk, etc.) |
| • Manage Programs/ Projects                                                    | • Financial, program, project, application, maintenance and operational accountability |
| • Manage Demand (Service Requests, Service Mgt. & Delivery)                   | • Manage and measure plans, budgets programs, projects, operations & risks             |
| •Manage Execution                                                             | • Define and track key performance indicators (KPI)                                    |
| • Manage Performance                                                          | • Compare plans to actuals and take appropriate corrective actions                    |
| • Develop and Measure Key Performance Indicators (KPI’s)                      | • Outsourcing and Vendor Selection, Tracking, Measurement                             |
| • Discretionary                                                              | • Business and IT Continuity, Security, Contingency and Disaster Recovery             |
| • Mandatory                                                                  | • Ensure that program/project budgets are established and quality business cases are developed and tracked for each program/project; |
| • Keep Lights on                                                              | • Define key performance indicators (KPIs) for each function, establish targets and monitor performance using balanced scorecards |
| Manage Value Creation                                                         | • Launch programs/projects as specified in roadmaps, and ensure they are completed on time and on budget by managing demand from business users |
| • Manage Business Initiatives and Operations                                  | • Ensure that IT Service Management & Delivery is documented and KPIs (e.g. SLAs, other) are monitored to assure appropriate service levels for business |

### 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

#### IT Governance – Decision Rights (Illustrative Example)

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

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

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

*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
Select Balanced Score Card Metrics for Business and IT Governance  

**Executive Summary**

**Selected Balanced Score Card Metrics for Business and IT Governance**

**Balanced Score Card – Key Performance Measures - Business**

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

**Balanced Score Card – Key Performance Indicators - Information Technology**

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

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

* Modified from Kaplan and Norton, 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**

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.

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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

**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
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 databases, 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.

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**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

- **Implement ITIL**
- **Optimize Performance; Minimize Change & Risk**
- **Optimize Asset Portfolio & Utilization**
- **Track and optimize investments & resources**

---
• 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

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

<table>
<thead>
<tr>
<th>Hard Skills</th>
<th>IT Governance Policy, Processes</th>
<th>Technologies (40%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policies, Plans,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business/IT Alignment,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standards, Metrics,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfolio Investment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management, Project Management,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk Management, Status Reports,</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Leadership/People/Soft Skills</th>
<th>THE IT GOVERNANCE ICEBERG</th>
</tr>
</thead>
<tbody>
<tr>
<td>(60%)</td>
<td></td>
</tr>
</tbody>
</table>

Marketing, Cultural Transformation, Effective Communications, Trust, Integrity, Honesty, Leadership, Values, Team Building, Flexibility, Decision making, Perspective, Sound Business Judgment, Negotiations, Customer Relations, Motivation, Incentives, Managing Change, Managing Expectations, Common Sense, etc.
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)

Executive Summary

• Develop a “future state” IT governance blueprint (where you want to be) & keep it in focus.

• Decompose the IT Governance components into well defined work packages & assign owner and champion to each process component.

• 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

*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.

<table>
<thead>
<tr>
<th>Maturity</th>
<th>Attributes</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 5</td>
<td>• Optimized process • Metrics driven process improvement</td>
<td></td>
</tr>
<tr>
<td>Level 4</td>
<td>• Process managed and used by all</td>
<td></td>
</tr>
<tr>
<td>Level 3</td>
<td>• Enterprise wide process and standards</td>
<td></td>
</tr>
<tr>
<td>Level 2</td>
<td>• Basic Process • Basic Knowledge</td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td>• No established practices or processes</td>
<td></td>
</tr>
</tbody>
</table>

Major IT Governance Components

- Business Plan
- IT Plan
- Portfolio Investment Management
- Risk Management
- ITIL
- Service Level Management
- Critical Success Factors
- Key Performance Indicators
- MBOs and initiatives led to CSFs
- Controls and Audit (COBIT)
- Continuous Process Improvement
- Knowledge Management
- Education, Training and Learning
- Demand Management
- 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.

Where do we want to be?

Vision and business objectives

Assessments

Process Change

Where are we now?

How do we get where we want to be?

How do we know we have arrived?

Metrics

- Imperatives (must do)
- Strategies & Actions
- SWOT Analysis (Strengths, Weaknesses, Opportunities & Threats)
- Core Competencies
- Adopt best practices & industry models
- Executive Sponsorship
- Project Management
- Deliverables
- Technology: enable/replace
- Balanced Scorecard

(Define Future State of IT Governance and Components including Assumptions - This is an iterative process)

(Assess Current State of IT Governance using a leading Best Practice Framework like CMM or equivalent)

(Develop & Implement Strategies and Actions For Transformation from Current to Future State)

(Performance Management - Monitor, measure, adjust progress & take actions)
Executive Summary

SBU Requirements

Functional/Corporate Needs

Strategic Planning (Business/IT Alignment Driven)

- Each core business process area submits its strategic roadmap together with business justification for review and approval, and finalizes them based on decisions made by the Business/IT Exec. Steering Council.

Business/IT Exec. Steering Council

- Business/IT Exec. Steering Council sets top-down IT spending targets and allocation across business portfolios, reviews all strategic roadmaps and investment plans, prioritizes IT opportunities across all areas, defines key programs, approves final roadmaps and conducts periodic program/operating reviews.

Application Development (Metric Driven)/Programs/Projects

- IT establishes a Program Management Office (PMO) to track the status of each active project, help resolve issues and escalate critical issues to a PMO Steering Committee via a dashboard, and authorize change management activities.

Program Management Office (PMO)

- Each Project Team executes its project by following well defined, repeatable methodologies/processes, and technical architecture standards.

- PMO tracks the status of each active project, helps resolve issues and escalating critical issues to a PMO Steering Committee via a dashboard, and authorizes change management activities.

Service Support (Metric Driven)

- Internal or outsourced resources manage each technology.

Service Delivery (Metric Driven)

- Internal resources plan and deliver services using ITIL-compliant processes.

- Change/Risk Management
  - Internal resources plan and manages changes/risks using ITIL-compliant processes.

- Infrastructure/Operations
  - Internal or outsourced resources manage each technology.

Compliance

- All processes are documented and monitored for compliance.

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

Mission: Run IT Like a Business

Sprint-Nextel Strategy

Business Organization

Business Process

IT Systems

People

Process

Technology

User Groups

- Customers
- Suppliers
- Employees

ILA's/KPIs

- SLA's
- KPI's

Change/Risk Management

Planning & Implementation

Infrastructure/Operations
**Strategy & Governance**

- **IT Governance**
  - Organizational Reporting
    - Supplier Management
    - Ops Reviews & Scorecard Rpts
  - Lifecycle & Quality
    - IT methodology & tools
    - Project management
  - Pipeline Management
    - Supplier scheduling
    - Resource management
  - Enterprise Applications
    - Data Warehouse / Management
    - Business Intelligence
  - Enterprise Architecture
    - Arch & Technology Roadmaps
    - Arch standards and governance
  - Technology R&D
    - Technology Research
    - Trials, prototypes & evaluations
  - Enterprise Compliance
    - Sarbanes Oxley
    - Privacy

**IT Enterprise Strategy**
- Balanced scorecard
- Business Capability Roadmaps

**IT 2006 Priorities**
- Drive Operational Excellence
- Achieve the desired Customer Experience through a superior Employee Experience
- Deliver Innovation and Business Solutions
- Differentiate through the Customer Experience
- Shareholder Customer Internal Employee
- Win Market by Market w/ SmartGrowth Focus on Subscriber Quality

**Mission Statement:**
"Provide the highest quality products and services at the most efficient cost to stakeholders and shareholders while improving the morale, effectiveness and quality of work for Sprint IT Employees."

**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

**Performance Objectives**

**Draft:** For Discussion Purposes Only
Global Consumer Goods Organization

Environment
- 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

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

Approach
- 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.)
- 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

Case Studies – IT Governance

<table>
<thead>
<tr>
<th>Objective</th>
<th>Owner</th>
<th>Metrics</th>
<th>Targets</th>
<th>Status</th>
<th>Actions required</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

Monthly SmartCards for each objective

Quarterly Scorecard

Illustrative Only

Monitoring Performance Against Strategy
### 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)

#### 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 mgmt. and application support
- A monthly Sarbanes 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**

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

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

**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.)

**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)

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

Figure 2.6 – PMI’s Knowledge Areas (PMBOK)

Nine Knowledge Areas + 5 Process 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.
PMM (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-assess 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.

- PMM 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
- PMM identifies a well defined and easy to use road map to improve organizational PM maturity
- PMM enables an organization to assess its project management capabilities in the PMBOK knowledge areas at any given level.

PMM (Project Management Maturity Model) IT Governance Framework

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

<table>
<thead>
<tr>
<th>Levels of Project Management Maturity</th>
<th>Level 1 Initial Process</th>
<th>Level 2 Structured Process and Standards</th>
<th>Level 3 Organizational Standards and Institutionalized Process</th>
<th>Level 4 Managed Process</th>
<th>Level 5 Optimized Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Integration Management</td>
<td>No established practices, standards, or Project Office. Work performed in ad hoc fashion.</td>
<td>Basic, documented processes for project planning and reporting. Management only involved on high-visibility projects.</td>
<td>Project integration efforts institutionalized with procedures and standards. Project Office beginning to integrate project data.</td>
<td>Processes/stands utilized by all projects and integrated with other corporate processes/systems. Decision based on performance metrics.</td>
<td>Project integration improvement procedures utilized. Lessons learned regularly examined and used to improve documented processes. Effectiveness and efficiency metrics drive project scope and resource management. Focus on high utilization of value.</td>
</tr>
<tr>
<td>Project Time Management</td>
<td>No established planning or scheduling standards. Lack of documentation makes it difficult to achieve repeatable project success.</td>
<td>Basic processes exist but not required for planning and scheduling. Standard scheduling approaches utilized for large, visible projects.</td>
<td>Time management processes documented and utilized by most projects. Organization wide integration includes inter-project dependencies.</td>
<td>Most projects follow established resource management process.</td>
<td>Resource forecasts used for project planning and prioritization. Project team performance measured and integrated with career development.</td>
</tr>
<tr>
<td>Project Cost Management</td>
<td>No established practices or standards. Cost process documentation is ad hoc and individual projects tend to follow informal practices.</td>
<td>Basic cost estimating, reporting, and performance measurement. Cost management processes are used for large, visible projects.</td>
<td>Cost processes are organizational standard and utilized by most projects.</td>
<td>Most projects follow established resource management process.</td>
<td>Communications management plan required for all projects. Communications plans are integrated into corporate plans.</td>
</tr>
<tr>
<td>Project Quality Management</td>
<td>No established project quality practices or standards. Management is considering how they should define “quality.”</td>
<td>Basic organizational project quality policy has been adopted. Management encourages quality policy application on large, visible projects.</td>
<td>Cost processes are organizational standard and utilized by most projects. Costs are fully integrated into project office resource library.</td>
<td>Quality process is well documented and an organizational standard. Management involved in quality oversight for most projects.</td>
<td>Quality processes are organizational standard and utilized by most projects. Costs are fully integrated into project office resource library.</td>
</tr>
<tr>
<td>Project Human Resource Management</td>
<td>No repeatable process applied to planning and staffing projects. Project teams are ad hoc. Human resource time and cost is not measured.</td>
<td>Repeatable process in place that defines how to plan and manage human resources. Resource tracking for highly visible projects.</td>
<td>Project management processes are documented and utilized by most projects.</td>
<td>Most projects follow established resource management process. Project team management performance measured and integrated with career development.</td>
<td>All projects required to use quality planning standard processes. The Project Office coordinates quality standards and assurance.</td>
</tr>
<tr>
<td>Project Communications Management</td>
<td>There is an ad hoc communications process in place whereby projects are expected to provide informal status to general management.</td>
<td>Basic process is established. Large, highly visible projects follow the process and provide progress reporting for triple constraints.</td>
<td>Active involvement by management for project performance reviews. Most projects are executed in a formal project communications plan.</td>
<td>Resource forecasts used for project planning and prioritization.</td>
<td>Communications management plan required for all projects. Communications plans are integrated into corporate plans.</td>
</tr>
<tr>
<td>Project Risk Management</td>
<td>No established practices or standards in place. Documentation is minimal and results are not analyzed. Risk exposure is subjective.</td>
<td>Risk management processes are utilized for most projects.</td>
<td>Project management processes are utilized to support risk decisions at the project and the program levels.</td>
<td>Risk management processes are utilized for most projects. Metrics are used to support risk decisions at the project and the program levels.</td>
<td>Risk management processes are utilized for most projects. Metrics are used to support risk decisions at the project and the program levels.</td>
</tr>
<tr>
<td>Project Procurement/Vendor Management</td>
<td>No project procurement processes in place. Methods are ad hoc.</td>
<td>Procurement process documented and utilized by large or highly visible projects.</td>
<td>Process an organizational standard and utilized by most projects. Project team and purchasing department integrated in the procurement process.</td>
<td>Procurement process reviewed periodically. On-going process improvements focus on procurement efficiency and effectiveness metrics.</td>
<td>Procurement process reviewed periodically. On-going process improvements focus on procurement efficiency and effectiveness metrics.</td>
</tr>
</tbody>
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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*

*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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- 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.
- To be successful, Six 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

<table>
<thead>
<tr>
<th></th>
<th>Lean</th>
<th>Six Sigma</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal</strong></td>
<td>Create flow and eliminate waste</td>
<td>Improve process capability &amp; eliminate variation</td>
</tr>
<tr>
<td><strong>Application</strong></td>
<td>Primarily manufacturing processes</td>
<td>All business processes</td>
</tr>
<tr>
<td><strong>Approach</strong></td>
<td>Teaching principles &amp; implementation based on best practices</td>
<td>Teaching a generic problem-solving approach relying on statistics</td>
</tr>
<tr>
<td><strong>Project Selection</strong></td>
<td>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.))</td>
<td>Various approaches (e.g. eliminate variations)</td>
</tr>
<tr>
<td><strong>Length of Projects</strong></td>
<td>Under 3 months</td>
<td>Over 3 months</td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td>Training is becoming more formal; uses technology as an enabler</td>
<td>Dedicated resources, broad based training</td>
</tr>
<tr>
<td><strong>Training</strong></td>
<td>Kaizen Workshop of Team</td>
<td>Formal individual certifications</td>
</tr>
</tbody>
</table>

### 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 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

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.
**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*

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**IT Governance Framework**

**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.

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

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


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

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

Source: OGC/ APMG
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).
## IT Governance Framework

### COBIT® (Control Objectives for Information and Related Technology)

<table>
<thead>
<tr>
<th>Domain Process</th>
<th>Planning &amp; Organization</th>
<th>Acquisition &amp; Implementation</th>
<th>Delivery &amp; Support</th>
<th>Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>P01- Strategic IT Plan</td>
<td>X</td>
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<tr>
<td>P02- Information Architecture</td>
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<tr>
<td>P03- Determine Technology Direction</td>
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<tr>
<td>P04- IT Organization</td>
<td>X</td>
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<tr>
<td>P05- Manage IT Investment (Portfolio Investment Management)</td>
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<tr>
<td>P06- Communicate Direction</td>
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<tr>
<td>P07- Manage Human Resources</td>
<td>X</td>
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<tr>
<td>P08- Ensure External Compliance (SOX ++)</td>
<td>X</td>
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<tr>
<td>P09- Assess Risks</td>
<td>X</td>
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<tr>
<td>P10- Manage Projects (PMMM, PMBOK, Prince2, CMMI, etc.)</td>
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<tr>
<td>A11- Identify Automated Solutions</td>
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<tr>
<td>A12- Buy/Maintain Application Software</td>
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<tr>
<td>A13- Acquire/Maintain Technology Infrastructure (ITIL)</td>
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<tr>
<td>A14- Enable Operations &amp; Use (ITIL)</td>
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<tr>
<td>A15- Procure IT Resources</td>
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<tr>
<td>A16- Manage Changes (ITIL &amp; PM)</td>
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<tr>
<td>A17- Install &amp; Accredit Solutions</td>
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<tr>
<td>DS1- Define &amp; Manage Service Levels (ITIL)</td>
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<tr>
<td>DS2- Manage Third party Services</td>
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<tr>
<td>DS3- Manage Performance &amp; Capacity (ITIL)</td>
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<td>DS4- Ensure Continuous Service (ITIL)</td>
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<tr>
<td>DS5- Ensure Systems Security (ISO 17799 &amp; ITIL)</td>
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<td>DS6- Identify/allocate costs</td>
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<td>DS7- Educate/Train Users</td>
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<tr>
<td>DS8- Manage Service Desk &amp; Incidence (ITIL)</td>
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<tr>
<td>DS9- Manage the Configuration (ITIL)</td>
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</tbody>
</table>

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

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<tr>
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<tr>
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</thead>
<tbody>
<tr>
<td>DS 10- Manage Problems (ITIL)</td>
<td></td>
<td>X</td>
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<tr>
<td>DS11- Manage Data</td>
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<tr>
<td>DS12- Manage Facilities &amp; Physical Environment</td>
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<tr>
<td>DS13- Manage Operations (ITIL)</td>
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<tr>
<td>ME1- Monitor &amp; Evaluate IT Performance</td>
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<tr>
<td>ME2- Monitor &amp; Evaluate Internal Controls</td>
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<tr>
<td>ME3- Ensure Regulatory Compliance</td>
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<tr>
<td>ME4- Provide IT Governance</td>
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</tbody>
</table>

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

- **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.


- **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
  - 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.

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 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

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

<table>
<thead>
<tr>
<th>Client Platforms</th>
<th>ETA Strategy &amp; Standards</th>
<th>Application Development</th>
<th>Business Components</th>
<th>Collaboration</th>
<th>Web Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Platforms</td>
<td>Network Infrastructure</td>
<td>System Management</td>
<td>Middleware</td>
<td>Information Mgmt.</td>
<td>Security</td>
</tr>
</tbody>
</table>
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.

LEVEL 5 - Optimized Process

LEVEL 4 - Managed Process

LEVEL 3 - Institutionalized Process

LEVEL 2 - Some Structured Process

LEVEL 1 Initial Process - Ad Hoc

Governance Gap

Process improvement

IT Plan, Execution & Service Delivery

Process managed & integrated

Relevant processes across enterprise (process definition)

Some process (basic Knowledge)

No formal Governance process

Business Plan and Strategy

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

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

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

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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, workflow 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

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.

![IT/Business Alignment Diagram](image)

**Business Value Delivered**
- Revenue growth
- Return on investments
- Revenue per employee
- Time to market new products
- Stimulate innovation
- New product sales
- Product or service quality
- Business process cost/time reduction
- New application development time
- Implementation Cost
- Infrastructure availability
- Cost per transaction
- Mean time for problem resolution

*Source: Modified from Weill and Broadbend

**Source:** Modified from Forrester Research, Inc.

---

**Figure 3.1 – IT/Business Alignment Maturity Assessment Template**

<table>
<thead>
<tr>
<th>Level</th>
<th>Phase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Optimized Process</td>
<td>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.</td>
</tr>
<tr>
<td>4</td>
<td>Defined and Managed Process</td>
<td>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.</td>
</tr>
<tr>
<td>3</td>
<td>Repeatable Processes</td>
<td>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.</td>
</tr>
<tr>
<td>2</td>
<td>Initial Processes</td>
<td>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.</td>
</tr>
<tr>
<td>1</td>
<td>Ad hoc</td>
<td>There is a complete lack of any effort to align IT and business strategy. IT functions in a purely support role.</td>
</tr>
</tbody>
</table>

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.

**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)

Information Technology Strategy and Plan Development Framework

Situation Assessment → Strategic Alternatives → What do we want to be? (in customer value terms) → Strategic Imperatives to Achieve Vision/Goals → Action Initiatives

- Alternatives/Priorities
  - Customer Needs
  - Key Assumptions
  - New Applications/Devel.
  - Infrastructure/Operations
  - Architecture
  - Security
  - Web & E-Commerce
  - People
  - Vendors
  - Outsourcing

- Compliance

- Evaluation Criteria
  - Strategic/Tactical
    - Feasibility/Resources
    - Economics
    - Legal/ethical

Vision Statement

Goals, Objectives and Metrics (Quantitative and Qualitative)

Why do we have a Right to our Vision?

Why Change?

Why Doable? What Could/Should we do?

The 5-7 Core items We Must Build/Do to Win

How did we get there?

Increasing detailed market, economic planning, analysis and assessments

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

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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.
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?

* Legend:
BL – Business Leaders
IT – IT Leaders
EC – Executive Committee
PMLC – Project Management Life Cycle
SDLC – Systems Development Life Cycle
IDLC – Infrastructure Development Life Cycle

IT Governance-10-31-07 ©Copyright, GPS Group, Inc., 2006- 2008. All Rights Reserved. 141
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, with 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

<table>
<thead>
<tr>
<th>Category</th>
<th>Business Unit “A”</th>
<th>MLS Business Unit “B”</th>
<th>Corporate Service/Function</th>
<th>Information Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Initiative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Owner</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Business Lead</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Success Factors,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metrics and KPIs</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>High Level Benefits/Measures</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Level Requirements</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT Issue/Opportunity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Level Deliverables</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Phases/Milestones</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Priority</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Business Plan Organizational Elements*

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

   - New Product Research and Development
   - Make versus Buy Decisions
   - 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)

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
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

PHASE 1
Where are we?
(current situation
Assessment or base line)

External
- Technical trends/pressures
- Regulatory pressures
- Environmental trends/pressures
- Competitive pressures
- Economic pressures
- Customer pressures

Uncertainties/constraints

Internal
- Corporate (CEO) pressures
- User pressures
- Employee pressures
- Business unit pressures
- Legal pressures

Current state profile – Base Line
- General/Costs
- IT Architecture
- IT Infrastructure
- Process Maturity
- Organization & Staff
- Bench Strengths,
- Number, Skills,
- Competencies,
- Succession Planning
- Strengths/Weaknesses
- Gaps

PHASE 2
Why change?
Issues:
- What are major issues?
- What are major opportunities?
- What are major risks and threats?

PHASE 3
What could we do?
Strategic alternatives
- Economics
- Feasibility
- Legal

Opportunities, impact

PHASE 4
What should we do?
How should we get there?
Implementation strategies
and recommended action programs

- Imperatives, initiatives
  - Growth, cost, transformation, etc.
  - Priorities
  - Funding
  - Milestones
  - Ownership, accountability

PHASE 5
Did we get there?
Validation, measurement, control & corrective actions

The Five Stages of IT Investment Management Maturity

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

Enterprise and Strategic Focus

Maturity Stages
Stage 5: Leveraging IT for strategic outcomes
Stage 4: Improving the investment process
Stage 3: Developing a complete investment portfolio
Stage 2: Building the investment foundation
Stage 1: Creating investment awareness

Description
The organization has mastered the selection, control, and evaluation processes and now seeks to shape its strategic outcomes by benchmarking its IT investment processes relative to other “best-in-class” organizations.
The organization is focused on evaluation techniques to improve its IT investment processes and portfolio(s), while maintaining mature selection and control techniques.
The organization has developed a well-defined IT investment portfolio using an investment process that has sound selection criteria and maintains mature, evolving, and integrated selection, control, and evaluation processes.
Basic selection capabilities are being driven by the development of project selection criteria, including benefit and risk criteria, and an awareness of organizational priorities when identifying projects for funding. Executive oversight is applied on a project-by-project basis.

Ad hoc, unstructured, and unpredictable investment processes characterize this stage. There is generally little relationship between the success or failure of one project and the success or failure of another project.

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

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

Key selection metrics: new/incremental revenues, ROI, strategic fit, intellectual capital, risk, customer requirement, regulations, cost reduction/avoidance/containment

Flexible and scalable processes and tools

IT/Business Alignment & Portfolio Management Triangle

Business Plan

Portfolio Management

Program/Project Management (Key Metrics - Time, Cost, Risks, etc)

Systems/Product/Infrastructure/Outsourcing Life Cycles (Use Iterative, Waterfall and Hybrid Processes)

Business/IT Operations

Evaluation, selection, prioritization and funding of imperatives and initiatives

High visibility, large funding, complex, strategic, >6 months, high risk, etc. (Examples: enterprise-wide ERP; e-Business; complex new product or solution delivery; enterprise architecture; M and A;)

Standalone, limited scope projects or projects which are interrelated and part of a program

Flexible processes, tools and disciplines are used for development, but life cycle tasks will vary by project type (e.g. IT, eBusiness, new product, M and A etc.)
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*
<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibilities</th>
</tr>
</thead>
</table>
| 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 |
| 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

#### Case Studies – IT Governance

**Environment**
- 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

**Approach**
- 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

#### Case Studies – IT Governance

**Results - Alignment**
- 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

**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

**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

Planning

Measurement

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
**Key PM Definitions**

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

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**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

- Slow to Market
- Unrealistic Expectations
- Poor Project Leadership
- Lack of Executive Commitment & Support
- Lack of Measurable Controls & Metrics
- No Plan; No Risk Assessment, Mitigation and Contingency
- Ineffective Implementation Strategy
- Underestimation of Complexity
- Failure to Treat Initiative as Start-Up Venture
- Limited Constituent Involvement
- Lack of Dedicated or Sufficient Resources
- Lack of Integration with the Organization
- Poorly Defined Requirements/Scope
- Poor Vendor Management
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

<table>
<thead>
<tr>
<th>Company Size</th>
<th>S</th>
<th>C</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>9%</td>
<td>62%</td>
<td>29%</td>
</tr>
<tr>
<td>Medium</td>
<td>16%</td>
<td>47%</td>
<td>37%</td>
</tr>
<tr>
<td>Small</td>
<td>28%</td>
<td>50%</td>
<td>22%</td>
</tr>
</tbody>
</table>

Source: Blend surveys by the Standish Group and Gartner

Select Actions to Overcome Major Project Management Obstacles

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

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**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

Program/Project Management

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

- Project Management Science/Processes (30%)
  - Plans, WBS, Gantt Charts, Standards, CP/Precedence diagrams, Controls, Variance Analysis, Metrics, Methods, Earned Value, Risk Management, Status Reports, Meeting Agendas, Resource Estimating, Leveling, Training, Mentoring, Governance, Change Management

- Project Management Art - Soft Skills (70%)
  - Effective Communications, Trust, Integrity, Honesty, Sociability, Leadership, Values, Team Building, Flexibility, Decision making, Perspective, Sound Business Judgement, negotiations, Customer Relations, Problem Solving, Managing Change, Managing Expectations, Common Sense, Listening
Program/Project Management

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

1. Initial Process
   - Project Integration Management
     - No established practices, standards, or Project Office. Work performed in ad-hoc fashion.
   - Project Scope Management
     - General statement of business requirements. Utilizes scope definition techniques. Management awareness of key requirements only.
   - Project Time Management
     - No established planning or scheduling standards. Level of documentation makes it difficult to achieve repeatable project success.
   - Project Cost Management
     - No established practices or standards. Cost process documentation is ad-hoc and individual project teams follow internal practices.
   - Project Quality Management
     - No established project quality practices or standards. Management is considering what they should define "quality." (Want to define quality but does not have defined process.)
   - 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 controlled.
   - Project Communications Management
     - There is an ad hoc communications process in place whereby projects are expected to provide informal status reports.
   - Project Risk Management
     - No established practices or standards for risk management. Identification is minimal and results are not shared. Risk response is reactive.
   - Project Procurement/Vendor Management
     - No procurement process in place. Methods are ad hoc. Contracts managed at a final delivery level.

2. Structured Process and Standards
   - Basic, documented processes for project planning and reporting. Management only involved on high-visibility projects.
   - Basic scope management process in place. Scope management techniques are applied to known, more visible projects.
   - Processes exist for cost estimating, reporting, and performance measurement. Cost management processes are used for large, visible projects.
   - Basic organizational project quality policy has been adopted. Management ensures quality policy application on large, visible projects.
   - Project is in a place that defines how to plan and manage the human resources. Resource tracking for highly visible projects is in place. Project methodology is standardized.
   - Processes are documented and used for inter-project dependencies. Project management is consistently involved with risks on large, visible projects.
   - Basic procurement process for procurement of goods and services. Procurement process mostly utilized by large or highly visible projects.

3. Organizational Standards and Institutionalized Process
   - Project integration efforts institutionalized with procedures and standards. Project Office begins to integrate project data.
   - Full project management process documented and utilized by most projects. Stakeholders actively participating in scope decisions.
   - Time management processes documented and utilized by most projects. Organization-wide integration includes inter-project dependencies.
   - Cost processes are organizational standard and utilized by most projects. Projects are fully integrated into project office library.
   - Quality process is well documented and an organizational standard. Management involved in quality oversight for most projects.
   - Most projects follow established resource management process. Professional development program establishes project management career path.
   - Active involvement by management for project performance reviews. Ideal projects are executing a formal project communications plan.
   - Risk management processes are utilized for most projects. Metrics are used to support risk decisions at the project and the program levels.
   - Process an organizational standard and used by most projects. Project team and purchasing department integrated in the procurement process.
   - Project management processes are institutionalized by the organization. Lessons learned regularly examined and organizational standards and assurance.
   - Resource forecasts used for project planning and prioritization. Project team performance measured and integrated with career development.
   - Project management processes are organizational standard and utilized by most projects. Management is actively involved in risk management. Risk metrics are used for project planning and prioritization.
   - Lessons learned are metrics. Process-driven decisions are made with an organizational perspective. Vendor is integrated into the organization’s project management frameworks.

4. Managed Process
   - Project integration improvement programs utilized. Lessons learned regularly examined and used to improve documented processes.
   - Effectiveness and efficiency metrics drive project scope decisions.
   - Management actively uses efficiency and effectiveness metrics for decision-making.
   - Lessons learned improved documented processes.

5. Optimized Process
   - Project integration improvement programs utilized. Lessons learned regularly examined and used to improve documented processes.
   - Effectiveness and efficiency metrics drive project scope decisions.
   - Management actively uses efficiency and effectiveness metrics for decision-making.

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

IT Demand – Planned/Unplanned

Business Plan

- Vision, goals, objectives, strategies and financials
- Strategic initiatives (From Business Plan)

Investment Selection Criteria

Key selection metrics: new/incremental revenues, share of customer $, ROI, NPV, ROA, strategic fit, intellectual capital, barriers to entry (patent), degree of risk, customer satisfaction, laws and regulations, cost reduction and avoidance

EVM

- Plan
- Design
- Develop
- Build
- Test
- Implement
- Transfer
- Document

Flexible and scalable processes, templates and tools required to effectively manage multiple, interrelated projects which range from "fast track" to "full risk mitigation"
**Project Management Life Cycle Phases & Key Components - Overview**

- **Initiating**
  - 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

- **Planning**
  - 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

- **Executing**
  - 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

- **Closing & Termination**
  - 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**

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**IT Demand Management – Classifications (Illustrative Example)**

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

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

- **Gate 0 – Initial Filter** (Preliminary Approval)
  - What?
  - Planned
  - Unplanned
  - Criteria
    - Critical business need?
    - Cost/Benefit acceptable?
    - Project visibility?
    - Portfolio implications?
    - Mandatory legal or policy requirement?
    - Project Sponsor/Owner
    - Alignment with Business Strategy?
    - Is it in the Capital or Operating Budget?
    - Type of Demand - Keep lights on; Break Fix; Fast Track or Major Initiative; Service (Repeatable)
  - Template/Tools
    - Request or e-Mail

- **Gate 1 – Rationalize (Type/Scale)**
  - Type/Scale Matrix

- **Gate 2 – Sequence and Allocate Resources (Final Filter)**
  - Resource Allocation
  - Criteria
    - Are resources available when needed?
    - Deployment schedule?
    - Dependencies with other projects?
    - Is program/project logged?
    - Is PM and Team identified?
  - Final Approval

---

*PMLC = Project Management Life Cycle*
Select Criteria used to help evaluate an IT Request and Optimize Demand 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?
### 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 completion date doable with the resources available? Can the request completion date be met, given other priorities?

---

### Program/Project/Service Request Type/Scale Matrix

**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.

<table>
<thead>
<tr>
<th>COMPLEXITY FACTOR</th>
<th>LOW</th>
<th>MOD</th>
<th>HIGH</th>
<th>NOTES</th>
<th>ENTER SCORE (1, 3 or 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Project Type</td>
<td></td>
<td></td>
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<tr>
<td>2 Technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Scope</td>
<td></td>
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<td></td>
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<tr>
<td>4 Time/Impact</td>
<td></td>
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<td></td>
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<tr>
<td>5 Implementation</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6 Capital Required</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7 Operating Costs</td>
<td></td>
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</tr>
<tr>
<td>8 Vendor Relationships</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>9 Resources</td>
<td></td>
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<tr>
<td>10 Project Duration</td>
<td></td>
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<td></td>
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<tr>
<td>11 Other</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**TOTAL PROJECT TYPE/SCALE SCORE**

**DEFINITIONS**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Key Attributes</th>
<th># of points</th>
<th>Recommended Template</th>
<th>Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple</td>
<td>Low Complexity</td>
<td>Less than 30 Points</td>
<td>Template - PR, PCR</td>
<td>Director or Delegate</td>
</tr>
<tr>
<td>Moderate</td>
<td>Medium complexity</td>
<td>Between 30 and 35 Points</td>
<td>Template - PIR, D TO, PCR (Optional)</td>
<td>CIO or Delegate</td>
</tr>
<tr>
<td>Complex</td>
<td>High visibility, AC directed, Multiple organizations affected</td>
<td>Greater than 35 Points</td>
<td>Template - Alter tech projects, otherwise TAD, IITQR, RFI (optional)</td>
<td>CIO or Delegate</td>
</tr>
</tbody>
</table>

**Notes:** Assumes internal 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.

<table>
<thead>
<tr>
<th>Programs and Projects</th>
<th>% of IT Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>55%</td>
</tr>
<tr>
<td>17</td>
<td>25%</td>
</tr>
<tr>
<td>20</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>95%</strong></td>
</tr>
</tbody>
</table>

*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:

**PROJECT MANAGEMENT**

**MINIMUM PM TEMPLATES (ILLUSTRATION ONLY)**
- PROJECT (SERVICE) REQUEST
- USER REQUIREMENT/OBJECTIVES/SCOPE
- PROJECT PLAN/BUDGET/MILESTONES/DELIVERABLES
- STATUS REPORTING, METRICS AND GOVERNANCE

**SDLC/IDLC/PDLC (must accommodate multiple methodologies such as:**
- Waterfall, Spiral [Iterative], Hybrid, RAD, DSDM Development Processes)

**FULL RISK MITIGATION (complex program or project)**

**FAST TRACK**
- Small or Quick Projects

**BUILT**
- Simple*
- Complex*

**PURCHASED**
- Simple*
- Complex*

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
### Description of PM Lifecycle Templates

<table>
<thead>
<tr>
<th>Phase(s)</th>
<th>Template(s)</th>
<th>Purpose/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initiation</strong></td>
<td>O. Program/Project Request (PR)</td>
<td>Obtains customer or other constituent authorization to request IT services</td>
</tr>
<tr>
<td></td>
<td>1. Program/Project Initiation Report (PIR)</td>
<td>Provides sufficient high-level information on a program or project to either approve or reject the request (e.g. scope, requirements, etc.)</td>
</tr>
<tr>
<td></td>
<td>2. Business Project Definition (BPD)</td>
<td>Describes the major business objectives that the system, component or deliverable will satisfy and/or impact</td>
</tr>
<tr>
<td></td>
<td>3. RFI, RFQ, RFP Checklists</td>
<td>Identifies the contents of a solicitation to vendors in the form of: Request for Information, Request for Quote and/or Request for Proposal</td>
</tr>
<tr>
<td></td>
<td>4. Technical/Functional Architecture Definition (TAD)</td>
<td>Describes the complete system and/or component from a functional, technical and operational aspect</td>
</tr>
<tr>
<td></td>
<td>5. Deployment, Training and Documentation (DTD)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Implementation, Integration, Testing and QA Requirements (ITQR)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Program/Project Delivery/Closure Report (PCR)</td>
<td></td>
</tr>
</tbody>
</table>

Note: "V" Diagram Assumes Multiple Iterations Within Each Stage (Phase) and Between Stages and Concurrent (Parallel) Work on Select Stages
### Description of PM Lifecycle Templates (Cont'd)

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

### Program/Project Management

#### 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.

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

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

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

- **Project Managers**
  - Do work per project baseline
  - Do work per authorized change form

- **Project Team**
  - Daily/Weekly
  - Weekly/80 hours
  - Semi-Monthly/Monthly
  - Monthly/Quarterly
Program/Project Management Office – Roles and Areas of Focus (Illustrative Example)

Growing trend to establish PMOs at CEO/COO level to track Enterprise Wide Initiatives

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

PMO can be located at CIO level or distributed level or both

Roles

- Charter
- Organization
- WBS
- Resources
- Economics
- Schedule
- Escalation
- Baseline
- Estimate
- Networks
- Issues Mgmt.
- Communications
- Metrics
- Reporting
- Follow-Up
- Change Mgmt.

- Needs
- Alternatives
- Sanity Check
- Feasibility
- Economics
- Baseline
- Impact Analysis
- Formal Approval
- Change Control
- Documentation
- Tracking
- Identification
- Analysis
- Quantification
- Mitigation
- Contingency Plans
- Disaster Recovery Plans
- Config. Mgmt.
- Workforce
- Vendors
- Equipment
- Assets
- Technologies
- Facilities
- ROI/NPV
- Cash flow
- Activity based costing
- Earnings value
- Variance analysis
- Cost performance index
- Continuous process improvement
- Validation
- Testing
- Sanity checks
- Best practices
- Interface and integration issues and processes within a project and between projects, systems, functions and SBU's
- Training
- Education
- Advocacy
- Competencies
- Certification
- Q12

PMO
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

**Head, PM Center of Excellence (CoE)**
- Professional Development (training, mentoring, career paths, certification)
- Community (awareness, communications, PR)
- Methods and Tools (processes, software tools, templates)
- Project controls (governance, vital signs, metrics, reporting, escalation)
- Deployment/operational support (PM help desk, troubled/complex project resource)
- Intellectual Capital (corporate memory, lessons learned, PM knowledge mgt.)

**BUs**

**Federal Government Organization**

**Case Studies – IT Governance**

**Environment & Drivers**
- 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

**Issues and/or Opportunities**
- 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

**Approach**
- 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

**Approach (Cont’d)**
- 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
### 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

### 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
IT Governance Plan and Phases

**Phase 0 – IT Operations PMO Pilot**
- Design and Implement a PMO Center of Excellence Pilot
- 3 months

**Phase 1 – CIO PMO**
- Expand PMO Framework to the entire IT Organization
- 3 - Months

**Phase 2 CIO IT Investment and Governance Design**
- Design IT Investment (Portfolio Mgt), IT/Business Alignment, Governance & Performance Management Framework
- 3 Months

**Phase 3 – IT Investment and Governance Rollout**
- Deploy IT Investment & Governance Roadmap identified in Phase Two
- 4 Months

**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

**Program/Project Management**

- 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*

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

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

Reduce Total Cost of Operations

Improve Service Quality

Improve User Satisfaction & Business/IT Alignment

Improve Compliance

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/IEC 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)


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*

<table>
<thead>
<tr>
<th>Service Strategy</th>
<th>Service Design*</th>
<th>Service Transition*</th>
<th>Service Operation*</th>
<th>Continual Service Improvement</th>
</tr>
</thead>
</table>
| • 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.
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.

**ITIL Version 3 – Qualification and Certifications**

**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 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.

### Advantages of ITIL

#### 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

### Potential Issues with ITIL
- 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

ITIL Service Management Processes & Functions – v2

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.
**Key Implication:**

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

---

**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 cost reduction through efficient use of resources
- Promotes customer retention and satisfaction

---

**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

---

**Service Desk Summary**

**IT Service Management**

**Service Desk Summary**  
*IT Service Management*

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- 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.
Problem Management Summary

**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 firefighting.

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

---

Problem Management Summary

**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.
**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.

---

**Goal:**

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

If the implementation fails, the change must be evaluated again.

All implemented changes must be reviewed. The purpose of the reviews is to establish that:

- The change has had the desired effect and met its objectives.
- There have been no unexpected or undesirable side-effects.
- The resources used to implement the change were as planned.
Release Management Summary

**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

**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**

<table>
<thead>
<tr>
<th>Development/Acquisition Env.</th>
<th>Controlled Test Environment</th>
<th>Live Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release Policy</td>
<td>Design/Develop or Order/Purchase S/H/N</td>
<td>Build/Configure Release</td>
</tr>
<tr>
<td>Release Planning</td>
<td>Build/Configure Release</td>
<td>Accept Release</td>
</tr>
<tr>
<td></td>
<td>Fit-for-Purpose Testing</td>
<td>Roll-out Planning</td>
</tr>
<tr>
<td></td>
<td>Accept Release</td>
<td>Communication Preparation and Training</td>
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<tr>
<td></td>
<td>Roll-out Planning</td>
<td>Distribution and Installation</td>
</tr>
</tbody>
</table>
**Service Level Management Summary**

**Definition:** Improves and maintains IT Service quality and performance through a continuous cycle of 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** (agreeing)
- **Verification of feasibility**
- **Establishment of agreements**
- **Monitoring Service Levels**
- **Reporting and reviewing**

Negotiation must take place before SLAs can be formally defined.

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

- **SLA**
  - Service level 1
  - Service Level 2
  - Service Level 3
  - .....
**Capacity Management Summary**

**IT Service Management**

**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

---

**Capacity Management Summary**

**IT Service Management**

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

![Diagram of Capacity Management Process]

- **Workload Management**
- **Application Sizing**
- **Resource Management**
- **Performance Management**
- **Demand Management**
- **Modeling**
- **Capacity Planning**

**Types:** Batch, online, network

**What-If analysis**

**Customer demands for IT**

**Estimate hardware/network resources to support proposed application and service levels**

**What is available to meet IT demands?**

**What we actually did?**

**- Scalable**
Availability Management Summary

**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**

**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**

**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.

---

**Risk analysis**

\[
\begin{align*}
\text{Assets} & \quad \text{Vulnerabilities} \\
\text{Threats} & \quad \text{Risks} \\
\text{Counter Measures} & \quad \text{Damage Reduction/ Avoidance} \\
\end{align*}
\]

**Risk management**

\[
\begin{align*}
\text{Continuity plan} & \\
\end{align*}
\]
**IT Financial Management Summary**

**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

---

**Financial Management Summary**

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

“Charging” based on user activity

A budget is available to run IT

IT Service Organization

Investments are registered against available budgets
**IT Security Management Summary**

**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.
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.

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.

**Evaluation** (part of Service Transition Planning)

ITIL 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


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, Functions and Tools for Implementation
• Document and train
• Establish a “Web Portal” to Support Dissemination of Process Implementations.
• Continuously improve
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.

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

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

Select ITSM Management Metrics

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

<table>
<thead>
<tr>
<th>ITIL Process</th>
<th>Start Here</th>
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<tbody>
<tr>
<td>Service Desk / Incident Management</td>
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<tr>
<td>Configuration Management</td>
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<td>Problem Management</td>
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<td>Capacity Management</td>
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<td>IT Service Continuity Management</td>
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<td>Financial Management of IT Services</td>
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<td>Service Level Management</td>
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</table>

Select ITIL Design Templates/Documents (Illustrative Example)

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

**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

**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. >$1.0 Million) 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

**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 mgmt., configuration mgmt., service level mgmt., release mgmt., incident mgmt. & problem mgmt.)
- 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.

IT Service Management

Summary

- IT Service Management puts a heavy emphasis on the importance of process implementation and improvement.
- Processes should be well defined, documented, scalable, flexible and measured.
- Processes define interfaces between organizations and ensure that the workflow 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.

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The Information Technology Balancing Dilemma

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 firm’s governance requirements?

## Outsourcing Motivations – Build versus Buy Criteria

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

The Modular Corporation

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

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).

The process of outsourcing begins with strategy, moves through assessment and implementation and then continues into the management of the relationship.

The process forms a closed loop as the management of the current relationship sets the stage for what’s strategically possible in the future.

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

<table>
<thead>
<tr>
<th>Stage</th>
<th>Idea</th>
<th>Assessment &amp; Planning</th>
<th>Implementation</th>
<th>Transition</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deliverables</td>
<td></td>
<td>• Develop Concept</td>
<td>• Analyze current processes &amp; functions</td>
<td>• Detailed transition plan (with pilot)</td>
<td>• Perform daily management activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Perform High Level Review of Operations</td>
<td>• Define proposed processes &amp; functions</td>
<td>• Implement new organization structure</td>
<td>• Monitor performance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Identify corporate direction</td>
<td>• Define user needs</td>
<td>• Develop and negotiate contract</td>
<td>• Implement relationship management process</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Perform Situation Analysis &amp; Identify Outsourcing Opportunity</td>
<td>• Perform risk analysis</td>
<td>• Develop human resource and asset transfer plan</td>
<td>• Institute change management process</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Get executive sponsor</td>
<td>• Develop business case (with plan)</td>
<td>• Communications Plan</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Assign Steering Comm.</td>
<td></td>
<td>• Governance plan</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Go/No Go Criteria</th>
<th>Appropriate?</th>
<th>Real?</th>
<th>Deal?</th>
<th>Operate?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Alignment with business strategy?</td>
<td>• Acceptable business case?</td>
<td>• Approved/ signed contract?</td>
<td>• Governance and Metrics Being Met?</td>
</tr>
<tr>
<td></td>
<td>• Core competency?</td>
<td>• Acceptable risk?</td>
<td></td>
<td>• Renew, Expand, or Disengage?</td>
</tr>
<tr>
<td></td>
<td>• High level cost/benefit acceptable?</td>
<td>• Acceptable reward/ risk analysis?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Competitive advantage?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Legal, ethical, etc.?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 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)? (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.

Request for Information (RFI)
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

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

+++
### Scoring, Weighing and Evaluating Potential Vendors (Illustrative Example)

<table>
<thead>
<tr>
<th>Demonstrated Competencies – 15%</th>
<th>Competitiveness of Solution – 50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>– People (Recruitment, Training, Experience)</td>
<td>– Solution itself (Fit to Requirements, Innovative)</td>
</tr>
<tr>
<td>– Processes (Benchmarking, Certification, Continuous Improvement)</td>
<td>– Service Delivery (Quality of Processes, Tools, Resources, Performance, Management Depth and Capabilities)</td>
</tr>
<tr>
<td>– Technologies (Level of Investment, Leading Edge)</td>
<td>– Risks and Risk Sharing</td>
</tr>
<tr>
<td>– Proven Performance &amp; Certifications</td>
<td>– Terms and Conditions (Arbitration, Disputes, Adjudication, Jurisdiction)</td>
</tr>
<tr>
<td>– Track Record of Innovation</td>
<td>– Human Resources (Employee Transition, Career Opportunities, Lay Offs, Outplacement)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vendor Capabilities – 15%</th>
<th>Relationship Dynamics – 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>– Financial Strength and Stability</td>
<td>– Culture</td>
</tr>
<tr>
<td>– Infrastructure and Resources (Bench Strength, Weaknesses/Points of Failure)</td>
<td>– Mission and Strategy</td>
</tr>
<tr>
<td>– Management Systems</td>
<td>– Relationship Management (Flexibility, Partnership, Trust, Executive Presence, Governance and Reporting)</td>
</tr>
<tr>
<td>– Complete Suite of Services (Type and Scope, Ability to Scale, Backup, Redundancy, Security, IP protection, etc.)</td>
<td>– Relative Importance (Size, as a Client)</td>
</tr>
<tr>
<td>– Scalability</td>
<td>– Achievement (esp. existing relationship)</td>
</tr>
</tbody>
</table>

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:**
- 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

**Don’t:**
- 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
A formal outsourcing governance and review process should be established and followed with clearly defined roles, responsibilities and actions.

- Last possible option
- Approves major initiatives
- Resolves critical issues
- Approves major changes
- Prioritizes resource allocations
- Manages performance/corrective actions
- Resolves issues escalated from OPM
- Supports OPM
- Cross project impacts and priorities
- Change Control Board
- Manages performance/corrective actions
- Communicates status and actions
- Escalates issues and conflicts not resolvable
- Manages performance/corrective actions
- Do work per contract
- Do work per authorized change form

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 countries
- AT&T Program Manager and team on site 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 of the business
- Reduce Operating cost – over $125 Million in 10 years
- Ability to implement new technologies efficiently and effectively
- Clause in contract allowed Textron to re-evaluate deal every three years.

### 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!

Performance Management

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,

• Those that don’t keep score truly don’t know their position and may be beyond help.
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
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](http://www.balancedscorecard.org/basics/bsc1.html)

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CSFs for IT and Key Performance Indicators

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

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, 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.

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)

Performance Management

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)

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

<table>
<thead>
<tr>
<th>Project Management Performance</th>
<th>Project Alignment with IT Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Most Common Metrics</strong></td>
<td>Percent of projects directly linked to business objectives</td>
</tr>
<tr>
<td>Percentage of projects on time, on budget, within scope</td>
<td>Percentage of applications deployed on a global basis</td>
</tr>
<tr>
<td>Percentage of projects compliant with architectural standards</td>
<td>Percentage of infrastructure standardization projects of total project pool</td>
</tr>
<tr>
<td>Customer Satisfaction Index</td>
<td>Percentage of projects using common project methodology</td>
</tr>
<tr>
<td><strong>Project Spending and Costs</strong></td>
<td>Percentage of application failures within first 90 days of deployment</td>
</tr>
<tr>
<td>Actual versus planned ROI for implementation of key initiatives</td>
<td>Percentage of “at-risk” projects that adopt quality, security, and compliance standards</td>
</tr>
<tr>
<td>Percentage of projects with completed business case</td>
<td>Increase in project management maturity</td>
</tr>
<tr>
<td>Percentage of budget allocated to unplanned projects</td>
<td>Project quality index</td>
</tr>
<tr>
<td>Earned value (for Federal Government Projects)</td>
<td></td>
</tr>
<tr>
<td>Cost Performance Index</td>
<td></td>
</tr>
<tr>
<td><strong>Project Timeliness and Delivery</strong></td>
<td></td>
</tr>
<tr>
<td>Percent and cost of project rework due to changed scope, poor requirements definition, etc.</td>
<td></td>
</tr>
<tr>
<td>Average project duration</td>
<td></td>
</tr>
<tr>
<td>Percentage of projects with detailed project plan</td>
<td></td>
</tr>
<tr>
<td>Dollars saved through productivity improvement and reusable code</td>
<td></td>
</tr>
<tr>
<td>Schedule performance index</td>
<td></td>
</tr>
<tr>
<td>Percentage of project milestones delivered</td>
<td></td>
</tr>
</tbody>
</table>
### Select Balanced Scorecard Metrics – A Composite of Case Study Companies (Illustrative Example) (Cont’d)

#### IT Service Management and Vendor Performance

| Key applications and systems availability | IT contract cost ($) |
| Help-desk first-call resolution rate | IT contract cost as a % of IT spend |

#### User-Centric Operational Performance

| Average number of incidents per user per month (average number of times end user experiences global desktop availability outages per month) | IT project completion on time, within budget |
| Consistently available and reliable IT services to users | SLA performance (%) |
| Rate of failure incidents impacting business | Customer satisfaction index (%) |

#### IT Vendor Management

| IT contract cost ($) | IT project completion on time, within budget |
| IT contract cost as a % of IT spend | SLA performance (%) |
| Customer satisfaction index (%) | |

#### Help-Desk Performance

| Mean time to repair for all network and desktop outages | Percentage of infrastructure service requests closed within service level agreements |
| 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

| Print server availability | Completion of service transformation with minimum business disruption |
| All critical systems and infrastructure have viable business continuity plans | All announced changes completed within advertised downtime window |
| System/application database maintained with more than 95 percent accuracy | Percentage of IT architectural plans approved, reviewed, and accepted by business |
| E-mail transmit less than 20 seconds (all regions) | Number of applications used by more than one line of business |
| Monthly average of network availability consistently more than 99.5 percent | Percentage of desktop PC standardized |
| Monthly average of critical systems availability consistently above 99.5 percent | End-to-end availability for customer service |
| Mean time to repair for all client outages less than two hours | IT effectiveness in resource allocation supporting business objectives |
| Network uptime | Identify and manage strategic alliances with IT partners |
| PC/laptop hardware fix or replacement within 48 hours | Decrease average development cost by 10 percent |
| Total cost of ownership of identified products and services compared to industry standards | |

#### Information Security

| Percent of systems compliant with IT security standards | |
| Number and type of security incidents time to respond and resolve security incidents | |

#### Operational Strategy Adoption

| 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 | |

#### IT HR Skills Management

| Employee morale/satisfaction | Percentage of performance assessment and development plans delivered to employees |
| Overall IT staff retention and attrition rate | Percentage of employees with mentors |

#### Staffing

| Percentage of non-entry-level position filled internally | Percentage of employees with individual development plans |
| Average tenure of solid performers (in years) | Percentage of individual training objectives met |
| Percentage of projects assignments that are cross-functional | Employee “business knowledge” survey performance |
| Ratio of skills sets needed to skills set represented | Percentage of managers trained in employee motivation |
| Performance against staff diversity goals | Percentage of staff with appropriate measures for their personal goals |
| Number of candidates interviewed per open position | Share of IT training spent in business units |
| IT headcount (number of full-time IT staff) | Number of IT person-hours spent at industry events |
| Contractor headcount | Number of training hours per employee per quarter |

#### Training and Personal Development

| 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 | |

#### Marketing/ PR - Related Metrics

| Number of awards won by company for use of IT | Competitiveness of current employment offer versus industry |
| Citation of IT organization in press | |


### Customer Satisfaction

#### Most Common Metrics

<table>
<thead>
<tr>
<th>Surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer satisfaction survey – quarterly or semi-annually</td>
</tr>
<tr>
<td>Overall business executive satisfaction rating</td>
</tr>
</tbody>
</table>

#### 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

**Financial Objectives**: Earnings growth > 50%.
Revenue growth > 30%.
Sales volume growth > 50%.
Net margin improvement.
Inventory turns > 1:5.
ROE > 20%.
ROA > 12%

**Business Processes**

- **Optimized Distribution Model**: JIT manufacturing, outbound, build-to-order, reduced cycle time, supply chain integration, global production optimization.
- **Business Innovation Processes**: Under $1000 PCs, products, process, configured, SAP and other business software, filling inventory, design to market requirements - workstations, laptops, high performance desktops.

**Learning & Growth**

- **Alliances**: Partnerships—e.g., suppliers, retailers, acquisitions, incentive programs, SAP and global extranet solutions, use of Internet.
- **Improved customer requirement information; New capabilities**

**Customer Results**

- **Aggressive pricing - lead stability**: Expand markets with new products or configurations, establish integrated brand name, increase market share to almost 24% U.S. market.
- **Design to lower prices; new product capabilities; better service programs**

**Market expansion, New market segments, Customer satisfaction**

- **Lower operating costs; improved use of resources; Reduced waste/obsolete inventory**
- **Lower costs; improved service; improved access**

---

## Governance Report/Meeting Calendar

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

<table>
<thead>
<tr>
<th>JAN</th>
<th>MARCH</th>
<th>MAY</th>
<th>JULY</th>
<th>AUGUST</th>
<th>OCT</th>
<th>DEC</th>
</tr>
</thead>
</table>

### Strategic & Operational Plans & Budgets (Capital & Expense)

| PROGRAMS, PROJECTS and INFRASTRUCTURE OPERATIONS PLANS/BUDGETS/REPORTS* |
|-----------------------------|---------------------|

#### Strategic Plan
- **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

#### Program/Project Plans
- **Weekly**
  - Charter
  - Schedule
  - Budget
  - Deliverables

- **Bi-Weekly/Monthly**
  - Program/Project Investment Management
  - IT Service Management & Delivery

- **Semi-Annual/Annual**
  - Program/Project Plans
    - Charter
    - Schedule
    - Budget
    - Deliverables

---

### 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 are relevant to the performance management practices and compensation incentives of their enterprises.
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

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

COBIT ® (Control Objectives for Information and Related Technology)
### COBIT *(Control Objectives for Information and Related Technology)*

#### (Cont’d)

<table>
<thead>
<tr>
<th>Domain</th>
<th>Process</th>
<th>Planning &amp; Organization</th>
<th>Acquisition &amp; Implementation</th>
<th>Delivery &amp; Support</th>
<th>Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>A13</td>
<td>Acquire/Maintain Technology Infrastructure (ITIL)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A14</td>
<td>Enable Operations &amp; Use (ITIL)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A15</td>
<td>Procure IT Resources</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A16</td>
<td>Manage Changes (ITIL &amp; PM)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A17</td>
<td>Install &amp; Accredit Solutions</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS1</td>
<td>Define &amp; Manage Service Levels (ITIL)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS2</td>
<td>Manage Third party Services</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS3</td>
<td>Manage Performance &amp; Capacity (ITIL)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS4</td>
<td>Ensure Continuous Service (ITIL)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS5</td>
<td>Ensure Systems Security (ISO 17799 &amp; ITIL)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS6</td>
<td>Identify/allocate costs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS7</td>
<td>Educate/Train Users</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS8</td>
<td>Manage Service Desk &amp; Incidence (ITIL)</td>
<td>X</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>DS9</td>
<td>Manage the Configuration (ITIL)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>DS10</td>
<td>Manage Problems (ITIL)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS11</td>
<td>Manage Data</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS12</td>
<td>Manage Facilities &amp; Physical Environment</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS13</td>
<td>Manage Operations (ITIL)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME1</td>
<td>Monitor &amp; Evaluate IT Performance</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME2</td>
<td>Monitor &amp; Evaluate Internal Controls</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME3</td>
<td>Ensure Regulatory Compliance</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ME4</td>
<td>Provide IT Governance</td>
<td>X</td>
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</tbody>
</table>

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.
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)

<table>
<thead>
<tr>
<th>Risk Exposure Key</th>
<th>Criteria</th>
<th>Risk Impact [Ri]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest (Ri = 15-20) Contingency Plan Required</td>
<td>Hazard</td>
<td>Unrecoverable impact to environment, system, and/or personnel health and/or</td>
</tr>
<tr>
<td>High (Ri = 9-12) Contingency Plan Highly Recommended</td>
<td>Schedule</td>
<td>Unachievable and/or</td>
</tr>
<tr>
<td>Medium (Ri = 4-8) Contingency Plan Discretionary</td>
<td>Cost</td>
<td>Major budget overrun (&gt;50%) and/or</td>
</tr>
<tr>
<td>Low (Ri = 1-3) Contingency Plan Not Required</td>
<td>Support</td>
<td>Unsupportable systems and/or</td>
</tr>
<tr>
<td>Risk Exposure (Ri) = Ri x Rp</td>
<td>Performance</td>
<td>Non-achievement of technical performance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>▼ Value(Rp) ▼</th>
<th>Catastrophic (4)</th>
<th>Critical (3)</th>
<th>Marginal (2)</th>
<th>Negligible (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>81%-99% Probability of Happening</td>
<td>Near Certain (5)</td>
<td>20</td>
<td>15</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>61%-80% Probability of Happening</td>
<td>Probable (4)</td>
<td>16</td>
<td>12</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>41%-60% Probability of Happening</td>
<td>Possible (3)</td>
<td>12</td>
<td>9</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>21%-40% Probability of Happening</td>
<td>Marginal (2)</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>
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
2.1.5 Communications Plan
2.2 Project Organization
2.2.1 Charter – 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
4.3 Emergency Response Linkage to Business Recovery

4.3.1 Alternative Business Process Strategy
4.3.2 IT Systems, Networks and Data Backup and Recovery Strategy
4.3.3 Premises and Critical Equipment and Asset Backup
4.3.4 Customer Service and Call Center Backup
4.3.4 Administration and Operations Backup
4.3.5 Insurance Coverage
4.4 Key Documents and Procedures
4.4.1 Documents and Records Vital to the Business
4.4.2 Off-Site Storage and Backup
4.4.3 Emergency Office Supplies

5.0 Disaster Recovery
5.1. Mobilizing the Disaster Recovery Team, Roles, Responsibilities and Authority
5.2 Disaster Recovery Plan
5.2.1 Identification of Potential Disaster Status and Assess Extent of Damage and Business Impact
5.2.2 Notification and Reporting During Disaster Recovery Phase
5.2.3 Prepare Specific Recovery Plans - Detailed Resumption, Recovery and Restoration
5.2.4 Communicate Status of Recovery
5.2.5 Business Recovery Tasks
5.2.5.1 Power and Other Utilities
5.2.5.2 Premises, Fixtures, Furniture (Facilities Recovery Management)
5.2.5.3 IT and Communications Systems and Facilities
5.2.5.4 Production Facilities and Equipment
5.2.5.5 Operations
5.2.5.6 Distribution, Warehousing, Logistics and Supply Chain Management
5.2.5.8 Engineering and Research and Development
5.2.5.9 Finance, Administration and Security
5.2.5.10 Other +++

6.0 Testing the Business Recover Plan and Process
6.1 Planning the Tests
6.1.1 Test Multiple Scenarios based on Different Threats
6.1.2 Evaluate Results, Identify Gaps and Improve
7.0 Education, Training and Plan Updating
7.1. Develop organizational awareness and training programs
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.

• **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)

Demand Management
- Define and publish services
- Self-service user request catalog
- Represent SLAs and costs

Service Costing
- Usage-based chargeback ( invoicing ) or cost allocation
- Credits for SLA violations
- Role-based decision support

Enterprise Change Management
- Software and operational change
- Standardize and automate IT process workflow

Incident/Problem Management
- Integrated service desk
- Decision-support for service desk optimization
- Centralized knowledge base

Service Level Management
- Define and track negotiated business service levels
- Prioritize service activities based on SLA impact

Source: CA
**Asset Management Processes Supported by Tools** (Illustrative Example)

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

**Financial Management**
- Budget and forecast
- Procurement to retirement

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

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

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

**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

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

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

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**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

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**Source: CA**
**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)

**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

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

- **Must have a corporate mandate from 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 ii

• 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 and Critical Success Factors

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 on current and emerging best practices, standards and guidelines and endorse individual and organizational certifications

Lessons Learned and Critical Success Factors

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!

9.0 References

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


B. Program/Project Management and SDLC Life Cycles

### 9.0 References (Cont’d)

#### B. Program/Project Management and SDLC Life Cycles (Cont’d)


#### C. Governance, Performance Management and Management Controls:

14. IT Governance Institute, CobiT 4.0, ITGI, 2006.
20. IT Governance Institute, Enterprise Value: Governance of IT Investments, 2006.

### 9.0 References (Cont’d)

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

2. Edwards, John, Dream Catalogue, *CFO Magazine*, September, 2005

#### E. Strategic Sourcing, Outsourcing and Vendor Management:

5. *SOP* – *sop@ Carnegie Mellon University*.

#### F. Leadership:

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 affecting 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 ----------------------------------

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<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>– Is the reason to change, whether driven by threat or opportunity, instilled within organization?</td>
<td>– Is the desired outcome of change clear, and legitimate?</td>
<td>– Is the outcome expressed in simple terms?</td>
<td>– Is there a strong commitment from all key constituents to invest in the change, make it work, and demand and receive management attention?</td>
<td>– Once the change is started, can we implement it on a sustained basis?</td>
</tr>
<tr>
<td></td>
<td>– Is it widely shared through data, demonstration, demand or diagnosis?</td>
<td>– Is it widely understood and shared?</td>
<td></td>
<td>– Are the results transferred throughout the organization?</td>
<td>– Are there rewards and recognition linked to change progress? Other motivators?</td>
</tr>
<tr>
<td></td>
<td>– Does the need for change exceed its resistance?</td>
<td></td>
<td></td>
<td></td>
<td>– Do we know our real progress?</td>
</tr>
</tbody>
</table>

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)

CIO

Infrastructure
- Enterprise computing
- Telecommunications
- Messaging
- Network management
- Technology architecture
- Web technology

Organizational Change
- Business user training, communications, and readiness assessment

Knowledge Management
- Data administration and integration
- Data warehousing
- Data reporting and tools
- Master data

Applications Development and Maintenance
- e-Business
- Application integration
- New applications
- Maintenance

Governance
- Marketing and PR
- Strategic / Tactical Plans
- Compliance
- Performance Management
- CPMA

Business Process Transformation
- Generate Demand
- Manufacturing
- Order-to-Cash
- Materials Management / Supply Chain
- Procure-to-Pay
- Finance and Planning

Shared Services
- End-user computing
- Help desk
- Information security

IT Organization Structure for a Global Manufacturing Company (Illustrative Example)

Group CIO

Infrastructure and Operations
- Technical architecture
- IT infrastructure strategy
- Data center and network operations

Advanced Technology Group
- Assessment of new technology
- Prototyping

Governance
- Project and portfolio management methodologies
- IT security and Continuity
- Strategic planning
- Budgeting and finance

Applications Development
- Data architecture and migration planning
- Development and support of global applications

Quality Assurance
- Global performance measurement and reporting

Strategic Sourcing
- Global sourcing strategy
- Vendor management and measurement

Integration
- Strategy, architecture, tools/ process/ methodology
- Development for EAI, BI, Architecture, Portal Architecture

Regional/Business Unit CIOs

Mirrors Group CIO Organization
**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.

<table>
<thead>
<tr>
<th>Leadership</th>
<th>Market/Customer Focus</th>
<th>Critical Thinking</th>
<th>Achieving Results &amp; Execution</th>
<th>Functional Expertise*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborate</td>
<td>Customer Focus/VOC</td>
<td>Financial Acumen</td>
<td>Quality Focus</td>
<td>Marketing</td>
</tr>
<tr>
<td>Visionary</td>
<td>Business/Industry Insight</td>
<td>Life Long Learning</td>
<td>Leverageing Technology</td>
<td>Operations</td>
</tr>
<tr>
<td>Change Agent</td>
<td>Entrepreneurial/Intrapreneurial Orientation</td>
<td>Creativity &amp; Innovation</td>
<td>Improve Processes</td>
<td>IT/PM/BATech.</td>
</tr>
<tr>
<td>Interpersonal Relations &amp; Skills</td>
<td>Environmental Trends &amp; Implications</td>
<td>Adaptability</td>
<td>Change Management</td>
<td>R&amp;D/Engineer.</td>
</tr>
<tr>
<td>Communications</td>
<td>Relationship Building</td>
<td>Problem Solving</td>
<td>Take Initiative</td>
<td>Public Affairs</td>
</tr>
<tr>
<td>Mentoring</td>
<td></td>
<td>Decision Making/ Judgment</td>
<td>Decisiveness</td>
<td>Cust. Service</td>
</tr>
<tr>
<td>Diversity</td>
<td></td>
<td>Analytical</td>
<td>Stress Management</td>
<td>Treasury</td>
</tr>
<tr>
<td>Risk Taker</td>
<td></td>
<td>Conceptual</td>
<td>Performance Management</td>
<td>International</td>
</tr>
<tr>
<td>Integrity</td>
<td></td>
<td></td>
<td>Common Sense</td>
<td>Sales</td>
</tr>
</tbody>
</table>

Summary of Operating Characteristics Present in World Class Teams

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear Purpose</td>
<td>The vision, mission, goal or task of the team has been defined and is now accepted by everyone. There is an action plan.</td>
</tr>
<tr>
<td>Informality</td>
<td>The climate tends to be informal, comfortable, and relaxed. There are no obvious tensions or signs of boredom.</td>
</tr>
<tr>
<td>Participation</td>
<td>There is much discussion and everyone is encouraged to participate.</td>
</tr>
<tr>
<td>Listening</td>
<td>The members use effective listening techniques such as questioning, paraphrasing and summarizing to get ideas out.</td>
</tr>
<tr>
<td>Civilized Disagreement</td>
<td>There is disagreement, but the team is comfortable with this and shows no signs of avoiding, smoothing over, or suppressing conflict.</td>
</tr>
<tr>
<td>Consensus and Fast Decisions</td>
<td>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.</td>
</tr>
<tr>
<td>Open communication</td>
<td>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.</td>
</tr>
<tr>
<td>Clear Roles and Work Assignments</td>
<td>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.</td>
</tr>
<tr>
<td>Shared Leadership</td>
<td>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.</td>
</tr>
<tr>
<td>External Relations</td>
<td>The team spends time developing key outside relationships, mobilizing resources, and building credibility with important players in other parts of the organization.</td>
</tr>
<tr>
<td>Style and Cultural Diversity</td>
<td>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.</td>
</tr>
<tr>
<td>Self-Assessment</td>
<td>Periodically, the team steps back to examine how well it is functioning, examines what may be interfering with its effectiveness and takes corrective actions.</td>
</tr>
<tr>
<td>Use of Technology</td>
<td>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.</td>
</tr>
</tbody>
</table>
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 baseline
  - 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

---

**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

Appendix 1: Managing Change and Transformation

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.
Appendix 1: Managing Change and Transformation

**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

• 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
Appendix 1: Managing Change and Transformation

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)

<table>
<thead>
<tr>
<th>Control Activities</th>
<th>Purpose of Control Activities</th>
<th>Composite</th>
<th>Detection</th>
<th>Validation</th>
<th>Authorization &amp; Delegation</th>
<th>Restoration &amp; Backup</th>
<th>Control Type</th>
<th>Frequency of Occurrence</th>
<th>Preventive / Detective</th>
<th>Control Type 2</th>
<th>Management Operational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle</td>
<td>Sub-Cycle</td>
<td>Control Objective</td>
<td>Control Activities</td>
<td>Activity</td>
<td>Description</td>
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</tr>
<tr>
<td>VIII</td>
<td>VIII.1</td>
<td>System Development Life cycle</td>
<td>VIII.1.1</td>
<td>A formal systems development methodology is in place to guide the organization through the systems development life cycle.</td>
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<td></td>
<td>VIII.1.2</td>
<td>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)</td>
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<td>VIII.1.3</td>
<td>Formal and documented unit, integration, and user acceptance testing is required prior to implementation.</td>
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<td>VIII.1.4</td>
<td>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.</td>
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<td>VIII.1.5</td>
<td>Management approval of the readiness of the business requirements and corresponding test results and data conversion (if applicable) is required prior to implementation.</td>
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<td>VIII.1.6</td>
<td>Program change management tools (such as Visual Source Safe or Excel logs) are utilized to track software changes and to segregate the development and production environments.</td>
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<th>Frequency of Occurrence</th>
<th>Preventive / Detective</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIII. Information Technology</td>
<td>VIII.2 Change Management</td>
<td>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.</td>
<td></td>
<td>Preventive</td>
<td>Q,M,W,D</td>
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<td></td>
<td></td>
<td>VIII.2.2 Formal and documented unit, integration, and user acceptance testing is required and must be approved by Mgt prior to implementation.</td>
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<td>Preventive</td>
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<td></td>
<td></td>
<td>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.</td>
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<td>Preventive</td>
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<td>X</td>
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<tr>
<td></td>
<td></td>
<td>VIII.2.4 Program change management tools (such as Visual Source Safe or Excel logs) are utilized to track software changes and to segregate the development and production environments.</td>
<td></td>
<td>Preventive</td>
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### Data and Systems Backup and Recovery

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</tr>
</thead>
<tbody>
<tr>
<td>VIII. Information Technology</td>
<td>VIII.3 Data and Systems Backup and Recovery</td>
<td>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.</td>
<td></td>
<td>Preventive</td>
<td>Q,M,W,D</td>
<td>F</td>
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<td></td>
<td></td>
<td>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.</td>
<td></td>
<td>Preventive</td>
<td></td>
<td>F</td>
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<tr>
<td></td>
<td></td>
<td>VIII.3.3 Access to backup media are restricted to authorized personnel.</td>
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<td>Preventive</td>
<td></td>
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<td></td>
<td></td>
<td>VIII.3.4 Testing of data restoration procedures is performed on a periodic basis.</td>
<td></td>
<td>Preventive</td>
<td></td>
<td>X</td>
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</tr>
</tbody>
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<tbody>
<tr>
<td>VIII</td>
<td>Sub-Cycle</td>
<td>VIII.5</td>
<td>Data and Systems Backup and Recovery</td>
<td></td>
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<tr>
<td>VIII.4</td>
<td>Controls provide reasonable assurance that data centers are adequately protected from environmental hazards.</td>
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<td>VIII.4.1</td>
<td>Environmental factors such as temperature, humidity, and water leaks are monitored by automated monitoring tools which alert the appropriate individuals of problems.</td>
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<td>VIII.4.2</td>
<td>Fire suppression sensors and systems are installed within the data centers.</td>
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<tr>
<td>VIII.4.3</td>
<td>Uninterruptible Power Supply (UPS) or emergency generators are in place and automatically start in the event of a power outage.</td>
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<td>VIII.4.4</td>
<td>Preventive maintenance of environmental control systems is performed.</td>
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</tr>
<tr>
<td>VIII.5</td>
<td>Control Objective</td>
<td>VIII.5.1</td>
<td>A disaster recovery planning process is in place to identify potential disaster risks and document formal recovery procedures and prioritization.</td>
<td>X</td>
<td>O</td>
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<tr>
<td>VIII.5.2</td>
<td>Management periodically reviews and formally approves the plan.</td>
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<td>VIII.5.3</td>
<td>The plan identifies and prioritizes critical applications to be recovered, and timeframes for recovery have been documented.</td>
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<td>VIII.5.4</td>
<td>The plan includes the equipment requirements and configuration standards needed to support the recovery of critical applications and data.</td>
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<td>VIII.5.5</td>
<td>The plan includes formal identification of key personnel and specific functions to be performed by management, IT personnel and external vendors.</td>
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<td>VIII.5.6</td>
<td>The disaster recovery plan is tested periodically for critical systems and that external vendors were included in the plan.</td>
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<td>X</td>
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</tr>
</thead>
<tbody>
<tr>
<td>VIII</td>
<td>VIII.6</td>
<td>Logical Access</td>
<td>VIII.6.1 Users, developer and Security Administrator access to business systems is determined based on job role, responsibilities and written management approval for adding and/or modifying user access.</td>
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<td></td>
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<td>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.</td>
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<td>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.</td>
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<td>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.</td>
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<td>VIII.6.5 Networks have installed UTC approved and managed barriers (i.e. firewalls) to prevent unauthorized outside penetration.</td>
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<td>VIII.6.6 Wide Area Networks are monitored and potential security issues are identified and investigated to resolution.</td>
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<td>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.</td>
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<td>VIII.6.8 Procedures for remote operations are in place to ensure that access is properly secured and managed.</td>
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<td>VIII.6.9 A process exists to ensure that all critical software is appropriately licensed.</td>
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</thead>
<tbody>
<tr>
<td>VIII</td>
<td>VIII.7</td>
<td>Physical Access</td>
<td>VIII.7.1 Access to computer operations and data center facilities is physically secured and logs (electronic or paper based) of user access exist.</td>
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<td></td>
<td>VIII.7.2 Access is granted only upon receipt of a formal request from an authorized approver. A list of authorized approvers is maintained.</td>
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<td></td>
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<td></td>
<td>VIII.7.3 Server terminals automatically lock or logoff a user after a period of inactivity.</td>
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<td></td>
<td>VIII.7.4 Periodic reviews of all individuals with access to data center facilities are performed.</td>
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<td></td>
<td>VIII.7.5 Facilities are alarmed and monitored.</td>
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<tbody>
<tr>
<td>VII.8 Production/Batch Processing</td>
<td>VIII.8.1 System capacity and performance is monitored to ensure system availability and application response times are consistent with the business requirements.</td>
<td>X</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>VII.8 Production/Batch Processing</td>
<td>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.</td>
<td>X</td>
<td>X</td>
<td>F</td>
</tr>
<tr>
<td>VII.8 Production/Batch Processing</td>
<td>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.</td>
<td>X</td>
<td>X</td>
<td>F</td>
</tr>
<tr>
<td>VII.8 Production/Batch Processing</td>
<td>VIII.8.4 Formal policies and emergency access controls are utilized when migrating non scheduled changes to production programs/data.</td>
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<td>F</td>
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</tr>
<tr>
<td>VII.9 Organization and management</td>
<td>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.</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VII.9 Organization and management</td>
<td>VIII.9.2 An IT Strategic planning process exist to support the business units medium and long term assets.</td>
<td>O</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VII.9 Organization and management</td>
<td>VIII.9.3 Appropriate expense budgeting and monitoring for IT expenditures is reviewed by management.</td>
<td>O</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 2

Sarbanes-Oxley Controls Template for a Manufacturing Company (Illustrative Example)

<table>
<thead>
<tr>
<th>Control Activities</th>
<th>Purpose of Control Activities</th>
<th>Preventive / Detective</th>
<th>Control Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIII. Information Technology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIII.10 Organization and management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIII.10 Controls provide reasonable assurance that outsourced resources maintain adequate levels of IT controls and service levels. (UTC will cover CSC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>VIII.10.2 Contracts clearly define the responsibilities and obligations of both the Business Unit and the third party service provider.</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>VIII.10.4 IT Management obtains and reviews periodic reporting or key performance indicators or service level agreements (SLA’s) and formally addresses service issues and monitors through to resolution.</td>
<td></td>
<td>O</td>
<td></td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Model Focus</th>
<th>Model Name</th>
<th>Author</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT Governance – General</td>
<td>COBIT; Decisions Rights; Generic Framework for Information Management</td>
<td>IT Governance Institute, 2003; Weill and Ross, 2004; University of Holland,</td>
<td>A framework which links IT processes to four domains (plan/organize; acquire/implement; delivery; support); Who influences and makes IT decisions</td>
</tr>
<tr>
<td>Project Management (PM)</td>
<td>PMBOK – PM Book of Knowledge</td>
<td>Project Management Institute, 2004</td>
<td>Defines 9 knowledge &amp; 5 process areas of PM</td>
</tr>
<tr>
<td></td>
<td>OPM3 (Organizational PM Maturity Model)</td>
<td></td>
<td>Tool to help organizations self assess their PM Maturity</td>
</tr>
<tr>
<td></td>
<td>PMMM – PM Maturity Model</td>
<td>Crawford, 2002</td>
<td>Maps SEI’s CMMI (see below) model to PMBOK to provide a PM maturity roadmap based on stages of maturity</td>
</tr>
<tr>
<td></td>
<td>Prince2</td>
<td>CCTA (Central Computer &amp; Telecomm. Agency (UK Government), 1998 (Now known as OGC – Office of Government Commerce)</td>
<td>A PM methodology that focuses on the business case</td>
</tr>
<tr>
<td></td>
<td>IT investment management</td>
<td>General Accounting Office (U.S. Federal Government)</td>
<td>Helps to evaluate and assess and select and prioritize IT investments</td>
</tr>
</tbody>
</table>
## 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)

<table>
<thead>
<tr>
<th>Model Focus</th>
<th>Model Name</th>
<th>Author</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Systems/Software Development</strong></td>
<td>SSADM (Structured Systems &amp; Design Method)</td>
<td>CCTA (Central Computer &amp; Telecomm. Agency (UK Government - OGC)</td>
<td>Structured methodology to develop systems</td>
</tr>
<tr>
<td></td>
<td>DSDM (Dynamic Systems Development Method)</td>
<td>The DSDM Consortium</td>
<td>Used as a RAD (Rapid Application Development) Methodology</td>
</tr>
<tr>
<td><strong>Quality &amp; Security</strong></td>
<td>Six Sigma; Lean; Baldrige Quality Award</td>
<td>Motorola with GE popularizing the concept; Breyfogle, et. al.</td>
<td>Framework used to continuously improve processes and reduce errors or defects (can be applied to any process)</td>
</tr>
<tr>
<td></td>
<td>ISO 9001 (Quality)</td>
<td>International Standards Organization</td>
<td>Focus on quality management policies and practices of an enterprise</td>
</tr>
<tr>
<td></td>
<td>ISO 17799 and 27001</td>
<td>International Standards Organization</td>
<td>IT security frameworks and models</td>
</tr>
</tbody>
</table>

### 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; Cattucci; 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)

<table>
<thead>
<tr>
<th>Model Focus</th>
<th>Model Name</th>
<th>Author</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory Compliance</td>
<td>Sarbanes Oxley Act (SOX) of 2002 – All public US companies</td>
<td>US Congress – HR 3763</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>FDA, FDIC, HIPPA, SEC Others</td>
<td>Various government agencies</td>
<td>Various government agencies that apply to either all or select industries</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outsourcing and Vendor</td>
<td>Outsourcing Frameworks – OPBOK; eSCM (eSourcing Capability Models for service providers and client organizations)</td>
<td>Palvia; Casale; Brown, et.</td>
<td>Various frameworks and guidelines on how to outsource IT and manage vendors.</td>
</tr>
<tr>
<td>Management</td>
<td></td>
<td>al; eSCM, IAOP</td>
<td></td>
</tr>
<tr>
<td>Voice of the Customer VOC)</td>
<td>Kano</td>
<td>Kano</td>
<td>Frameworks to capture VOC and customer requirements</td>
</tr>
</tbody>
</table>