

A Guide to Project Management Auditing, Assessments and Recommendations

Certified International Project Auditor (CIPA)

Essential Tips and Guidebook for Undertaking the
CIPA certification

**THE INTERNATIONAL ASSOCIATION OF PROJECT AND PROGRAM
MANAGEMENT (IAPPM)**

New Jersey / Hong Kong / Amman / Texas / Singapore / London / Ottawa

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This book was set in Times New Roman and printed and bound by .XXXXXX XXXXXXXXXXXX. The cover was printed by .XXXXXXXXXXXXXXXXXXXX.

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ISBN 0-

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

Document History

Revision No.	Contact	Action	Date	Status as of Date
0.01	IAPPM Editorial		3Feb08	Approved

Disclaimer

The topics developed for this CIPA Guide have been prepared for the professional development of IAPPM members and others in the Project Audit and Control community. Although we trust that they will be useful for that purpose, IAPPM cannot warrant that the use of this material would be adequate to discharge the legal or professional liability of members in the conduct of their practices.

Contents

1	Executive Summary.....	7
1.1	The International Association for Project & Program Management.....	7
1.2	Purpose of the Guidebook	8
1.3	Evaluation Criteria	9
1.4	Project Management Leading Organizational Change	10
1.5	Uncertainty and Risk.....	13
1.6	Tools and Techniques Common to Project Management Guides/Programs.....	16
1.7	Team Members with Multiple Project and Bosses	17
1.8	Aim of the CIPA	21
1.9	Our Audience for CIPA Certification.....	21
1.10	CIPA Re-certification Criteria	22
1.11	CIPA Sources.....	22
1.12	Benefit of Audits and Assessments.....	22
1.13	The Importance of Project Audits	23
1.14	The Audit Construct.....	23
1.15	Preparing for the Project Audit	24
1.16	Definition a Project Audit	26
2	CoBiT Framework.....	27
2.1	SDLC	27
3	Project Management Offices	28
3.1	Project management Offices (PMO) Roles on Audits	28
4	Project Management	30
4.1	Adaptive Project Framework (APF).....	30
4.2	Product and Cycle-time Excellence – PACE.....	31
4.3	Extreme Project Management (or xPM).....	34
4.4	Audit Best Practices in Corporations.....	37
5	Project Audits	38
5.1	Troubled Projects or Programs	38
5.2	Project Audit Methodology	38
5.3	Obtaining Executive Buy-in for Conducting Audits	38
5.4	CIPA Strategy	38
5.5	Audit or Assessment Best Practices	39
6	Project Assessments.....	41
6.1	Difference between an Audit and an Assessment.....	41
6.2	When to Assess an Organization.....	41
6.3	Format for an Assessment	41
6.4	Who to Invite on an Assessment	41
6.5	Post Assessment Report	42
6.6	Who the Assessment Report is Issued To.....	42
7	Classification of Audits	43

7.1	Assessing Companies.....	43
7.2	Internal Control Reviews.....	43
7.3	Pre-implementation Reviews	43
7.4	Preliminary Assessments.....	43
7.5	Contracted 3 rd party Substantive Work	43
7.6	Training.....	43
7.7	Other	43
7.8	Contract Reviews	43
7.9	Confidential Reviews for Management.....	44
8	Audit Process.....	45
8.1	AUDIT RISK ASSESSMENT	45
8.2	Uncertainty and Risk	45
8.3	PLANNING	48
8.4	FIELDWORK	48
8.5	AUDIT REPORT	48
9	Project & Program Management Audits	49
9.1	During the Project Life-Cycle	49
9.2	Post Project Audits	49
9.3	Realising Business Benefits	50
9.4	JAQ's	50
9.5	Conducting the JAQ sessions	50
9.6	Conducting Initial Review of the Project or Program	51
10	How to Establish an Audit team.....	59
10.1	Skills Required for Staff	59
10.2	Training the Audit Team.....	59
11	Engaging the Audit Team	60
11.1	Budgeting for the Audit	60
11.2	Pre-Audit Checklist.....	60
11.3	Communications	60
11.4	Travel.....	60
11.5	Geographical Barriers and Cultures	60
12	Project Audits Governance.....	61
12.1	Governance around Project Audits	61
12.2	Audit Governance Team	61
12.3	Types of Recommendation to Expect from Audit team	61
12.4	Audit Meetings.....	61
13	Project Recommendations and Best Practices.....	62
13.1	Team Building	62
13.2	Group Awareness of Issues	62
13.3	Techniques for Improving Projects	62
14	Conclusion	63
14.1	Project Manager Responsibilities.....	63
14.2	Program Manager Responsibilities	63
14.3	PMO Responsibilities	64

14.4 Executive Sponsorship Responsibilities..... 64

14.5 Steering Committee Governance 64

14.6 Audit Manager Conclusion 64

15 FAQs 65

15.1 Audit Checklist for Projects, Programs & Portfolios 65

16 CIPA Glossary 69

1 Executive Summary

Since 1 May 1998, public limited companies in Germany are obliged by law (Gesetz zur Kontrolle und Transparenz im Unternehmensbereich) to implement a monitoring system that enables them to perceive in advance developments that could jeopardize the continuity of the company. Thereby, for the first time, German legislators explicitly requested all enterprises systematically to record all business risks and to manage the identified threats. Project and Programs are therefore also subject to some form of audit.

The scope of this guide is also expanded to include all the US and international scandals and the US requirements for the Sarbanes-Oxley Act of 2002 (Pub. L. No. 107-204, 116 Stat. 745, also known as the Public Company Accounting Reform and Investor Protection Act of 2002 and commonly called SOX or Sarbox; July 30, 2002) is a controversial United States federal law passed in response to a number of major corporate and accounting scandals including those affecting Enron, Tyco International, Peregrine Systems and WorldCom (recently MCI and now currently part of Verizon Business). These scandals resulted in a decline of public trust in accounting and reporting practices. Named after sponsors Senator Paul Sarbanes (D-Md.) and Representative Michael G. Oxley (R-Oh.), the Act was approved by the House by a vote of 423-3 and by the Senate 99-0. The legislation is wide ranging and establishes new or enhanced standards for all U.S. public company boards, management, and public accounting firms. The Act contains 11 titles, or sections, ranging from additional Corporate Board responsibilities to criminal penalties, and requires the Securities and Exchange Commission (SEC) to implement rulings on requirements to comply with the new law. Supporters of these reforms believe the legislation was necessary and useful while critics believe it does more economic damage than it prevents. However, those who have studied the law point out how modest the Act is in comparison to the heavy rhetoric accompanying its passage and adoption.

The first and most important part of the Act establishes a new quasi-public agency, the Public Company Accounting Oversight Board, which is charged with overseeing, regulating, inspecting, and disciplining accounting firms in their roles as auditors of public companies. The Act also covers issues such as auditor independence, corporate governance and enhanced financial disclosure. It is considered by some as one of the most significant changes to United States securities laws since the New Deal in the 1930s.

1.1 The International Association for Project & Program Management

With more than 2,500 members in over 40 countries, the International Association for Project & Program Management (IAPPM)[™] is a recognized global leader in project, program and portfolio management, training, content. Founded in 2003, IAPPM sponsors international certification, and administers the globally respected CIPA (Certified International Project Auditor[™]) designation, and develops globally applicable project (PM) auditing and control standards.

1.2 Purpose of the Guidebook

The IAPPM recognizes that, to attain its vision of recognized global leadership in project, program and portfolio management, it must provide products, services and benefits to the wide range of project professionals who work to ensure reliable information and the systems that support it. This includes the world of Auditing as well. The IAPPM's constituency includes professionals and practitioners-includes Project Auditors, Business Analysts, academics, consultants, internal auditors, CIOs, external auditors, CEOs and a host of other key stakeholders. The association strives to provide the elements needed to this professional discipline: original research, practical education, career-enhancing certification, industry-leading standards and best practices, a network of like-minded colleagues, professional resources and technical/managerial publications. We believe we can best do so by providing tools, techniques, information, support and benefits that help them do their job better.

The Project & Program Manager Audit guideline was essentially devised to be used by individuals for two purposes (1) **for obtaining a better understanding on Project management Audits and Assessments** and (2) also **to assist with the development of project and program management auditors out in the field**. The content should be applicable and practical success factors in making everyday projects work. All levels of business leaders and managers would learn from reading this guideline. In particular, we believe this guideline will benefit the following types of individuals:

- You are an experienced business executive, following corporate policy to the very letter, constrained by your normal duties and responsibilities and wanting to ensure past mistakes are not repeated again.
- You have had some setbacks by following old outdated project/program management trends within the organization and they are getting you into trouble.
- You are an academic or student wishing to dabble in the way audits should be setup, conducted and managed.
- You are interested in reading something totally fresh and interesting.
- You are into creating a project audit team or process.

The sections set out in the guide are all coupled in that they all focus on the same broad subject: project, program and portfolio management audits. As a reader of this CIPA guide, it is very important to remember these key areas moving forward. This guideline originated from seminars and presentations through our interactions trying to figure out when to audit a troubled project and what to do based on the outcomes of these audits. All the chapters are related; independent yet all connected.

You might add systems theory here or a brief definition. Set implies that the units have some common properties. These common properties are essential if the units are going to interact or to have relationships. The state of each unit is constrained by, conditioned by, or dependent on the state of the other units (Miller, 1978, p. 26). And, A system is defined as "a set of elements or components that work together in relationships for the overall good and objective of the

whole" (Haines, 1999, p.1). To wit, the goal of systems theory "is to find the most general conceptual framework in which a scientific theory or a technological problem can be placed without losing the essential features of the theory or the problem (as reported by Haines, 1998, p. 7).

1. Haines, S. G. (1998). *The manager's pocket guide to systems thinking and learning*. Amherst, MA 01002: HRD Press.
2. Haines, S. G. (1999). *Systems thinking and learning: From chaos to complexity to elegant simplicity*. San Diego, CA 92110: Centre for Strategic Management.
3. Miller, E. J. (1978). *Systems of Organization*. London: Tavistock Publications.

This guideline is intended to be of significant interest to both new and practicing project and program managers, executives; academics or students who are primarily interested in identifying and correcting potential problems in everyday project deployments. To avoid any surprise on your part, let me state that our intention with this guide was not to delve into the great depths of audits, but rather learn from these basics and trends happening at many great companies – and allow us to adjust our thinking and mannerisms – to display uniqueness, creative wonder and the ability to add the project value to the organization. – Need to be reworded.

1.3 Evaluation Criteria

As auditor you will be tasked to evaluate a project or a program, which failed. You must evaluate the strategy or criteria used by the company when they established their program management practice. There are five popular methods for evaluating and establishing a program or portfolio strategy. They are:

- 1) Strategic alignment model;
- 2) Boston Consulting Group/Services Matrix;
- 3) Project Distribution Matrix;
- 4) Growth versus Survival Model; and,
- 5) Project Investment categories (Wysocki & McGary, 2003, p. 358).

All are dependent on staff training, available money, and resources but each has its own focus. The strategic alignment model aligns projects with the organizational strategy approved by the board of directors with regard to mission, goals, objectives, tactics, and resources allocated while the Boston Consulting Group Products/Services matrix defines four categories of products/services based on their growth rate and competitive position: cash cows, dogs, stars, and questions.

The Project Distribution Matrix is threefold: dealing with strategic, tactical, and operational projects with new, enhancements to existing systems or products, and/or maintenance projects. Using a matrix allows executives and managers to know where the organization is moving and whether they are in a growth or maintenance mode with their products and/or services. The Growth versus Survival Model depends on the companies need for growth within the market if there is money, staffing, and resources to support a project for growth, while survival projects are one that must be done because without them, a company will go out of business. And, the Project Investment separates all projects into a specific category: infrastructure, maintenance, a new product or research item to support existing businesses. All

have their advantages and disadvantages depending on the level of trained staff and organizational structure.

If an organization has a specific project management office (PMO), then the Boston Consulting Group Product/Services Matrix or the strategic Alignment Model should be considered for program/portfolio management system. To wit, the Project Distribution matrix, Growth versus Survival Model, or Project Investment categories are appropriate when the resources are allocated based on operational or tactical levels. Each organization should determine who completes the basic project evaluation. In some cases organizations require the individual proposing the project to complete the evaluation and basic business case to move the project forward, while other organizations have a specific individual or office that completes the research and recommends which projects are moved forward or not. In the latter case, the individual or office will determine the rank. Most often the methods for prioritizing include Forced Ranking; Q-sort; Must-haves, Should-Haves, Nice-to-Haves; Criteria weighting; Paired Comparisons; and/or Risk/Benefit.

1.4 Project Management Leading Organizational Change

Change can be exciting or threatening situation to organizations due to rapidly moving local, national, and international competition (Friedman, 2005). Strategic decisions or new ideas often lead to new product development or new turnkey projects or initiatives. The overall intent is to be more profitable and competitive. When these changes do occur, executives turn to the PMO or project management function for leadership and managing of these projects. Conditions leading up to change need to be well thought out and structured in such a way as to provide information and training for all employees, managers, and stakeholders in a non-threatening environment. Englund, Graham, & Dinsmore (2003) note that:

“the enterprise approach to managing projects is a managerial philosophy based on the principle that company goals are achievable through a web of simultaneous projects that call for a systemic approach and includes corporate strategy projects, operational improvement, and organizational transformation as well as traditional development projects” (p. 7).

It is perhaps this element that needs to be assessed by the auditor. Many times the incorrect Project Manager is assigned to a project, who lacks the interpersonal skills or business relationship skills to see the project succeed. It is only through an interview with the actual PM and his/her peers, that one can begin to determine how effective the PM is. Many project managers are often assigned to a project or program purely because of their availability to take on the assignment. Thus, many project managers fail because they are unfamiliar with project management, or do not have any essential process guides to follow, and/or were unfamiliar with all the resources necessary to complete the project.

Focusing on the organizations market space and customers must not be overlooked. The auditor should ask himself or herself what the end goal of the project was and should achieve. If it appears disjointed from its initial objectives, then there is a problem. Project management must focus on the entire life cycle on the project or product. When projects focus on the end user and embraces a complete life cycle, can one begin to expect a successful outcome. Because of complexity and constant re-organization, individuals often change positions on a frequent

basis. As auditor, you should request an organizational chart for the respective project departments and ask who is responsible for managing these projects or programs. Please note this evidence to your evidence log. Many leading Fortune 1000 companies cannot readily provide this material offhand, and is often outdated. The main factors of failure to change and project management failure include perhaps the following:

- Failure in implementing a Project Management Office (PMO),
- Lack of support from executives,
- Underestimating the scope of organizational change,
- Lack of methodology and processes need to institute project management,
- Insufficient training efforts to develop project managers,
- Poor timing and or scheduling to meet milestones and go-live activities,
- And inadequate management of the change process.

Many changes are due to external forces and thus are unplanned and negatively affect the organization. This is the main reason that so many individuals perceive change as negative. A successful company can find itself in financial desperation when they ignore customers and wait on financial reports to demonstrate past performance of customer choices. By instituting enterprise project management, each project institutes change, trains employees in new processes, and allows the organization to change slowly but on a regular schedule to meet customer needs.

Solving small internal issues through project deployment such as computer training, communication methods such as e-mail, employee boards, project teams, employees begin to communicate more regularly and have a specific method to deal with issues that arise. Changes in the last decade mainly due to technology and mobility have changed 80% of work from repeat work to process work. Without planned organizational change, organizations are going bankrupt. Planned change specifically means that organizations are conscious of the change processes, a specific individual has been identified to lead the change, and there are specific goals and a specific timeline. The main roles in implementing change include sponsors, change agents, targets, and advocates. Thus, change itself is a program that manages projects throughout the organization. Change begins with a group of dedicated advocates within the organization that have enough clout or power whether through respect or intimidation personally and/or professionally with all levels of employees to institute change. Organizational change is not reorganization, although it is often confused as the same thing. Reorganizations generally move individuals and responsibilities, but the core activities continue in the same manner with the same methods and materials producing the same products and services. Some organizations find it helpful to begin with a small group and slowly change each group within the organization until all are using the new methods and supporting the new products and services.

Kurt Lewin formulated a three-step process for change: unfreeze, change, and then refreeze; however, Englund, Graham, & Dinsmore (2003) suggest a different three-phase approach for project management: creating conditions for change, making change happen, making change stick (p. 16). Employees need to the reason for change before they will agree to change. Particularly if top management demonstrates the need and is behind the changes, it is easier for employees to change. Instituting change must occur not only through information

about the issues and changes in e-mail and company newsletters, but through training programs noting the changes and methodologies to support the changes. Technology may or may not be a part of the changes. New behaviour will slowly change behaviour when change is accepted. It is not unusual that approximately one-third of the employees of an organization will not accept the change (Englund, Graham, & Dinsmore, 2003, p. 17). Employees who do not accept changes and do not leave on their own will need to be dealt with at some point by upper management. For example, the Ford Motors recently replaced its CEO because he did not behave in the designated manner by the board of directors.

Creating a sense of urgency for the change due to economic shifts and dangers in the external markets often helps employees change more quickly. Adding value and increasing the companies worth is another sense of urgency. Political issues that directly affect the business organizations ability to compete within the state or country is important. State policies often limit the types of businesses such as stem cell research is limited in many states, yet the biotechnological laboratories and nanotechnology centers that are so profitable for most cities and states conduct some form of stem cell research. Benchmarking current practices to denote change is imperative. Identifying individuals to describe the new corporation and monitor external change issues such as politics and research centers is important for the health of the organization.

Developing a vision and a strategy to accomplish the vision and then communicate the vision to all employees in the entire organization is imperative. Enlisting support at all levels will be important. Managers of departments will be important to the success of the communication methods. Additionally, training appropriate for all levels will also be important. Kennel (1996) notes:

“Educate the project management community first in order to build immediate credibility ... It is absolutely necessary that every associate who functions in the capacity of a project manager receive a complete curriculum of project management training ... As you move toward a projectized company, you must also provide training for all members of your corporation. This training begins with project management awareness education leading to very advanced program and international program management techniques and disciplines (p.6).

Often a new logo is instituted at the same time to help employees visualize the change. Often executives use a story to help promote the changes. It is imperative that this story is positive rather than negative. There will be enough negative feelings when the change begins and a negative story only reinforces employees' bad feelings. Obstacles to change include structures, skills, systems, and supervisors. Englund, Graham, & Dinsmore (2003) note that when negative talk is happening it is appropriate to remind employees of Graham's Third Law: “If you're not adding value, they won't value what you're adding” (p. 25). This is a last resort because it clearly indicates to employees that negative attitudes working against the change will be terminated. In the past, organizations created silos in which one division did not communicate with other divisions. Project management requires that divisions communicate often and regularly. Because the communication and coordination are new, training needs to incorporate these skills along with the project management skills. Additionally, systems need to be reengineered to support the new project management and supervisors need to be supportive of all the changes.

Project-Driven versus Non-Project Driven Organizations

Both construction and aerospace industries are driven by projects, their costs, and potential profit to the organization as a whole. Project driven organizations are more susceptible to recessions and can have a higher turn over rate due to the length of projects. However, in non-project driven organizations, projects may be more difficult to manage, as there is no systematic management method identified. Functional line managers may be a tad more difficult to work with as they are not used to their staff having responsibilities outside of their specific technical realm. Additionally, executives may not delegate enough authority for the project manager to carry out the decision making process, and some tasks may need to be outsourced because the organization is unable to develop a specific expertise within the needed time frame to complete the project. Auditors need to ensure the following:

- How well does the organization embrace Project Management?
- Is the PMO and its Project Managers empowered with the appropriate authority
- Determine if the company has conducted a project maturity assessment
- Interview the line managers to determine how they manage projects

When issues arise, it may cause personnel problems within the organization. It is important to understand that the change from non-project driven to project driven may take several years. For example, NCR's change to project management took five years to get the "snowball effect" (Kennel, 1996, p. 1) while AT&T noted they were still in the infant stages of change after five years (Schneidmuller & Balaban, 2000). When completing the final audit report, one of the topics to raise will be the observation of project maturity within the organization. Raise this topic with the audit manager/partner.

1.5 Uncertainty and Risk

While each project has a unique plan, schedule, and budget, there is still an amount of uncertainty and risk inherent with every project no matter what the circumstances are. An auditor will find special issues unique to each project, but should be focusing special attention to any internal control or processes lacking in the risk management area. Each project has inherent strengths and weaknesses as well threats and opportunities from both internal and external sources. Underperformance of team members and budget are both potential problems in every project. Because both of these issues are consistently items at risk, project managers tend to recognize these issues first and attempt to neutralize or identify a course of action to deal with each. However, there are other risks such as variability associated with estimates, uncertainty about the basis of estimates, uncertainty about design and logistics, uncertainty about objectives and priorities, and uncertainty about fundamental relationships between project parties (Chapman & Ward, 2003, p. 7). Additionally there are environmental issues that the organization or project team is not able to predict or control. For example, if this is a construction project, inquire about an environmental impact assessment report, or documentation that was gathered ahead of the project. By the time a project has been delayed, it is already costing the investors money). Consider all risks on the project. Project auditors can usually determine this by reviewing the following:

- Project risk management plan,

- Project Management Plan
- Project Risk Log
- Third Party vendor assessment or impact reports
- Executive briefs
- Sponsor review meetings of minutes

It is important to recognize that some uncertainty can be helpful to the organization if they are attempting to launch a product or service prior to a competitor launching the same or similar product or service. Risk Management Processes (RMPs) by Chapman and Ward (2003) define project risk as “the implications of uncertainty about the level of project performance achievable” (p. 12). Utilizing this definition denotes that risk management is built into the project planning and potential issues are identified by all team members whether they are internal or external to the organization. Base plans or target scenarios are created for the process. Many project managers believe their target scenario to be their timeline, their program evaluation and review technique (or PERT), or their Gantt chart. Contingency plans including supporting activity based plans to deal with each contingency can be placed upon the timeline, PERT, and/or Gantt chart, however, valuable time can be wasted if too many contingency plans are developed. Macro-risks are the aggregate issues for a large event while micro-risks are an event-by event basis (Kendrick, 2003, p. 3). Insurance is a macro-risk example of an organization or individual attempting to deal with the external unknown risk. Projects and product development deal with micro-risk. Managing risk helps manage the outcome. By evaluating each project and/or product with regard to its fit with the companies’ mission, objectives and overall strategy is imperative as a first step in managing risk. The next step is the changes in the overall industry and reviewing customer satisfaction with regard to current products and services alongside competitors who have similar products and services.

The benefit of managing risk is that projects are aligned with the corporation’s current and future objectives thus increasing the companies’ ability to compete in the global environment. Additional benefits include lower costs, chaotic management issues, consolidated vision for the future, project priority, management and shareholder support, increased communication, coordination, and control issues between and among employees and departments (Kendrick, 2003). By identifying a specific process and noting employees are more willing to identify issues before they become problems ultimately avoiding risk. Risk avoidance in a corporation by preventing issues from becoming problems is appropriate employee behaviour. Low risk projects or projects that deal with enhancements of current products or services may not receive priority and may receive a limited budget and team members that do not have as much training. High risk projects or projects that deal with new products and services which focus on a competitive response or are deemed necessary for a companies vitality within the industry may receive more time, larger budgets, and more highly trained individuals. The main determinant is to start by summarizing the amount and type of risk. For each identified item, the methodology for identifying the issues and the processes by which the team member, members, and/or team leader will deal with the issue. Issues for risk should be a regular topic at meetings.

Documentation must be kept to ensure clear thinking at each phase, along with clear communications, familiarization with issues as well as progress among all staff levels, a record of the processes undertaken as well as the decisions, knowledge, and acquisition of information

to ensure that if a problem arises, it can be corrected. Auditors are to request to view the project library or file or a complete softcopy version thereof ahead of time. Either or both qualitative and/or quantitative analysis can be undertaken of internal and external information to help the audit team ensure a proper audit. While estimates are only guesses, they help quantify progress, targets, and issues. The main reason to establish estimates is to manage risk. Risk efficiency is management of risk by meeting estimated timelines, budget, and specific markers identifying progress toward the specific goal. Each risk analysis should include the effects on the system and organization, existing system complexity and its issues, existing system knowledge, project definitions, project management structure, project systems resources, sponsorship commitment, and system sensitivity and visibility. The downside variability or risk is when one or more items falls below the expectation (Chapman & Ward, 2003). Each organization needs to determine what level of risk they will allow for each project. Higher levels of risk may be allowed when a project has a higher than average expected return on the investment of time and money. Risk management relates to the ability to diagnose the risk and develop changes to the project plan to deal with the issue, demonstrate the reasons for the changes, and execute the changes in an efficient manner to deal with the concern. Chapman defines this method as Synergistic Contingency Planning and Review Technique (or SCERT) (Chapman, 1979).

It is important to note that risk management allows an organization to search for opportunities both internally and externally. Additionally, it can identify areas for change that will not only help with the specific project, but help the entire organization. Risk analysis and efficiency help managers establish methods of identifying appropriate risks for individuals, teams, and groups within an organization which make the organization more efficient and more successful in fulfilling its mission, meeting shareholder expectations, as well as increasing customer satisfaction. Risk management often begins the change in an organization that has been unable to fulfil its mission, shareholder, and customer expectations to a market based management system meeting all of its goals and objectives. Risk management allows for employees to become familiar with speculative projects in a safe manner before the organization demands changes throughout the entire organization. The biggest risk is losing talented and trained individuals willing to take risks and keeping less talented and less trained individuals who do not willingly take risks thus entrenching the organization. All risks should be noted in the audit evidence log.

Project Recovery

When projects get derailed due to a critical item or items not being completed, team communication, or coordination issues, the project needs to be evaluated. The evaluation needs to determine whether the project is critical or not to the health of a division, its future, and the organizations health and future. Some projects fail due to lack of commitment to change among employees. Change can be difficult for many employees as the unknown and unfamiliar is intimidating. If the project is deemed critical, then executives will need to determine how to proceed. Education about the companies' future, industry changes, and company changes may need to take place. If education and training programs do not work, executives will need to determine if employees need to be moved to positions where they will no longer have any impact to critical projects or terminated. Once the project has been determined necessary and employees' commitment and work has been evaluated, a programmatic evaluation should take place.

Cagle (2003) defines a programmatic performance checklist as: 1) a statement of work (SOW); 2) specifications; 3) policies, plans, and processes; 4) organization; 5) teaming, alliances, and subcontracts; 6) materials; 7) personnel; 8) training; 9) data management; 10) quality; and, 11) final delivery (p. 180). Using a checklist to determine proper definitions, information, type, and quality is measured as well as the issues with personnel, training, and data management. Additional items such as items being realistic with appropriate time lengths are also evaluated. Multiple problems along the process may be found, throughout the process. Each problem requires its own resolution and while tempting to start with only critical items that will allow the project to stay on target, it is imperative that the first problem be dealt with and then each succeeding problem. If problems are not systematically dealt with, the project will likely have problems again.

Cagle (2003) notes the Quantum Improvement (QI) rule as being an extension of the 80/20 Rule by compounding the multipliers (p. 192). QI “assumes that the top 20 percent of the 80/20 Rule is nonlinear and projects that one percent of the problems cost (or return) 50 percent of the money” (p.192). Cagle summarizes that the most important items found during the recovery process should be added to each project so that the problem is prevented in the future or dealt with earlier so that it does not become a problem.

1.6 Tools and Techniques Common to Project Management Guides/Programs

Program Evaluation and Review Technique (or PERT), Graphical Evaluation and Review Techniques (or GERT), Synergistic Contingency Planning and Review Technique (SCERT), Gantt, and Microsoft Office Project 2003 are too common in some format to all project management guides and/or programs.

Program Evaluation and Review Technique (PERT)

The PERT system was developed in the 1950s by the Navy for their Polaris project which had more than 1,000 contractors. The PERT system was meant to help the Navy manage multiple contractors, reduce time, and therefore costs while keeping everyone on task. The PERT chart has multiple pages with tasks and sub-tasks listed in detail, all of which roll up to a milestone on the main page. Each node has a number so that the ending node has a higher number. The main steps in the PERT planning process are: 1) identify the specific activities and milestones; 2) determine the proper sequence of the activities; 3) construct a network diagram; 4) estimate the time required for each activity; 5) determine the critical path; and, 6) Update the PERT chart as the project progresses (NetMBA Business Knowledge Center, 2005, p. 1).

This model also addresses risk and uncertainty by dealing with the critical path. Each task is defined by the activities that need to be accomplished before the task is considered complete. Some tasks are more critical than others because they depend on each other. These tasks are determined to be critical and they are charted and analyzed to determine whether a project is on target. The Critical Path Method (or CPM) or Critical Path Analysis (or CPA) allows a visual perspective of progress while denoting the areas that are falling behind.

Graphical Evaluation and Review Technique (GERT)

GERT is a probabilistic model involving graphical representations of decision trees rooted in the Markov processes. GERT addresses tasks by time period, allowing for simple, complex, and repetitive tasks to be graphically displayed. Additionally, it allows issues to be identified and the response graphed noting all the different individuals and/or departments involved. Unlike PERT or Gantt charts GERT allows for time dependencies such as weather to be identified. To wit, industries like Space or Agriculture use GERT systems more often.

Synergistic Contingency Planning and Review Technique (SCERT)

Combining fault and event tree concepts for safety analysis, SCERT combined PERT and Gantt systems to identify uncertainty and its associated risk are located. SCERT models responses to each source of uncertainty and the issue after the response is deployed. Thus SCERT deals with the residual effect of combined responses to different sources. The SCERT process has four phases based on activity-based planning: 1) scope, 2) structure, 3) parameter; and, 4) manipulation (Chapman & Ward, 2003, p. 64). The more specific the design, the more efficient the system can be in determining an appropriate response to a projects uncertainty and/or risk issues, thus identifying solutions without actually risking time or money.

Gantt Chart

Gantt chart named after their creator Henry L. Gantt in 1917, an engineer and social scientist, responsible for planning, scheduling, coordinating, and tracking progress of projects developed a:

“horizontal axis representing the total time span of the project, broken down into increments and a vertical axis representing the tasks that make up the project. Horizontal bars of varying lengths represent the sequences, timing, and time span for each task.” (@task.com, 2005, p. 1).

Gantt charts allow for a visual representation of overlapping items as well as completion of tasks. A vertical line represents a date that a report is due. Unfortunately, a Gantt chart does not indicate tasks that are dependent on other tasks. To wit, one task that is behind schedule may impede progress on one or more other tasks being completed. Software, such as @Task can be used or simple graph paper depending on the complexity of the project and/or organizations needs to design a program nor an analytic program to analyze quantitative data to determine which product features customers prefer.

1.7 Team Members with Multiple Project and Bosses

Because organizations have reorganized, downsized, in the last few years and now focus on projects rather than process work, fewer individuals within the organization have the same skills. To wit, some individuals with specialized skills will work on multiple projects throughout the company at the same time, all of which may be in different phases and service different end customers. The most important issue is to identify priorities. Senior executives spend most of their time planning, organizing, and delegating while mid-level managers spend most of their

time communicating and dealing with routines. Communication between mid-level managers and/or project managers is different than it was several years ago. Today, with Blackberry's, iPod's, and cellular phones that receive and send e-mail, individuals can be contacted anywhere, at anytime. Thus, mid-level managers that are generally also project managers' must behave more like external entrepreneurs often termed entrepreneurs.

Conflicts will arise, especially if the individual works on multiple teams and multiple projects. Often the project responsible to the highest executive will often rank first, the project manager and team members must be aware that other projects deserve the same time and effort. While emergencies will arise, it is important to not manage by emergency and deal with items or issues before they become emergencies. It is imperative that project managers and team members resist the first come, first served axiom.

Controlling interruptions is imperative, even if that means reserving a conference room and working alone until the material is complete. Interruptions can be several types, and it is important to organize the interruptions by category. Nickerson (1999) recommends using a dot chart to note interruptions every 15 minutes. Time is different than a priority and it is important to manage both. Marking interruptions every 15 minutes notes where and when you are most likely to be interrupted and helps you determine which were appropriate and which were not appropriate. Additionally, Nickerson (1996) recommends adopting six standards or evaluation criteria to help control issues and interruptions:

- 1) to earn the number one priority slot, a task must have both the highest risk and the highest value, that is highest validity;
- 2) Urgency is secondary to validity. Urgency can break the tie only between tasks of the same risk and value level – tasks of equal consequence.
- 3) Clout is a secondary factor, even at the CEO level. Often, a competing task submitted from a lower level has greater consequence to the company at large than something submitted now by the CEO. If you remain silent you expose the CEO to blind risk. At least give the senior office a change to see what his request may be “bumping.” Then the CEO will exercise decision-making in short order.
- 4) Don't pit short-range tasks (rocks) against large long-range projects (boulders). Instead, equalize the tasks and intervals: Divide the large long-range project into shorter-interval tasks. Most people make the mistake of tackling many trivial, short-term tasks, hoping to clear a big chunk of time to executive the large project. But the big chunk of time never comes. Stop! Break the big task down into smaller tasks. Now, pit rocks against rocks. Consequences will help you see your choices. You'll vote for the tasks that connect with the big outcomes – no the ones with the quick low-merit results. You'll vote for the tasks that connect with the big outcomes-not the ones with the quick but low-merit results. You'll start seeing trivia for what they are – tasks to be farmed out or delegated to lower-cost performers.
- 5) Give the same scrutiny to prevention versus reaction. Regardless of task size or apparent urgency, focus on ultimate consequences; otherwise, you'll spend your professional life fighting small brush fires and never coming off the fire line. For example, if you put out a lot of small hillside brush fires but wait for a big chunk of time to plant acres of fire-retardant ground cover, you'll bet acres of mud slides with the next rain. You'll lurch from one type of emergency to another, exhausting yourself and never creating safety. Instead,

divide your replanting effort into smaller areas – with shorter time segments. Make gains across both fronts – fire fighting and ground cover planting. You will accomplish the fire-prevention effort, one small hillside at a time, and next summer you'll be called to fewer brush fires. Consequences are everything.

- 6) Let actions have their consequences. The requestor who causes chronic emergencies must pay a premium for emergency services rendered. The principle is blunt: If offenders pay nothing, they reform nothing. If you offer yourself as a rescuer, always doing “silent saves” for callous requesters, you are the only one taking the strain. So begin: Allow consequences to fall where they should. You need not force consequences, nature will take its course. Just don't take actions that muffle consequences for others. Warn, then stand firm (p.28 – 30).

Personality conflicts will occur and they will be an interruption for all team members involved. It is important that the project manager not play favourites or act as a volunteer therapist. The project is the priority and focusing on a personality conflict takes valuable time away from the project. Reducing role responsibilities and/or ambiguities is important. Sometimes conflict arises not out of genuine dislike for an individual but over role confusion and who is responsible for a specific part of a project. Additionally, while multiple tasks may be assigned to one individual on one team, that does not mean that they will have the same series of tasks on a subsequent team with the same project manager nor will they have the same series of tasks on a different team even if the products are similar. Different responsibilities and different project managers will require different workloads. While task load is inequitable, it is inevitable in some companies between and among departments due not only to the type of project, but also the available time a member may have and the perception of the team members' time and skill. The only solution for the latter issue is not to exacerbate the situation by complaining or labeling other team members' or a boss. Asking questions and providing timely, thorough work is the only response.

Multiple bosses and projects will increase stress. While some stress is good, too much can drain an individual of energy and be counterproductive. Nickerson (1999) recommends the following methods to reduce stress with multiple projects and bosses:

- 1) Reduce small hassles;
- 2) Openly inquire about imposed changes;
- 3) Try physical stress reduction tools;
- 4) Take a balanced view of stressful incidents;
- 5) Flag your schedule to anticipate and cover peak seasonal traffic;
- 6) Pursue coverage options: barter, budget swap, thawing the hiring freeze;
- 7) Prepare training tools long before you need to delegate a task;
- 8) Enlarge your professional network and continue your formal education;
- 9) Encourage your company to support work-life balance programs; and,
- 10) Make current life goals legitimate with visual reminders in your schedule (p.93-94).

While dealing with stress, it is important to also deal with the difficult boss in the changing environment. Additionally, it is important to deal with a difficult boss if he is verbally abusive or is harassing an individual team member. Respect even in the face of inappropriate language and behavior is imperative. Do not label individuals as ill or blame a boss for not getting work done nor discuss the issues amongst individuals outside those on the team as it may be seen as negative. In some cases, it is advantageous to have multiple bosses. More individuals in management positions may be aware of promotional opportunities and if layoffs are eminent, another boss will be aware of an individual's skill and may be willing to hire the individual in a collateral position, increasing job security. In the new project management corporate world instead of process oriented, team members are less likely to become bored with their job. Finally, team members are able to find mentors to help them professionally.

As organizations become more regulated and compliance starts becoming a mainstream word in organizations, they need to develop new ways to ensure all projects, programs in their pipeline or portfolio is meeting acceptable standards and norms. This is irrespective of the industry vertical and PMO's that many organizations find themselves creating. Our opinions and arguments for these current and future trends are not apologetic, rather spirited. We suspect that whether you agree or disagree with these the concept of auditing projects, you will find them interesting, illustrative, provocative, compelling and practical and see the need for why they are warranted. At minimum, we shall look at projects and programs in a whole new way. Our intention is to strategically analyze the current project management scenario whereby minimal projects are audited and establish a credible path to help organizations succeed. We believe that the arguments of colleagues and peers who claim that compliance and auditing are not needed, totally fallacious. We believe that having a company that is cognisant of the need to audit itself, will in itself, learn from past mistakes, take corrective actions and establish key controls around potential weaknesses, improving its approach and manner in which it manages the development of global products and services.

Although well intentioned, it is simply not good enough anymore for the future economy. If we are to maximize the benefits from the great big world of team dynamics, creative thought and individualism, we must offer a compelling logic; a logic of understanding as to how people can offer value. When you walk away from this guide, consider this – we may be right! Over the past decade, the Project and Program Management profession has undergone many changes. Some of these new trends, which have been the drivers of change in both the project and program management, are:

- New Technology Tools
- Virtual Teams
- Growing importance of PMOs (Project Management Organizations)
- Increasing significance of Politics in Projects
- Importance of various methodologies
- Importance of Process Excellence in Project Management
- Adherence to working with key documents and deliverables impacting project success

- Rise in compliance and project audits

As industries continually design and deploy projects, the ability to manage the project throughout its entire life cycle takes on ever-increasing importance. Ever more important is the role of a certified project auditor

1.8 Aim of the CIPA

The CIPA is the mark of excellence for a professional certification program and is valued and recognized by organizations on the individual who achieves it. With this accreditation, IAPPM anticipates that significant opportunities for CIPA will continue to open in the US and around the globe.

The vision the IAPPM have established for issuing the CIPA certifications is to influence the right business decisions by providing value added project internal control assurance and business process advisory services. The primary mission of the CIPA certification is to assist organizations and management in ensuring the existence of an effective system of financial and project management internal controls which safeguard those projects and programs information assets, thereby meeting quality, financial and delivery integrity.

In addition, once certified, it is the intent that CIPA members will be able to at a minimum perform contract compliance audits of selected project suppliers and customers for the recovery and protection of company assets. Operating company financial and information management systems and processes will be audited to ensure compliance with selected government and industry regulations. IAPPM will identify best practices and compliance measures, which will facilitate their adoption at a global level.

1.9 Our Audience for CIPA Certification

The following members are eligible for CIPA certification

- 001 – Students
- 002 – Academics
- 003 – Analysts
- 004 – Business Professionals
- 005 – Project Managers
- 006 – Program Managers
- 007 – Compliance & Risk Managers
- 008 – Audit Managers
- 009 – Quality Assurance Managers
- 010 – Leadership teams
- 011 – PMO Leaders
- 012 – Business Owners
- 013 - Consultants

1.10 CIPA Re-certification Criteria

The IAPPM has approved in its by-laws, that all CIPA certified members will remain current with their certification. The rationale is due to regulatory constraints and changes made or imposed at the international and regional level. Therefore, it is important that the CIPA will change too, as these new legal and compliance laws are introduced throughout the audit and compliance profession. We therefore require all prospective CIPA candidates renew their certification every five (5) years from the date of award. The following rules will govern re-certification:

- Cost of re-certification CIPA will be set forth on the IAPPM website
- CIPA members have to accrue 20 PDU points during their 5 year to maintain this certification. Please see our website for greater detail on what constitutes PDU points.
- Documentary evidence will be required for re-certification.

1.11 CIPA Sources

The following resources are recommended for further review.

- CoBIT 4.0
- SAS 70
- FDA
- The Federal Register
- Code of Federal regulations - <http://www.access.gpo.gov/nara/cfr/cfr-table-search.html>
- EUDRA - http://pharmacos.eudra.org/F2/site_map.htm
- Institute of Validation technology - <http://www.ivthome.com/>

1.12 Benefit of Audits and Assessments

The following benefits are evident when performing a project or program assessment or audit:

- Increases customer satisfaction
- Saves time and gives Corporate Internal Audit additional time to conduct value-added work
- Detects problems faster
- Can create cost savings
- Identifies important issues faster
- Provides tools for an Operating Company to assess their own control environment between audits (Self Assessment workshop)

our present strategy of staying within the realm of traditional auditing is based on two key factors. (1) First, the culture at IAPPM places a strong emphasis on the need to maintain the highest degree of ethical values, business conduct, and internal controls. As one of the guarantors of these values, the CIPA certification recognizes that our work must provide a high degree of assurance for top management at any organization. (2) Second, we need to focus our workshops where our core competency, such as project. Program, business analyst reviewing the effectiveness of internal controls, on projects in an organization. With a CIPA audit

members and few individuals with operational audit experience, we do not feel that we would add significant value by expanding into other areas.

1.13 The Importance of Project Audits

The audit team will be looking for a clear plan. What does this mean? Do Project Management guidelines exist within the organization? If so some time can be saved by using this historical data. It can give you a head start into how your company has managed projects in the past and the formulas that they use.

However if there is no documentation on hand or this process is new to your organization Then you have your work cut out for you. Let's get back to what the auditors are looking for. Your project plan must be traceable: once again documentation. That brings us to the Project Notebooks. When your notebooks are in order then the auditors are able to trace the work you have done. Sounds simple well maybe – sentence needs to be revised – it needs a verb. If you are opposed to printing you can save your notebook on a network server. I – needs to be removed. APA writing style recommends not using personal pronouns in professional writing. would also back up the information on a CD that can be stored off premise. This also insures your DR status in case of an emergency.

1.14 The Audit Construct

When you are in the market for a new home what's the first thing you look at? Location, Location, Location. Well when you are planning a new project the key word here is Documentation, Documentation, and Documentation. This can not be stressed enough. If your documentation is in order then the audit will not leave you awake at night. Remember we are not talking IRS here but none the less the audit of your project is very important. It is not really a pass or fail situation. It is relating what you did and how it was accomplished. To identify the risks of an IT project in good time, a systematic project risk management should be implemented with the inauguration of the project. The risk management process at project level can be divided into the following phases:

- Assessment of project risks
- Assessment of project controls
- Analysis of the remaining project risks
- Assessment and implementation of measures
- Permanent monitoring of project risks, controls and measures

Please consider using of the Evaluation Criteria as Project Auditors

The most popular methods for evaluating and establishing a program or portfolio strategy are: 1) strategic alignment model; 2) Boston Consulting Group/Services Matrix; 3) Project Distribution Matrix; 4) Growth versus Survival Model; and, 5) Project Investment categories (Wysocki & McGary, 2003, p. 358). All are dependent on staff training, available money, and resources but each has its own focus. The strategic alignment model aligns projects with the organizational strategy approved by the board of directors with regard to mission, goals, objectives, tactics, and resources allocated while the Boston Consulting Group

Products/Services matrix defines four categories of products/services based on their growth rate and competitive position: cash cows, dogs, stars, and questions. The Project Distribution Matrix is threefold: dealing with strategic, tactical, and operational projects with new, enhancements to existing systems or products, and/or maintenance projects.

Using a matrix allows executives and managers to know where the organization is moving and whether they are in a growth or maintenance mode with their products and/or services. The Growth versus Survival Model depends on the companies need for growth within the market if there is money, staffing, and resources to support a project for growth, while survival projects are one that must be done because without them, a company will go out of business. And, the Project Investment separates all projects into a specific category: infrastructure, maintenance, a new product or research item to support existing businesses.

All have their advantages and disadvantages depending on the level of trained staff and organizational structure. If an organization has a specific project management office, then the Boston Consulting Group Product/Services Matrix or the strategic Alignment Model should be considered for program/portfolio management system. To wit, the Project Distribution matrix, Growth versus Survival Model, or Project Investment categories are appropriate when the resources are allocated based on operational or tactical levels. Each organization should determine who completes the basic project evaluation. In some cases organizations require the individual proposing the project to complete the evaluation and basic business case to move the project forward, while other organizations have a specific individual or office that completes the research and recommends which projects are moved forward or not. In the latter case, the individual or office will determine the rank. Most often the methods for prioritizing include Forced Ranking; Q-sort; Must-haves, Should-Haves, Nice-to-Haves; Criteria weighting; Paired Comparisons; and/or Risk/Benefit.

1.15 Preparing for the Project Audit

Be prepared for an audit. This aim here is to ensure that the audit team receives full and uninterrupted access to all required information, people and facilities during their audit. This includes but is not limited to emails, documents that have been developed by the project team. Having everything at your fingertips makes it easy to answer questions when they arise. As an audit member, inquire to or move towards the methodology and project phases and deliverables. There are many phases of a project lifecycle and you will see variances for each. These phases could include; Initiation, Planning, Executing, Controlling, and Closing. When auditing the project, look for the project library or index for the project and interview the PM. Then you have a starting place. This will also make it easy for an auditor to find the information they may be looking for. Any lack of evidence will require further review.

Initiation Phase:

- Identify the main objective of the Project
- Determine project selection criteria
- Write the project charter
- Get sign-off of the project charter

Planning Phase:

- Create a Program Management Plan (PMP)
- Establish project deliverables
- Write a Scope Statement
- Start on a project budget
- Distinguish project activities
- Work out a schedule
- Determine special skills needed to complete planned tasks

Executing Phase:

- Put together the project team
- Administer and guide the project team
- Attain other project resources
- Conduct status review meetings
- Communicate project information
- Manage project development
- Implement quality assurance measures

Controlling Phase:

- Measure performance against the plan
- Take corrective action when procedures are out of the scope
- Evaluate the corrective measures
- Ensure that project developments according to the plan
- Review change requests

Closing Phase:

- Acquire acceptance of project deliverables
- Document lessons learned during the project
- Archiving project records
- Formalize the closing of the project
- Release project resources
- Write Final Status Report to include in the PMP

Right after you complete the Initiation Phase it is time to begin reviewing the actual project plan or Work Breakdown Structure (WBS). IAPPM would recommend that you look for this task list of project tasks and activities. This can be on paper or in softcopy format. The auditor should focus on how well defined the WBS is and how well tasks and dependencies have been scheduled. A Visio or flow diagram is also a good alternative. Ask the PM what software has been used to create the required documents. Microsoft Project is very generic and often found on many global teams. IAPPM recommend that Project Auditors familiarize them with this piece of software as it will be used periodically throughout the audit period.

1.16 Definition a Project Audit

IAPPM provides a clarification of a project audit as an independent assessment or analysis of a project, program or PMO to verify compliance to company and industry standards for project and program management. Newton's Telecom Dictionary similarly states that an audit is:

Audit To conduct an independent review and examination of system records.

However what is more enlightening is Newton's definition of:

Audit Trail A record of all the events that occur when users request and use specific resources. An audit trail gives you the ability to trace who did what and who was responsible. Now if that is not a pure definition of Project Management I don't know what is. I sincerely hope that this has been of some help in your quest to pull together the proper documents for your Project. Here's to a goods nights sleep.

2 CoBIT Framework

The COBIT *Framework* states, "It is management's responsibility to safeguard all the assets of the enterprise. To discharge this responsibility, as well as to achieve its expectations, management must establish an adequate system of internal control."

Performance measurement—How well is the IT function supporting business requirements?

IT control profiling—What IT processes are important? What are the critical success factors for control? Awareness—What are the risks of not achieving the objectives? Benchmarking—What do others do? How can results be measured and compared?

Standard S6 Performance of ISACA Audit Work states, "During the course of the audit, the IS auditor should obtain sufficient, reliable and relevant evidence to achieve the audit objectives. The audit findings and conclusions are to be supported by appropriate analysis and interpretation of this evidence."

Source: ISACA

2.1 SDLC

The SDLC or PMLC for any given project would depend on the chosen acquisition/development build mode for the project. The stated systems could be acquired/developed through various modes, which include:

- Custom development using internal resources (using analysts, engineers, developers, etc)
- Custom development using fully or partly outsourced resources located onsite or offsite (locally or in an offshore location)
- Vendor software packages implemented as-is with no customisation
- Vendor software packages customised to meet the specific requirements

At times, large complex applications may involve a combination of the above.

Some organisations use specific SDLC methodologies and processes, either custom- or vendor-developed. This varies from heavy construction, defense systems or information technology projects. These generally prescribe standard processes for different modes of acquisition with the facility to customise the process design for specific application systems. These may be supported by appropriate tools to manage the SDLC. In such cases, the SDLC would depend on the methodology/tool. As project auditor, recognize the need that any project must have a comprehensive methodology and that parts have not been ignored or omitted. Cross-reference your findings with the PM.

3 Project Management Offices

3.1 Project management Offices (PMO) Roles on Audits

A rising trend in Project Management is the importance of the Project Management Organization (PMO). In recent years, companies have begun to implement local or enterprise PMO's, and therefore organizationally arrange their Project Managers to have a dotted or solid line report to such offices. Through time and experience, companies have come to rely on PMOs to improve success of projects and project managers. These vary in scope and roles, but fundamentally, the PMO drives best practices of the Project Managers and Projects for the executive team. The PMO drives how not to make the same project mistakes, thereby increasing the success of projects through the implementation of standard global project processes.

As auditor, you will need to meet and interview with the PMO once you launch the audit. Request that you obtain all their global and regional project processes (as these may vary from region to region). These project processes may contain process gaps and ultimately result in lack of controls and non-compliance. Time needs to be spent reviewing these processes. Specifically ask the PMO if these processes are tested on a yearly basis and ask to see the test results and which projects were used as test cases. This evidence will demonstrate effective controls. Any deviation should be noted.

As the PMO, they should be centrally tracking all projects and programs within the enterprise. Ask for the project portfolio as of the last report date. Project management includes both project planning and project monitoring. A project is considered to be "any series of activities and tasks that: have a specific objective to be completed with certain specifications; have defined start and end dates; have funding limits, if applicable, consume human and nonhuman resources such as money, people, equipment, and are multifunctional" (Kerzner, 2003, p. 2). Project planning includes definitions and specifics of work requirements, quantity and quality of work required, and resources needed whether inside a department, interdepartmental, or need to be outsourced (Kerzner, 2003, p. 3) while project monitoring includes tracking progress, comparing actual versus forecasted outcomes, analyzing impact, and making adjustments for success.

Successful projects are considered to fit the time constraints identified as well as budget while working within the system effectively with minimal interface issues and satisfy enough customers to be profitable. Even when the complexity, organizational restructuring issues, risks, and customer issues are dealt with the benefits of managing a project well include higher customer satisfaction, maintaining customers, and obtaining new customers. Maintaining customers is as important as growing the customer base in most organizations whether they are product focused or customer-focused.

The PMO should be able to answer any question relating to resource shortages within the organization. It is the role of the PMO to have visibility as to manpower shortages and any project having manpower shortages must be reflected in a PMO report. Ask for evidence to this regard. The main resources needed for any project include money, manpower, equipment,

facilities, materials, and information/technology (Kerzner, 2003, p. 7). While not in direct control of any of these items overall, the project manager does have control over them within the realm of the project. Project managers negotiate for team members within sections and departments for members that have specific skills for specific parts of a project. Some parts of projects may only last a few days while other parts may last more than a year. Time management and project responsibilities must be allocated responsibly by the project manager to achieve a specific goal within the specified timetable. Good project managers must be able to choose team members that can report to their line managers and interface with other departments while completing specific tasks.

One unique responsibility of a project manager is his ability to set policies, procedures, rules, guidelines, and/or establish directives that may be different from the rest of the organization and departments which team members may work in. All must adhere to the overall company policy and meet the established mission of the company. Yet, project managers may not deal with promotions, grades, salaries, bonuses, overtime, responsibility, and/or future work assignments as these functions fall directly under the line manager the team member is responsible for (Kerzner, 2003, p. 17). Project managers may work excessive hours and be unable to take time off for vacation, family functions, or illness. Criteria for managing projects and or programs to help managers and executives follow by type of project management style.

4 Project Management

Traditional project management (or TPM) helps business stay competitive and in many cases gain market share even for a short time period. A project is “a sequence of unique, complex, and connected activities having one goal or purpose and that must be completed by a specific time, within budget, and according to specification” (Wysocki and McGary, 2003, p. 3). A collection of projects is a program, which may have multiple goals to meet an wide ranging objective. This difference is important for departments and organizations to understand because multiple projects may be needed to help an organization institute change, maintain market share, and potentially grow. The main constants for every project are scope, quality, cost, time, and resources. Scope defines the boundaries, while quality deals with both product quality and process quality. Recognizing the duality of quality is imperative. Continuous improvement is imperative.

Cost not only deals with the issues of instituting the project but those associated with implementing the project and any outsourced costs. Cost and time are inversely related, cost can be enumerated while time cannot. Yet, time is the main issue that will determine success, a premature launch with a product rushed to market is almost doomed to failure while a product introduced after a competitors is almost always a failure unless it is able to differentiate itself from its competitor. Resources are the main assets and include people, equipment, physical facilities, or inventory. While some resources are fixed others are not. When a project changes prior to deployment, the scope is defined as scope creep. Hope creep is when a project team member is behind schedule but reports that he is on schedule. Effort creep is when a team member works on a project but does not make any progress. Feature creep is when team members add features that were not originally planned, are not necessarily required by customers, and add both time and money to the project unnecessarily.

Project characteristics are classified by risk, business value, length, complexity, technology, number of departments affected, and cost (Wysocki & McGary, 2003, p. 13). Within these characteristics, the project management process is defining, planning, launching, monitoring and/or controlling, and closing a project. Defining deals with the conditions of satisfaction, an overview statement, and approval request, while planning deals with conducting planning sessions, preparing a project proposal, and approving the proposal. Defining sets the scope of the project. It clarifies all the issues, identifies all the key skills that are needed. Launching entails the kick-off meeting, activity schedule, resource assignments, and a statement of work. The project plan is a dynamic tool rather than a static tool. As internal and external environments change as well as customer needs, the project plan should be changed to meet the changing environment and needs. The benefits of planning include reducing uncertainty, increasing understanding, and improving efficiency. Monitoring and/or control is the reporting, meetings, and issues of deliverables to management. And, closing a project entails all the items needed to terminate the project including the evaluation of the process and recommending changes to improve the process in the future.

4.1 Adaptive Project Framework (APF)

The Adaptive Project Framework (or APF) incorporates selected tools and processes from traditional project management. APF “is an iterative and adaptive five-phase approach designed to deliver maximum business value to clients within the limits of their time and cost constraints” (Wysocki & McGary, 2003, p. 268). APF believes that the scope of a project is

variable depending on time and costs. Thus, the original project scope may change during subsequent phases based on time and costs. To wit, the scope is constantly changing in APF. The five phases of APF include: 1) version scope; 2) cycle plan; 3) cycle build; 4) client checkpoint; and, 5) post-version review. Version scope deals with the conditions of satisfaction (or COS) which occurs between the requestor and the provider, either or both can be external and/or internal. The project overview statement (or POS), generally a one-page document that summarizes the reason for completing the project, a goal statement, along with the objectives to attain the goal, the specific value the project will add to the business as well as the affect to the financial health of the organization, and the basic risks, assumptions, and obstacles to success.

Following should be a work breakdown structure (or WBS). The WBS should contain only the main steps and not be as detailed as most work plans because change will occur, particularly in the beginning so a detailed plan generally wastes the team members and project managers' time. The WBS should prioritize functions and define the time, costs, resources, scope, and quality goals to be achieved at the end of the project as well as some basic benchmarks for scheduling. With this information the cycle plan should be completed. The cycle plan has milestones marked but should not have each task outlined with a specific list of items to complete. Tasks which are dependent upon each other should be separated and noted by section and functionality. Each team member should then build their cycle which includes specific schedules and resource allocations necessary including budget. Any items that need to be obtained externally should be reviewed and potential vendors should be identified and a request for proposal (or RFP) or request for bid (or RFB) should be written with details and specifications. After this is done, the internal client or executive responsible for the project or program of change projects needs to review all the information to ensure that it matches with the organizations overall plans and time table.

The main business factor that validates the project process is if the business outcomes are achieved. Additionally, all learnings should be written down so future projects do not have to waste time and find new solutions and how can the APF system improve effectiveness in the project. The APF core values include client-focus, client-driven, incremental results are disseminated, continuous questioning and introspection, and change is progress to a better solution (Wysocki & McGary, 2003, p. 276-278). Future issues that need to be addressed, enhancements that should be considered, customer issues and competitive information gathered during the process, and basic industry information should be denoted and disseminated not only to the team and internal clients but to all individuals within the corporation. This helps reinforce the project process within the organization and trains all individuals about the type of information that should be gathered on a regular basis.

4.2 Product and Cycle-time Excellence – PACE

Here is another methodology that can be utilized by organizations. McGrath (1996) developed product and cycle-time excellence (or PACE) as a product development process with seven interrelated elements. The PACE system defines the approach as well as various techniques and methods to overcome deficits whether internal or external. The seven elements include decision-making, project team organization, development activity structure, development tools and techniques, product strategy process, technology management, pipeline management. All organizations make decisions daily about their products and services. Some decisions are easily made with little to no information while other decisions require research

and a lot of background information. Inadequate information or processes cause multiple problems. Additionally, some decisions are often delayed due to blurred lines of decision making responsibility and budget issues rather than quality and customers. PACE requires that specific decisions are made at specified levels, each level paying attention to budget, responsibility, and customer issues. Each phase is reviewed by a team of senior management members throughout the organization. This team is known as the product approval committee (or PAC). As auditor you can request to see evidence of such minutes of the meeting to show that management was aware of problems or that the correct progress was provided at these sessions. The phase review keeps team members engaged in the process as well as key senior management informed about the process and progress. Any deviations should be noted within the audit log.

Project teams must be organized with each team member's role defined, as well as their responsibilities and time commitment per phase. Some members' role and time commitment may stay constant while others will change depending on the phase and process. A core team is a small cross-functional group of individuals with specific skills and authority to develop a specific product. Each core team has a leader who reports to the PAC and deals with all the administrative issues. Ineffective teams rarely deploy an effective or profitable product or service; yet an effective team with good communication, coordination, and decision making may still not experience a successful product or service deployment, but they have a much better chance of doing so.

Development activity is the main work and processes needed to deploy a new product or service. McGrath (1996) found that the main deficiencies in development include: 1) companies without any defined structure for product development; 2) those with detailed procedure manuals that weren't followed; and, 3) those with a structured process that did not improve or speed development (p. 21). Because companies lose team leaders through either promotions or to competition due to successful product deployment, new team leaders have to reinvent the process when they start a new project. Quality function deployment (or QFD), design for assembly (or DFA), computer aided engineering (CAE), object-oriented software development tools, design for manufacturability (or DFM), product data management systems, simulation tools, project planning and scheduling tools are all development tools and techniques categories described by McGrath (1996). According to McGrath (1996) each solves specific product development issues; alone, none are sufficient. Additionally, McGrath (1996) notes that many companies he observed using these tools and techniques had two problems: "either they are not applying the right techniques and tools, or they are applying them ineffectively because they do not have an overall product development process" (p. 23). Design techniques are ineffective by themselves because they are incomplete. New products which only follow manufacturability or serviceability will always have problems with customer acceptance. Automated development tools use only the design specification definitions rather than taking into account any human factors. McGrath's (1996) PACE process incorporates all the tools and techniques into the process rather than attempting to define one process that would incorporate a system to develop all products and services.

The product strategy process starts all new development processes. The key to all product development is that the product fits the companies' current and future strategies. Each company should identify a specific overall strategy for product development; thereby, everyone throughout the organization understands the process, the terminology and the basics of change

during the deployment. If companies do not have a specific platform for products and services or a clear strategy, some products will succeed while others will fail. Product strategy should focus on the customer needs in the future and the market trends.

Technology management identifies opportunities to deploy new technology with a specific product, updating systems and processes throughout the entire organization. Organizations may become so focused on a specific product having a critical impact on the organizations future and health, that the technology projects become secondary projects whose success depends on the marketplaces acceptance of the product rather than the organizations willingness to adapt to change. When new technologies are identified as critical to both a products deployment and the companies' future health, the new technology should be dealt with separately so that the new product is not delayed or endangered because of the new technologies acceptance within the organization. Pipeline management becomes important after corporate resource issues dealing with staff, materials, space, and equipment issues are dealt with. The common issues in pipeline management are:

- 1) Development project delays stemming from over-allocated resources – frequently this is caused by an ineffective resource scheduling system;
- 2) fire-fighting decisions made without the context of project priorities;
- 3) Functional budgets misaligned with project resource assignments;
- 4) Misalignment between project skill requirements and departmental resources;
- 5) Product development decisions not made with consideration of company objectives for growth, product mix, or short- and long-range emphasis (McGrath, 1996, 26).

The PACE architecture is both a blueprint for project management and a reference model for product development by defining product development as an integrated process and sub-processes, organizational structures, development activities, techniques, and tools working together within a single structure. Employees are able to learn one system with different tools to enhance their work everyday and make them effective as well as supportive of teams developing new products and services within the organization. The four management elements are the Phase Review Process which includes Concept, Plan/Specification, Detailed Development and Prototype, Alpha and Beta Test, and First Release and Volume Manufacturing, Core Teams, structured development process, and development tools and techniques.

PACE helps organizations focus their decision making and development processes to ensure customer acceptance. Popular literature often refers to this process externally as customer focused or market based management. Each phase has specific research steps to help maintain a customer focus, for example the Phase 0 or the Concept phase not only develops the business case for a product but also gathers information from current and potential future customers about their thoughts, feelings, and possible purchases of the product. Once customers demonstrate their willingness to purchase and the organization has determined that it fits with their short and long term objectives and corporate mission, Phase 1 or the Planning and Specification Phase is implemented. Phase 1 specifies all the issues, resources, budget, and test models to be tested within the organization by employees to learn what changes need to be made internally for the product to be supported. Once the internal tests are complete, human factors need to be dealt with. Phase 2 or the Detailed Development and Prototype phase is the actual development of the product and any accompanying services need to service customers. Phase 3 or the Alpha and Beta Testing determine pricing issues, any changes that need to be

made to satisfy customers or ease customers use. Completion of Phase 3 means that the company is prepared to launch a product its markets. And, finally Phase 4 or the first release and volume manufacturing of the product and accompanying services allows the organization to determine the type of support the company needs, customer acceptance, and competitors response.

Implementation is difficult for many organizations because awareness and training have not been completed. So it becomes essential that part of the audit should be to assess the compliance of the employee or contractor training records. Are they certified to manage projects? Are they aware of legal and HR policies (i.e., Young Persons Act, Safe Harbour, etc). Some employees may not be convinced that the new product is appropriate or that change is necessary especially when development is not an integrated process within the organization and is seen as a special team. This is exacerbated when the team is isolated from the different divisions and in a separate building. Regular, informational internal communications and presentations are helpful in the integration process. Decision-making issues and lines of responsibility can affect the success of a project. If decisions are made only at the executive level, team members may feel they are only marking time on a project rather than developing a product for the organizations current health and future growth.

Projects in the Implementation phase are also difficult to audit when only certain departments or PM's use the PMO processes. This piecemeal approach causes problems throughout the organization, leading to standardization write-ups. Thus, the effort required to deliver a project may be sabotaged by PM's who are not working with the project standards. This will affect the organization because they have not understood the full scope of the PMO and processes. Auditors to note that when requesting information from the PMO portfolio team is that it is crucial to ensure what the latest list of in-flight projects and their priorities are, as executives making last minute decisions on project allocations may lead to projects being left incomplete, with the possibility of contractual or financial obligations, which can lead to litigation or financial loss.

The PACE process allows certain decisions to be made by team members with special skills and then reviewed by executives. Writing down the process is not sufficient; carrying out the process is imperative. And, once a process is complete, the various learning from the process should be reviewed and the information should be fed back to the members so improvements can be made. While problems and issues always arise and some may be embarrassing, it is important to learn from the problems and issues so they can be dealt with earlier or avoided in future projects. Thus, the key to successful implementation is preparation, planning and training over time, not just one time, and continuous improvement.

4.3 Extreme Project Management (or xPM)

High speed, high change, and high uncertainty/risk are characteristics of Extreme Project management (or xPM) process. Because of these characteristics unlike traditional or APF, xPM is unstructured. The learning's gathered in the frenzied pace move the project forward. Specifically, the four phases are initiate, speculate, incubate, and review (or INSPIRE). The cycles are shorter, lasting only 1 to 4 weeks and the project may end prior to reaching the last phase because during one of the other phases, the project was either cancelled or changed.

Internal clients rather than waiting for each phase to be completed or a specified review during the phase, they are continuously involved in the process on a weekly and possible daily basis. Initiate phase is a mixture of establishing the business value of the project, finding possible solutions, creating a team to work on the solutions, and promoting the information within the organization. The POS is used to promote the information rather than a statement of work (or SOW), POS, and WBS. The POS must be specific and to the point, with only the required information: the problem or opportunity, the goal, the objectives, the criteria for success, and the assumptions, risks, and/or obstacles. Generally this can be done on a specific form within one or two pages at the most. Time and costs must be associated with the resources as well as the criteria to end one phase and start a new phase.

The speculate phase begins a new cycle and always starts with a brainstorming session. Each idea should be specific to the problem defined and associated with the incubation length, costs, and review process. How each item will be processed and the conditions of satisfaction (or COS) should be determined at the beginning. Prioritizing requirements is imperative in the collection of data and information. Each speculated item will have different requirements. Once the items are investigated, the benefits, strengths, and weaknesses should be identified and then evaluated. The internal client will participate and determine the one solution that should proceed.

During the Incubation phase of xPM a list of deliverables is identified, tasks dependent on each other are prioritized, internal changes are identified and any resource or materials needed externally are identified with their acquisition costs. Sub teams will work in parallel to execute the project, unlike other project management plans, which only have one team, and all meet together. Additionally, resources will be assigned, a cycle plan will be determined, and the deliverables will be determined collaboratively with the xPM manager and the client. Once the item has been delivered, the Review phase begins. The main items to be evaluated include the items learned, what items need to be researched to reach the goal, are there new ideas that should be researched, and where does the team go after the review of xPM is complete.

Project Life Cycle

Project Life Cycle (PLC), an ordered process of stages to help decision makers systematically make decisions, consists of above noted five phases: scope, project plan, launch, monitor/control, and closing the project. Yet, according to Chapman & Ward (2003) the project life cycle consists of only 4 phases: conceptualization, planning, execution, and termination. The six basic questions that need to be addressed throughout a projects phases are: 1) who are the parties ultimately involved?; 2) why do the parties want to achieve?; 3) what is it the parties are interested in?; 4) how is it to be done; 5) what resources are required; and, 6) when does it have to be done (Chapman & Ward, 2003, p. 10). These questions are more commonly known as the six Ws' or who (parties), why (motives), what (design), whichway (activities), wherewithal (resources), and when (timetable) (Chapman & Ward, 2003, p. 10).

The conceptualization phase identifies the need to adapt or identify a new product or service to keep the organization healthy and able to compete in the current market. The purpose and objectives needs to be identified as well as the issues or constraints for the change. The concept should be evaluated by all sections that will be affected as well as the executives or the parties, motives, and design questions. Once a decision to move forward is made, the planning

phase begins. Planning encompasses the design, the strategic execution and issues involved in the new product or service, and the allocation of resources or the whichway, wherewithal, and when questions. Any threats to the strategic issues or possible opportunities are identified during this stage. The execution phase or production phase coordinates the process as well as monitors the progress, modifies areas that need modification, and evaluates the process to ensure that the product or service is ready for deployment. Once delivered, a review process notes any issues that need to be rearranged if another, similar project is undertaken and how to integrate the projects systems into the current organization and its processes. When projects involve multiple tasks or small projects to be completed along with a larger project, it is important to note which tasks need to be completed prior to other tasks.

Procurement Project Management

Procuring the resources, materials, funding, space, as well as external items outside of the organization is the responsibility of the project manager. Procurement project management entails planning procurement or buying or making items needed for the project. When an item is not already available, the project manager issues a request for proposal (or RFP) or request for bid (or RFB) if appropriate. Vendors are contacted and sent the initial request and asked to respond if they would like to submit a proposal or bid. The RFP and/or RFB include all the details and specifications for the item being acquired with some background on its use to ensure that the vendor is providing the most accurate and up-to-date information. If proprietary information must be detailed, the vendor should sign a non-disclosure contract so that the organization is legally protected. Vendors' questions should be directed to one person on the team. Sometimes, the team may invite all the vendors to a meeting, introduce the project, the specifications, and respond to questions at one time. This has the advantages of reducing time for team members and the project manager, and can ensure that the bids are competitively priced when submitted. The caution is the issue of confidentiality. It is more difficult to control information if all the vendors meet in the same room. However, this can signal direct competitors that the organization is creating a new product.

Selecting a vendor must not be solely based on budget items but on the specifications of the item being procured. Each item needs to be evaluated between and amongst all vendors. Additionally, delivery, documentation, training, amount and type of manpower the vendor is willing to lend, and support after delivery are also important. Once a vendor is selected a contract must be written following the finance and legal department guidelines. The contract must include the item and project specifications, amount of money, variance or allowance for defective issues and resolution of defective items, training, delivery schedules, payment mechanisms to be employed, and cancellation issues or closing out the contract early or extending the contract. At all times throughout the project the project manager must ensure that the benefit outweighs the costs of each item being procured.

1.1.1.1 Comparing and Contrasting TPM, APF, PACE, and xPM

All span the entire project from the beginning to the end. While TPM and PACE spend more time on the goals and determining how each item will be processed, APF and xPM shorten the process and allow each team member to be responsible for determining how to complete the overall task or goal identified by the team. xPMs goal is not necessarily known because the project statement is broad and the team members work more closely with the client to determine the results. Additionally, TPM and PACE have a specific budget, time period, scope, and a

complete WBS and generally encompasses one life cycle. In contrast, APF has a fixed number of cycles, budget, and time schedule, xPM has an unknown number of cycles, variable budget, and time allotment. The APF has a variable scope and the xPM has an unknown scope; APF has a mid-level WBS with the just in time items noted, there is no WBS in the xPM. In TPM change is not tolerated, while change is embraced in the PACE and APF systems, and change is a constant in the xPM every day.

All four may be appropriate for one organization. First, it will depend on training and experience. The more training and experience, the more likely it is to shorten the process with the APF or xPM. The issues or product being investigated will also denote the style, the more departments and products involved, the more important it is to use either the TPM or PACE systems. Often xPM is used when a competitor has introduced a product and/or service that have cut sales and satisfaction and are threatening to take away a portion of an organizations customer base. Because there will be multiple projects at one time in different cycles and phases, it is best to determine how the group of projects sometimes known as project programs or portfolio of products will be managed. Thus, a program or portfolio strategy should be identified to evaluate which set of projects will be the most beneficial to the company and archive the highest level of customer satisfaction.

4.4 Audit Best Practices in Corporations

Professional project organizations are growing in importance, due to a rise in project management awareness as well as project standards such as CIPA and ISACA best practices for management of systems and projects. They need to understand how to learn from other project managers and other professionals, just as other professionals like Doctors and Lawyers attend conventions to learn the current methods and updated tools of their profession. Professional organizations increase the skills and knowledge of their members and increase the effectiveness of the membership.

5 Project Audits

5.1 Troubled Projects or Programs

Projects or programs are never perfect and managers or the PMO needs to anticipate that problems will most likely arise at one point or the other. It is the duty of these individuals to mitigate all risk through careful planning and maintaining an audit trail of project deliverables, payment records and signed contractual documentation.

5.2 Project Audit Methodology

IAPPM has a management framework in place that is managed and maintained by the Management Team (PMT). Related documents within this framework are:

5.3 Obtaining Executive Buy-in for Conducting Audits

Prior to any audit, it is key to have the buy-in and support of the audit team being on-site and that the organization understands that the audit is being performed with the endorsement of management. Audits can be scheduled as follows:

- The executive team feels that a specific project or program is under-performing and needs to understand what these weaknesses are
- Shareholders request the audit of a major program, which is losing money
- Fraud or corruption
- A request made by a third party audit team (such as the financial auditing firm)
- A report made by an employee or officer of the company

5.4 CIPA Strategy

The CIPA strategy fulfils its primary mission through a strategy that emphasizes both prevention and compliance by a few key components; namely:

Prevention

- Conducting reviews of major new systems prior to implementation.
- Providing financial and information management internal control training
- Strengthening the internal control environment through the development and communication of best practices and self-assessment techniques

Compliance

- Developing and executing an annual plan based on a systematic risk assessment process
- Coordinating work with the external auditors to optimize audit coverage
- Assessing the adequacy and effectiveness of internal control processes
- Recommending corrective actions to address control weaknesses
- Monitoring compliance with the corrective action plans

CIPA fulfils the other key elements of its mission by:

- Identifying areas of specialized audit risk
- Developing customized audit approaches to address significant contractual and regulatory risks
- Conducting specialized audits to ensure compliance with contractual agreements as well as governmental and industry regulations.

CIPA will ensure the execution of these strategies by:

- Maintaining a professional audit staff with sufficient knowledge, skills, and experience to meet the requirements of this charter
- Maximizing the utilization of existing and emerging technologies and innovative audit approaches.
- Utilizing the IIA Standards for the Professional Practice of Internal Auditing as a resource to fulfil these responsibilities.

CIPA certified members can also assist in the investigation of significant suspected fraudulent activities within the organization and notify management and the Audit Committee of the results. Responsibility for the implementation of an adequate control environment resides with the management of the individual organization.

5.5 Audit or Assessment Best Practices

The following practices have been found to be most productive and effective when facilitating Joint Assessment workshops:

- Ask open-ended questions. When the participants do not understand the objective or are "stuck," facilitate by providing a real or hypothetical example.
- Facilitate, probe and ask follow-up questions.
- Don't dictate. Let the participants come up with the answers.

- Keep the conversation moving. Discussing side issues is fine, but don't allow the conversation to drift to non-business issues for a prolonged period of time.
- Establish a contract defining the activities that a facilitator should perform as well as what is expected from the participants.

If you find that a participant talks too much, then as the facilitator you need to either call on others or impose "air-time" limits on participants. On the other hand, if a participant does not talk at all, the facilitator needs to ask everyone to take turns expressing their ideas. Please note during discussions that it is important to avoid technical jargon not understood by the group.

6 Project Assessments

6.1 Difference between an Audit and an Assessment

An assessment is performed on a third party vendor (TPV) or contractor to identify and verify the risks to the parent organization. The audit team will perform this assessment of their stated capabilities. Often, it is necessary for member of the audit team to travel to the TPV location to interview key members of the company to measure their ability to conduct business or to deliver to project standards. For example, Company ABC has contracted its IT infrastructure to a company in India and the project starts moving over all the services abroad. Suddenly problems arise and it is evident that the offshore partner does not have the necessary data security, and network as previously stated in the contract. The project is delayed by 6 months and leads to financial delays and legal issues.

Using this example, IAPPM recommends that projects and programs use the practise of an assessment to determine project success. Assessment checklists will be determined based on the industry type and compatibility against what the project requires. Project Audits as previously stated are more comprehensive and require more work than assessments.

6.2 When to Assess an Organization

6.3 Format for an Assessment

The format for carrying out an assessment should be documented ahead of time and not be verbal. The individual or lead carrying out the assessment should prepare the following:

- An agenda listing the topics or areas to assess
- Duration for the assessment
- Access to people and areas needed
- Outputs of the Assessment
- Next steps

6.4 Who to Invite on an Assessment

It is acceptable from an auditing perspective to notify the TPV organization in advance in writing who will be performing the assessment and should identify by name and specialist area all individuals who will be participating in the assessment. For example, if this is an assessment of a IT services company, and you are going to assess their networking capability, then it would make sense to make sure you have the following people attend or have knowledge in :

- Internetworking

- QIP, DNS and IP protocol knowledge
- Understand Network equipment, ports and layers
- Network Diagrams and Security

6.5 Post Assessment Report

It is always necessary to develop an assessment report once the audit has been concluded and a first draft of the report should be delivered to the immediate customer no less than 14 days after the last business day of the assessment, with the notification that a final draft will be delivered after corrections have been made. This should be a realistic period and agreed to by all parties. Due to the sensitivity of the report, no unauthorised copies should be emailed or shared with any other individual.

6.6 Who the Assessment Report is Issued To

The assessment report is to be developed and a final copy delivered to the following individuals:

- The project lead or the person that requested the assessment to be carried out
- The auditing manager/partner
- The audit department records team
- Depending on the outcome of the assessment, the TPV for actions and follow-up

7 Classification of Audits

7.1 Assessing Companies

Reason for assessing a company (not necessarily project driven) could be outsourcing related. CIPA can perform internal control audits and specialized reviews, as shown below:
(incomplete, to be expanded on subsequent draft)

7.2 Internal Control Reviews

These reviews constitute the core of our annual Audit Plan commitment to the Audit Committee and the majority of our total effort. Specialized reviews to assist management with various aspects of their control responsibilities, as needed.

7.3 Pre-implementation Reviews

These reviews are designed to assist affiliate companies in identifying possible control weaknesses in new systems, prior to their implementation.

7.4 Preliminary Assessments

Initial internal control reviews of new companies are performed without the issuance of a conclusion. The purpose is to partner with the new affiliate, introduce them to the audit process and open communication links. This has had a positive effect on the audit/auditee relationship.

7.5 Contracted 3rd party Substantive Work

Substantive work performed primarily for the benefit of an auditing firm especially brought in for a big audit (ie., PwC, Accenture, CGEY).

7.6 Training

Presentations and workshop with affiliates on internal controls for finance, information systems and specialty areas.

7.7 Other

Includes staff pre-scope reviews, follow-up reviews, and other assistance to organizations.

7.8 Contract Reviews

Audits of contract compliance, which include construction audits, acquisition and divestiture reviews, advertising, and other third party, contract reviews.

7.9 Confidential Reviews for Management

Any work performed on sensitive issues or other special issues at the request of organizations or management.

8 Audit Process

The audit process can be divided into four fundamental activities: Audit Risk Assessment, Planning, Fieldwork and Audit Report. The following paragraphs discuss these activities and objectives.

8.1 AUDIT RISK ASSESSMENT

We utilize an audit risk assessment process to identify audit risk and to utilize our resources to most efficiently fulfil the audit needs of the organization. The factors we consider include: assessment of management's demonstrated commitment to establishing and maintaining proper internal controls, prior audit results, political/economic factors, operational and system changes which may directly affect the control environment, and ongoing discussions with senior management.

8.2 Uncertainty and Risk

While each project has a plan, schedule, and budget, there is still an amount of uncertainty and risk inherent with every project no matter what the circumstances are. Each project has inherent strengths and weaknesses as well threats and opportunities from both internal and external sources. Underperformance of team members and budget are both potential problems in every project. Because both of these issues are consistently items at risk, project managers tend to recognize these issues first and attempt to neutralize or identify a course of action to deal with each. However, there are other risks such as variability associated with estimates, uncertainty about the basis of estimates, uncertainty about design and logistics, uncertainty about objectives and priorities, and uncertainty about fundamental relationships between project parties (Chapman & Ward, 2003, p. 7). Additionally there are environmental issues that the organization or project team is not able to predict or control. It is important to recognize that some uncertainty can be helpful to the organization if they are attempting to launch a product or service prior to a competitor launching the same or similar product or service.

Risk Management Processes (RMPs) by Chapman and Ward (2003) define project risk as "the implications of uncertainty about the level of project performance achievable" (p. 12). Utilizing this definition denotes that risk management is built into the project planning and potential issues are identified by all team members whether they are internal or external to the organization. Base plans or target scenarios are created for the process. Many project managers believe their target scenario to be their timeline, their program evaluation and review technique (or PERT), or their Gantt chart. Contingency plans including supporting activity based plans to deal with each contingency can be placed upon the timeline, PERT, and/or Gantt chart, however, valuable time can be wasted if too many contingency plans are developed. Macro-risks are the aggregate issues for a large event while micro-risks are an event-by event basis (Kendrick, 2003, p. 3). Insurance is a macro-risk example of an organization or individual attempting to deal with the external unknown risk. Projects and product development deal with

micro-risk. Managing risk helps manage the outcome. By evaluating each project and/or product with regard to its fit with the companies' mission, objectives and overall strategy is imperative as a first step in managing risk. The next step is the changes in the overall industry and reviewing customer satisfaction with regard to current products and services alongside competitors who have similar products and services.

The benefit of managing risk is that projects are aligned with the corporation's current and future objectives thus increasing the companies' ability to compete in the global environment. Additional benefits include lower costs, chaotic management issues, consolidated vision for the future, project priority, management and shareholder support, increased communication, coordination, and control issues between and among employees and departments (Kendrick, 2003). By identifying a specific process and noting employees are more willing to identify issues before they become problems ultimately avoiding risk. Risk avoidance in a corporation by preventing issues from becoming problems is appropriate employee behaviour.

Low risk projects or projects that deal with enhancements of current products or services may not receive priority and may receive a limited budget and team members that do not have as much training. High risk projects or projects that deal with new products and services which focus on a competitive response or are deemed necessary for a companies vitality within the industry may receive more time, larger budgets, and more highly trained individuals. The main determinant is to start by summarizing the amount and type of risk. For each identified item, the methodology for identifying the issues and the processes by which the team member, members, and/or team leader will deal with the issue. Issues for risk should be a regular topic at meetings.

Documentation must be kept to ensure clear thinking at each phase, along with clear communications, familiarization with issues as well as progress among all staff levels, a record of the processes undertaken as well as the decisions, knowledge, and acquisition of information to ensure that if a problem arises, it can be corrected. Either or both qualitative and/or quantitative analysis can be undertaken of internal and external information to help team members ensure success. While estimates are only guesses, they help quantify progress, targets, and issues. The main reason to establish estimates is to manage risk. Risk efficiency is management of risk by meeting estimated timelines, budget, and specific markers identifying progress toward the specific goal. Each risk analysis should include the effects on the system and organization, existing system complexity and its issues, existing system knowledge, project definitions, project management structure, project systems resources, sponsorship commitment, and system sensitivity and visibility. The downside variability or risk is when one or more items falls below the expectation (Chapman & Ward, 2003). Each organization needs to determine what level of risk they will allow for each project. Higher levels of risk may be allowed when a project has a higher than average expected return on the investment of time and money. Risk management relates to the ability to diagnose the risk and develop changes to the project plan to deal with the issue, demonstrate the reasons for the changes, and execute the changes in an efficient manner to deal with the concern. Chapman defines this method as Synergistic Contingency Planning and Review Technique (or SCERT) (Chapman, 1979).

It is important to note that risk management allows an organization to search for opportunities both internally and externally. Additionally, it can identify areas for change that

will not only help with the specific project, but help the entire organization. Risk analysis and efficiency help managers establish methods of identifying appropriate risks for individuals, teams, and groups within an organization which make the organization more efficient and more successful in fulfilling its mission, meeting shareholder expectations, as well as increasing customer satisfaction. Risk management often begins the change in an organization that has been unable to fulfill its mission, shareholder, and customer expectations to a market based management system meeting all of its goals and objectives. Risk management allows for employees to become familiar with speculative projects in a safe manner before the organization demands changes throughout the entire organization. The biggest risk is losing talented and trained individuals willing to take risks and keeping less talented and less trained individuals who do not willingly take risks thus entrenching the organization.

Kendrick (2003) created the Project Experience Risk Information Library (or PERIL) database to help team members and organizations identify known risks or risks that occur frequently versus unknown risks or risks that are unique to the project and/or organization, whether internal or external. The main categories of risk in the PERIL database are scope, schedule, and resources. Each category is subdivided by the source of the risk, and whether there is internal and/or external control of the source. Additionally, each is plotted by time and the amount of resolution. Kendrick (2003) identifies the key ideas for project risk planning are: 1) project selection affects risk management and depends upon it; 2) project risk management builds on the foundation provided by your project definition and planning; 3) a project risk plan summarizes your risk management approach (p. 35).

Project Recovery

When projects get derailed due to a critical item or items not being completed, team communication, or coordination issues, the project needs to be evaluated. The evaluation needs to determine whether the project is critical or not to the health of a division, its future, and the organizations health and future. Some projects fail due to lack of commitment to change among employees. Change can be difficult for many employees as the unknown and unfamiliar is intimidating. If the project is deemed critical, then executives will need to determine how to proceed. Education about the companies' future, industry changes, and company changes may need to take place. If education and training programs do not work, executives will need to determine if employees need to be moved to positions where they will no longer have any impact to critical projects or terminated. Once the project has been determined necessary and employees' commitment and work has been evaluated, a programmatic evaluation should take place.

Cagle (2003) defines a programmatic performance checklist as: 1) a statement of work (SOW); 2) specifications; 3) policies, plans, and processes; 4) organization; 5) teaming, alliances, and subcontracts; 6) materials; 7) personnel; 8) training; 9) data management; 10) quality; and, 11) final delivery (p. 180). Using a checklist to determine proper definitions, information, type, and quality is measured as well as the issues with personnel, training, and data management. Additional items such as items being realistic with appropriate time lengths are also evaluated. Multiple problems along the process may be found, throughout the process. Each problem requires its own resolution and while tempting to start with only critical items that will allow the project to stay on target, it is imperative that the first problem be dealt with and then each succeeding problem. If problems are not systematically dealt with, the project will likely have problems again.

Cagle (2003) notes the Quantum Improvement (QI) rule as being an extension of the 80/20 Rule by compounding the multipliers (p. 192). QI “assumes that the top 20 percent of the 80/20 Rule is nonlinear and projects that one percent of the problems cost (or return) 50 percent of the money” (p.192). Cagle summarizes that the most important items found during the recovery process should be added to each project so that the problem is prevented in the future or dealt with earlier so that it does not become a problem.

8.3 PLANNING

The manager or team coordinator of the audit may schedule preliminary discussions and request information from New Brunswick and Operating Company management to aid in developing the areas to be audited (audit scope). After all Company information has been surveyed, the scope is formalized in a letter that is sent to the Managing Director/Financial Director or Controller of the Company. In addition, CIA notifies management of the planned audit areas in order to minimize disruption.

8.4 FIELDWORK

The audit work consists of documenting and evaluating the Company’s system of internal controls. The information documented is based upon the auditor’s observations, inquiries, and testing, which will eventually establish a basis for the auditor’s conclusion. There are meetings with appropriate managers throughout the audit to discuss any questions or problems that may arise.

8.5 AUDIT REPORT

A draft of the audit report is reviewed with local management during the final week of fieldwork. Management’s agreement with the recommendations, implementation actions, and dates are established, and a final audit report with a conclusion typically is issued to local management the last day of fieldwork.

9 Project & Program Management Audits

9.1 During the Project Life-Cycle

Project Life Cycle

Project Life Cycle (PLC), an ordered process of stages to help decision makers systematically make decisions, consists of above noted five phases: scope, project plan, launch, monitor/control, and closing the project. Yet, according to Chapman & Ward (2003) the project life cycle consists of only 4 phases: conceptualization, planning, execution, and termination. The six basic questions that need to be addressed throughout a projects phases are: 1) who are the parties ultimately involved?; 2) why do the parties want to achieve?; 3) what is it the parties are interested in?; 4) how is it to be done; 5) what resources are required; and, 6) when does it have to be done (Chapman & Ward, 2003, p. 10). These questions are more commonly known as the six Ws' or who (parties), why (motives), what (design), whichway (activities), wherewithal (resources), and when (timetable) (Chapman & Ward, 2003, p. 10).

The conceptualization phase identifies the need to adapt or identify a new product or service to keep the organization healthy and able to compete in the current market. The purpose and objectives needs to be identified as well as the issues or constraints for the change. The concept should be evaluated by all sections that will be affected as well as the executives or the parties, motives, and design questions. Once a decision to move forward is made, the planning phase begins. Planning encompasses the design, the strategic execution and issues involved in the new product or service, and the allocation of resources or the whichway, wherewithal, and when questions. Any threats to the strategic issues or possible opportunities are identified during this stage.

The execution phase or production phase coordinates the process as well as monitors the progress, modifies areas that need modification, and evaluates the process to ensure that the product or service is ready for deployment. Once delivered, a review process notes any issues that need to be rearranged if another, similar project is undertaken and how to integrate the projects systems into the current organization and its processes. When projects involve multiple tasks or small projects to be completed along with a larger project, it is important to note which tasks need to be completed prior to other tasks.

9.2 Post Project Audits

A written audit report will be required listing all corrective actions and recommendations be completed by the organization within a predetermined period of time. This post project audit report will be delivered to the organizational Board or senior committee that requested the audit. It is important that a follow up audit be arranged with the organization to re-audit those steps pointed out in the audit report. This is usually performed after six (6) months after completing the initial audit.

9.3 Realising Business Benefits

(Need content by CIPA standards team)

9.4 JAQ's

Joint Assessment questionnaires can be used by the affiliate independently at any time or they can be used as part of an official audit. When the JAQ's are used as part of a audit, keep the following points in mind: they are to be used in non-cycle areas, for example, cash intercompany, fixed assets and the following points. Both the CIPA and the affiliate management should agree to use Joint Assessment, when performing an audit. The following guide is then recommended and led by the CIPA member

- Questionnaires should be sent to the affiliate one month prior to the start of the audit.
- The questionnaires must be completed by the employees who actually do the work in that particular area. Management/Supervisors should not be completing the control questionnaires.
- The auditor should spend anywhere from half an hour to an hour reviewing the questionnaires with the affiliate.
- The auditor should limit his/her testing to those questions which pose the highest risk to the affiliate. For example, expense reports should continue to be tested in the area of Employee Receivables.

9.5 Conducting the JAQ sessions

Joint Assessment workshops are to be used in cycle areas, e.g., payments, revenue, and production. Keep the following points in mind when conducting workshops:

Adequate planning time is essential to a successful workshop. Workshop documents should be forwarded to the affiliate one month prior to the start of the audit.

- We suggest that workshops be conducted only if two of the auditors on the team have prior experience in that audit area.
- Try to hold the workshop in an area where participants will have as few interruptions as possible.
- It is best to allocate two full working days for each workshop performed.
- If possible, all audit team members should be present in the workshops.
- Selection of workshop participants should focus on individuals who directly influence the area under review, basically the "doers" of the process.
- Type and distribute an agenda which lists the participant names and titles, session times, and facilitators prior to the start of the audit.
- Answer and challenge each question fully before moving to the next question.
- Identify and highlight any report issues in the workshop so that the affiliate knows immediately the content of the audit report.

9.6 Conducting Initial Review of the Project or Program

It is imperative that project auditors assigned to audit an organization or project/program, understand that they will need to utilize a checklist to gather data around the project or program they are auditing. It may be warranted that the auditor setup an interview with the PMO Lead or Portfolio Manager at an enterprise level. Ensure that sufficient time is arranged when meeting with the identified staff. Focus on obtaining answers to the following information:

Project Controls Phase	Audit Steps / Activities
<p>General</p> <p>(Your aim is to look for anomalies or the lack of an approach or project framework that was applied to the project or program. Look for missing SDLC processes).</p>	<p><i>Details/Test:</i></p> <ul style="list-style-type: none"> • Determine if the project has an established project team, including a leader from Information Technology project area. <ul style="list-style-type: none"> - Is there a project steering committee and high-level sponsor who exercise control over the project? - Is the appropriate level of management involved in the project? (Refer – Stakeholder plan) - Does the project team have the level of authority to make the decisions concerning the project? - Does the project team have the appropriate level of expertise? (Refer – do a random check on resumes / CV’s) <ul style="list-style-type: none"> - In the technical (computer) area, and business area? - In particular do they have a successful track record with the specific development environment and software to be used in this project, especially if it is new technology - Does the project team include members from the user areas (all affected departments) as well as systems development, vendors, computer operations, audit, legal, compliance and all other appropriate areas? (The project team should be a team of experts, developing the system, at least for a large project. One would also expect the project team to report to a Steering committee, chaired by a senior level user. The Steering Committee, should among other things, be looking very carefully to see that regular milestones were included in the project plan. It is expected that reports from, and discussions with the project team manager on the achievements against these milestones.) - Is there a documented methodology that will be used for the project? (Refer – organizational SDLC toolkit) • Determine if a business justification has been generated and approved by the client management. <ul style="list-style-type: none"> - Does the request include documentation of the expected benefits to be achieved? (Refer – ROI or Cost Benefits)
<p>Feasibility Plan / Assessment</p>	<p><i>Details/Test:</i></p> <ul style="list-style-type: none"> • Determine if a project feasibility study has been written and approved by client management and the IS department.

(The aim is to look for anomalies or the lack of judgement in pursuing the project or poor decisions taken at this phase of the project or program. Look for steps that indicate poor approval processes or lack of governance).

- Does the study detail the scope of the project?
- Is a project management plan included? (**Not schedule**)
- Has a project budget been included?
- Does the budget appear realistic? (**How much contingency**)
- Has the appropriate level of management reviewed and approved the study?
- What provisions, if any, have been made for overruns, delays, and changes? (**Refer – Risk Plan or Risk Log**)
- Determine if the project team has an established project plan.
 - Is the plan written down? (**Check – and stored where**)
 - Do the time frames appear realistic?
 - Are the critical phases determined?
 - Does the plan require management/user approval at specified points?
 - Can the project be canceled at early enough points?
 - Has the plan addressed key risks in the project, are risk mitigation strategies in place and is there an ongoing process to update and review the risk register?
- Determine if the project plan included all the required phases of project discovery, development, testing, training, conversion, and implementation.
 - Does it cover all applications and areas concerned?
 - Does it cover all vendors?
 - Does it cover all interfaces to/from the application?
 - Does everyone involved in the project understand their level of involvement, roles, and responsibilities? (**Check R&R**)
 - Does it cover hardware and software additions, deletions or changes?
- Determine if the project plan was followed and any deviations documented, including extensions of the schedule.
 - Are all deviations documented?
 - Are all extensions approved by the project team and management?
 - Are all relevant parties notified of any extensions or changes to the project plan?
- Determine if the business proposal/contract for the system included all relevant information, including:
 - Reasons for the project
 - Scope of the project
 - Constraints of the project (financial, human, physical and software)

	<ul style="list-style-type: none"> - Costs and benefits of the project - Plans and schedules - User requirements <p>Expansion, growth and scalability</p>
<p>Design</p> <p>(The aim is to look for anomalies or the lack of an proper design practices. Usually poor design may lead to a poor product or service. Look for missing requirements, acceptance criteria, environmental regulations, processes).</p>	<p>Details/Test:</p> <ul style="list-style-type: none"> • Determine if the design of the system is thoroughly documented. <ul style="list-style-type: none"> - Are regular design sessions scheduled? (Check) - Are all areas covered for each application interfacing with the new system? - If this design is for a complete replacement of an existing system is the old system documented and understood? - Are the specifications documented? <ul style="list-style-type: none"> - Data files, Interfaces, Screens, reports - Procedures - Infrastructure - Documents - Are all existing and required accounts, products, and services known and documented? • Determine if detailed user requirements have been developed. • Are calculations, formulas used? (Determine accuracy) • Are report specifications and frequency included? • Is system response time included? • Have the security requirements been documented? • Has the operating environment for the new system been documented?
<p>Project Training</p> <p>(The aim is to look for anomalies or the lack of training on the project or program. Look for missing links to training or ineffective training classes – ask for survey results).</p>	<p>Details/Test:</p> <ul style="list-style-type: none"> • Determine if a training plan was developed and is in writing. • Determine that the training plan contains data entry training, backup, user operations, balancing, and reconciliation. <ul style="list-style-type: none"> - Are all aspects of the system covered: <ul style="list-style-type: none"> - Data entry, Backups, - Management reporting - Disaster recovery - User operations - Ongoing operations training - Balancing and reconciliation's - Does the training include vendor techniques?

	<ul style="list-style-type: none"> • Review the training plan to determine if training will be completed prior to implementation of the system. <ul style="list-style-type: none"> - Will critical personnel be trained early in the training? - Will the most critical employees be trained first? - Will there be staff trained to train others? - Are differences in account handling noted for training? • Determine who will be trained - management staff, entry clerks, etc. <ul style="list-style-type: none"> - Will there be different levels of training: Management reporting, data entry clerks, operations, Call centers? - Will all appropriate levels of staff be trained? - Will there be technical training for end-users? - Will training be mandatory rather than optional - pressure of “real” work can often be used as a reason not to attend training? - Will there be any method of evaluation at the end so that trainees can prove their competence to operate the new system, and the effectiveness of the training methods can be ascertained? - Is there a procedure to ensure future new starters will be trained? (Check to see if included in on boarding training) <p>If the system is to be used by individuals outside of the company how will training or instructions be provided so that they can make effective use of the system?</p>
<p>Testing Plans</p>	<p>Details/Test:</p> <ul style="list-style-type: none"> • Determine if the project team had developed a test plan. <ul style="list-style-type: none"> - Has the test plan been written? - Will there be system and acceptance tests? - Are the users included in the testing? • Determine if all aspects of the system will be tested, as outlined in the detail requirements, including, but not limited to: <ul style="list-style-type: none"> - Data entry - Editing - Reports - Calculations - Error reporting - Interfaces with other systems - Network communications - Print handling - Are all critical functions tested?

	<ul style="list-style-type: none"> - Are all existing capabilities tested? - Are all changes tested? • Determine when testing will take place and ensure it will be completed prior to implementation. <ul style="list-style-type: none"> - Does the test plan allow for retesting of errors and changes? • Determine if a parallel test will be run. Have the criteria for the termination of the parallel run been identified? • Determine if period-end, month-end, quarter-end, and year-end tests will be run, if needed. If there are period-end, month-end, quarter-end, and year-end processing, then these tests should be run. • Determine if volume and/or stress testing will be done. <ul style="list-style-type: none"> - Volume testing should include a "normal" processing day's transactions as well as a high-volume day's transactions, printing, etc. <p>Stress testing should include a more than normal or high-volume transaction testing as well as printing, etc. The stress test should try to "overload" the system. Stress testing should also test system response time in this situation.</p>
<p>Testing</p> <p>(The aim is to look for anomalies or the lack of an testing approach or framework on the project or program. Look for missing testing processes).</p>	<p>Details/Test:</p> <ul style="list-style-type: none"> • Determine if test data have been prepared. Does this include all possible conditions, including errors? <ul style="list-style-type: none"> - Have test scripts been prepared? (Refer – sample test scripts) - Have the test files been defined? - Are the data files synchronized? - Are the detail steps for the tests defined? • Determine if there are procedures developed to evaluate the test results. <ul style="list-style-type: none"> - Have predetermined results been set up in advance? - Is there a problem resolution scheme and logging procedure? - Is the logging and problem resolution consistent with other implementations? - Are the users included in the testing and evaluation of the results? • Determine if the expected test results have been defined prior to actual testing. <ul style="list-style-type: none"> - The test scripts should include all expected test results. - Have procedures been developed to monitor test results? • Determine if there has been a problem resolution procedure designed for those tests not meeting the expected results.

	Are unexpected test results logged and monitored?
<p>Measuring Results</p> <p>(The aim is to look for anomalies or the lack of an how the project staff measured the success of meeting milestones, deliverable acceptance, etc applied to the project or program. Look for missing approval processes).</p>	<p>Details/Test:</p> <ul style="list-style-type: none"> • Determine if there was user acceptance of the final test results. <ul style="list-style-type: none"> - Have standards for the final acceptance test been established? - Has the user department management reviewed the system performance and approved of the results? - Has the user department identified any inefficiency in the system? - Can these be corrected? Is so; will they be prior to system implementation? • Review the test results and determine if there are unexpected results. <ul style="list-style-type: none"> - Are unexpected test results evaluated to determine the reasons for the variance? • Determine the follow-up on those unexpected results. <ul style="list-style-type: none"> - Are program corrections made if needed? - Are the problems retested after correction? • Follow those unexpected results deemed of a critical nature to ensure adequate resolution. <p>Determine if those tests with unexpected results were adequately retested after correction to the program, etc. All results that deviated from the expected should be retested.</p>
Transitioning	<p>Details/Test:</p> <ul style="list-style-type: none"> • Determine if the implementation of the system was adequately planned. <ul style="list-style-type: none"> - Determine if there is a written implementation plan in place. <ul style="list-style-type: none"> - Does the plan include responsibilities for all areas involved? • Determine if there is a problem resolution scheme in place for the installation/ conversion phase. <ul style="list-style-type: none"> - Is there a "help" desk and personnel available? - Is the vendor or SME(s) available for problem resolution? - After installation and "shake-out," is the maintenance staff ready and able to take over? - Do the users know where to go to get help? (Check) • Determine if there is a backout plan included. <ul style="list-style-type: none"> - Does the backout plan define when the backout would be invoked? (Refer – Back out Plan, Contingency Plan) - Does the back out plan include procedures necessary to re-

	<p>implement the old system, if needed?</p> <ul style="list-style-type: none"> - Does the backout plan require approval from management prior to implementation of the backout? - Does the backout include procedures for all affected areas? - Does the backout plan include a means to notify all areas/users that the installation failed? <ul style="list-style-type: none"> • Determine if all software required for the successful implementation has been written (if coded in-house) or obtained from the vendor. <p>Determine if all required Job Control Language (JCL) and computer operations procedures have been written and included.</p>
<p>Implementation</p> <p>(The aim is to look for anomalies or the lack of an effective implementation roll-out plan that was applied to the project or program. Look for missing deployment processes).</p>	<p>Details/Test:</p> <ul style="list-style-type: none"> • Determine if there was a problem resolution scheme for the installation phase. <ul style="list-style-type: none"> - Is there a "help" desk and personnel available? - Is the vendor available for problem resolution? - After installation, is the maintenance staff ready and able to take over? - Do users know how to get help when the installation team leaves? • Determine if there is a written plan and schedule for hardware installation. <ul style="list-style-type: none"> - Does the plan include an installation schedule? - Does the plan appear reasonable? - Will all components be installed prior to the scheduled implementation? - Have there been contingency plans developed? • Determine if the equipment has been ordered in time for installation prior to implementation. <ul style="list-style-type: none"> - Is there a contingency plan developed in case of delays? • Determine if any required changes to the site have been made for completion prior to implementation. • Determine if the equipment and hardware were delivered and set up as required. <ul style="list-style-type: none"> - Are the serial numbers and descriptions recorded? - Is the inventory list updated? - Are there inspection reports? - Was the equipment tested when installed? - Was there a sign-off of acceptance by the user departments? - Was the user department notified of the installation date? • Determine if all required components have been identified,

	<p>including computer (PC, micro, mini, etc.), printer, modems, etc.</p> <ul style="list-style-type: none">- Is the equipment ordered within the established project budget?- Were all vendors considered?<ul style="list-style-type: none">- Terminal vendor- Modem vendor- Phone company- Electricians- Carpenters/construction- Has the site been reviewed recently?- Are current floor plans available?- Are there facility changes planned?- Are all needed other equipment considered?<ul style="list-style-type: none">- Desks- Tables- Cables- Counters- Other machines (adding machines, fax, etc.)• Determine if the site has been reviewed thoroughly to determine the physical layout of the installation of the hardware.<ul style="list-style-type: none">- Are all design changes made? (Refer – view change controls made during this phase)- Were all wires pulled and connectors installed? <p>Were all telephone lines / Internet access installed?</p>
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10 How to Establish an Audit team

Nowadays audit skills are in high demand and it is difficult to retain top talent. IAPPM recognises that establishing a specific team is difficult and therefore accepts the following two scenarios:

- Empower the PMO to have team members to fulfil this audit function
- Work with the auditing team within the company to allocate members to audit projects

10.1 Skills Required for Staff

Auditing a project or program takes considerable skill and one needs to be comprehend project management in its wider sense and then have the ability to get into the weeds. This takes experience and great analytical ability. The following skill are provided as a guideline:

Infrastructure Skills

Engineering Skills

Information Technology (IT) Skills

Contract and Subcontract Skills

Networking Skills

Information Assurance (IA) Skills

Financial Skills

Planning and Scheduling Skills

Project Skills

Portfolio Management Skills

Training and HR Skills

Compliance training – Internal company standards may apply to what training is required

10.2 Training the Audit Team

The audit team will need to be highly trained in both audit training and be able to navigate themselves through various aspects of projects or programs within a customer project organization.

11 Engaging the Audit Team

11.1 Budgeting for the Audit

11.2 Pre-Audit Checklist

Audit Conference – Day 1 onsite

Audit – Day 2

Audit – Day 3

11.3 Communications

11.4 Travel

Once assigned to audit or assess a troubled project or program, it is likely that the initial sessions or bulk of the audit will take place at the primary project location, where the bulk of the resources or development has taken place. As with most projects or large programs, global deployments are a part of life and travel to certain regions will likely be needed to interview staff or to assess physical conditions in these locations. For example, a global project launched in the USA has had some delays from the Asia Pacific region and further audit assessments reveal that detailed assessments are needed in both Australia and Japan. The audit team will need to be aware of the size and complexity of the project/program being audited as this may effect the duration of the audit.

11.5 Geographical Barriers and Cultures

Since IAPPM is an organizational organization it is key to note that your projects may

12 Project Audits Governance

12.1 Governance around Project Audits

Project Management is a maturing profession. xx

12.2 Audit Governance Team

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12.3 Types of Recommendation to Expect from Audit team

xx

Audit Activity	Who
Cancel Project ASAP	Sponsor
Approve or Disapprove Major Schedule Slip	Sponsor
Approve or Disapprove Utilization of Internal Funds	Sponsor
Approve or Disapprove Utilization of Extra Personnel	Sponsor
Replace PM	Sponsor
Replace Key Personnel	Sponsor

12.4 Audit Meetings

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13 Project Recommendations and Best Practices

The following area of responsibility should be used to help determine the appropriate course of action on a project or program to supplement the project audit.

13.1 Team Building

Project Managers need to be effective team builders. Today's projects rely on strong leadership of the Project Manager to guide the activities of the team. Creating a team is important because each member needs to understand their role and how they work toward attaining the goals defined by the Project Manager. Project Managers need to continuously improve team building by training, attending seminars, or reading articles/books.

13.2 Group Awareness of Issues

Project Managers need to understand how groups function in order to deal with them effectively in their roles as either project or program manager. Groups of people, it turns out, tend to behave in fairly predictable ways. Understanding how the groups you are in -- or groups that you lead -- are likely to behave can give you a tremendous advantage at work and in other areas of your life.

13.3 Techniques for Improving Projects

The following tips are supplemented to help a project manager in developing his/her team:

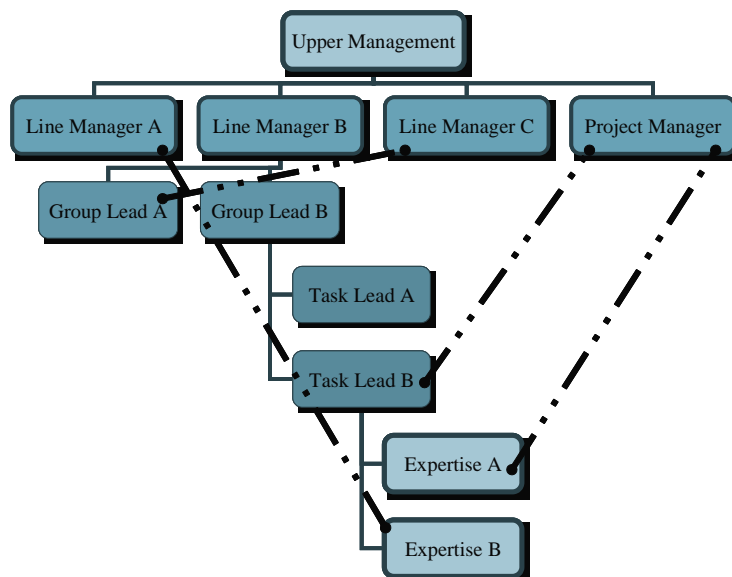
14 Conclusion

14.1 Project Manager Responsibilities

Let us conclude by insisting that we who are responsible for managing projects and programs, teams, departments or corporations must do so with uniqueness and diligence, ensuring that the organizations most vital assets, its people, are identified as valuable contributors to take their organization to the future. After all, someone within your organization may have the creative solution or be setting the trend you've been looking for. You need to ensure that they don't suffocate from doing the same things all the time. Times are changing, so must your organizations approach and so too your team members.

14.2 Program Manager Responsibilities

Program managers work across multiple groups with marketing and sales personnel. On the customer end, program managers translate customer requirements into product features and create functional specifications (www.microsoft.com). On the implementation end, they prioritize and deliver on those features, working closely with key technical resources, such as software development, testing, documentation, localization, tech support, and more (www.microsoft.com). A program manager typically reports to the Program Office (PO) in a business unit. This position is not typically a people management position, but a manager of a product or product family (www.rockwellcollins.com). This is accomplished through a matrix, not line, responsibility for individuals on the program. Below is a diagram displaying an example of a way that program management works. The line manager is responsible for the management of the individual but the costs, schedule, and tasks are management by the program manager who indirectly manages the employee. Therefore the program managers controls the cost while the line manager controls the resources to accomplish the task i.e. engineers, accountants, and financial analyst



14.3 PMO Responsibilities

The Program Management Office (PMO) is responsible for assisting the Program Manager to ensure program success. The physical make up of the PMO can differ from industry to industry. Generally within the PMO the types of roles to be found are the following; Program Manager, Deputy Program Manager, Subcontract Management, leads from various Integrated Product Teams (IPTs)

14.4 Executive Sponsorship Responsibilities

Executive sponsorship or the champion is responsible for championing the program or project. This role is essential in getting the PMO or Program Manager all resources needed. In the event the PMO or Program Manager encounters an obstacle the sponsor shall remove barriers allows the program to continue forward. An executive sponsor is generally an individual at a Director level or above such as a Vice President that has a great deal of influence. Xx

14.5 Steering Committee Governance

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14.6 Audit Manager Conclusion

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This guideline is based on IAPPM's experience, valuable input and client interactions. The opinions expressed in this guideline are those of IAPPM and do not necessarily represent those of other published works. We suspect that you will enjoy the manner in which this book has been presented with its logic, useful facts, findings and applications for everyday project and program management.

15 FAQs

➤ Q: How do CIPA reviews differ from the audits performed by other external auditors?

A: CIPA audits objective is to render an opinion on the fairness of the Company's consolidated financial statements and other financial information presented in the Company's Annual Report to their stockholders. While they periodically perform reviews of internal controls in major business areas of our affiliate operations, their scope typically is focused on testing the accuracy of ending balances. Starting in 2004, PwC will be increasing their review of internal control documentation, the effectiveness of the controls, and management's testing of internal controls to support their annual certification on the quality of consolidated J&J's internal control environment. This increase in scope is designed to comply with section 404 of the Sarbanes-Oxley Act. In addition, Internal Audit's review focuses on the internal controls of processes from initiation through reporting in the financial statements to Corporate. Our focus is to ensure assets will continue to be protected and transactions will continue to be processed accurately, completely, and within management's authority. In addition, we review for operational efficiency and other operational considerations not typically covered by a PwC audit. Internal Audit will also increase its review of internal control design documentation and management's test of controls to support compliance with the Sarbanes-Oxley act.

Q: Do you have a list of CIPA questions we can review.

A: IAPPM does have a script of past exam questions that are available upon request however these questions are not the exact questions that will be given during the exam.

15.1 Audit Checklist for Projects, Programs & Portfolios

It is important to note that during the audit, a checklist of key control areas needs to be tested. This can be complex or be kept simple, depending on organization and its size. For a brief introduction and start to the audit, review the following:

Project Management Controls - Project Plan	1a	What ensures that for each project there is a project plan that includes: a) A method for monitoring the time and costs incurred during the project, b) Scope, c) Objectives, d) Required resources and responsibilities, and, e) Progress measurement mechanisms? (e.g., actual completion of tasks against plan and actual delivery dates against milestones & deadlines)
Project Management Controls - QA	1b	What ensures project deliverables meet all affected parties' requirements (end-users, IT department, Security, Quality, etc.)?

Project Management Controls - QA	1G	What ensures project management has reviewed appropriate reports on the status of the project, including reports from quality assurance reviews?
Security and Risk Management	2A-C	What ensures all risks related to the project have been identified, measured, and mitigated (via internal controls or other means)?
Project Management Controls - Testing	1A	What ensures detailed test plans are created and used for every project?
Project Management Controls - Testing	N/A	What ensures that unauthorized changes to code after testing is complete but before deployment would be prevented or detected?
Project Management Controls - Testing	N/A	What ensures that configuration options selected and parameters set are appropriate to achieve business and application control requirements?
Project Management Controls - Training	1H	What ensures end-users and other affected parties are properly trained leading up to and after the roll-out and all related documentation is created/updated?
Analysis and Design	New	What ensures that the planned system effectively exploits the current or proposed computer hardware and software environment?

Analysis and Design	New	What ensures that appropriate application controls such as robust edits and validations, exception reporting, and control totals are included in the design?
Analysis and Design	New	How are changes to the initial detailed design approved and controlled?
Construction of in-house developments or package selection	New	What ensures that all dependencies between integrated applications are identified and considered so that functionality developed across teams and applications is coordinated?
Interfaces and Data Conversion	New	What ensures that critical system interfaces are modified to accept the new data model?
Data Conversion	New	What ensures that data fields are properly mapped from the legacy to the target system?
Data Conversion	New	What ensures data quality is considered for key fields in terms of the following: Accuracy, Integrity, Consistency, Completeness, and Existence?

Data Conversion	New	What ensures that the processing environment supports the required levels of data quality?
Go-Live Decision	New	What ensures that only the properly tested, reviewed, and approved version of the system is transferred into the live environment?
Post-Implementation Review	New	What ensures the project team can identify whether the project has delivered the planned benefits and whether the team has met all of its goals?

16 CIPA Glossary

Archival Records - Backup files stored - usually for a specified period of time.

Closed System - An environment in which system access is controlled by persons who are responsible for the content of electronic records that are on the system.

Computer System Validation (CSV) - A computer system specification confirmed by examination and provision of objective evidence that it conforms to user needs and its intended use and that all requirements can be consistently fulfilled. (Source: FDA (8/2001))

Digital Signature - An electronic signature based upon cryptographic methods of originator authentication, computed by using a set of rules and a set of parameters such that the identity of the signer and the integrity of the data can be verified. (Source: FDA (8/2001))

Disaster Recovery - The ability to recover in an acceptable period of time from a natural disaster or other event that causes a major computerized system failure and to ensure that users, operating systems and data are efficiently restored and fully operational and accessible with complete integrity intact.

Electronic Record - Any combination of text, graphics, data, audio, pictorial or other information representation in digital form that is created, modified, maintained, archived, retrieved or distributed by a computer system.

Handwritten Signature - The scripted name or legal mark of an individual handwritten by that individual and executed or adopted with the present intention to authenticate a writing in permanent form. The act of signing with a writing or marking instrument such as a pen or stylus is preserved. The scripted name or legal mark, while conventionally applied to paper, may also be applied to other devices that capture the name or mark.

Project Life Cycle – Is an ordered process of stages to help decision makers systematically make decisions, consists of above noted five phases: scope, project plan, launch, monitor/control, and closing the project.

Project Qualification (PQ) - establishing by objective evidence that the project in its normal go-live environment produces results that meet all user requirements. The equivalent of User Acceptance Testing.

Program Management Plan (PMP) – A plan developed specifically for the program that includes but not limited to displaying the program team, customer communication plan, internal communication plan, monthly reports, engineering environment, configuration management, asset management, intellectual property, risk & opportunity management, and project conclusion.

Off-the-Shelf Software (OTS software) - A generally available software component for which the user cannot claim complete software life cycle control. (Source: FDA (8/2001))

Open System - An environment in which system access is not controlled by persons who are responsible for the content of electronic records that are on the system. (Source: FDA (8/2001))

Qualification - Demonstrating that materials, equipment, ancillary systems, and manufacturing environments are capable of meeting pre-established requirements.e.g., Design/Installation/Operation/Process Qualifications.

Reliability - The ability of a system or component to perform its required functions under stated conditions for a specified period of time.

Sarbanes-Oxley/NYSE - Ensure continued compliance with the key requirements as determined by the SEC (regarding the Sarbanes-Oxley Act) and New York Stock Exchange.

Validation - Establishing documented evidence which provides a high degree of assurance that a specific process will consistently produce a product or end result which meet its pre-determined specifications and quality attributes.e.g., Validation Protocol, Validation Report