

xScion Project Methodology Overview (xPM)

The xScion Project Methodology (xPM) was developed to facilitate superior service delivery as well as formalize the methodology, oversight and Quality Assurance tasks associated with all of our project engagements.

The xPM adheres to modern industry standards as set forth in SEI's *Capability Maturity Model (CMM)* and PMI's *Project Management Body of Knowledge (PMBOK)*. Consistency with *CMM* implies a repeatable, quality-oriented approach to projects upon which Clients can depend. Consistency with *PMBOK* implies that our Project Management approach is thorough and issues are not missed or overlooked.

From a performance perspective, the xPM is based around four integrated concepts: Project Work, Project Management, Requirements Traceability, and Project Team Organization. These concepts all merge in an IT project (see Figure 1) to ensure a successful delivery. Specifically:

- **Project Work:** Staff Members perform work in an efficient, orderly fashion with opportunities for Client review and approval.
- **Project Management:** Project Managers manage work so Project Participants perform correctly and on time.
- **Requirements Traceability:** the resulting project delivers the solution the Client requested.
- **Project Team Organization:** The PM Team Organization can be a major factor in the success of a project. The xPM encourages an organizational structure that facilitates quality assurance, provides the ability to control changes, and ensures appropriate involvement from Client Executives and Staff in all of the affected areas within the Client's organization.

Overviews of the four integrated themes and the project organization structure follow.

Project Work

The Project Management Methodology organizes Project Work to correspond to the four-phase IT project life cycle:

1. **Feasibility.** The Project Management Practice Area and Project Management Team reviews the Client's high-level objectives or problems and investigates possible solutions to determine if feasible solutions exist.
2. **Requirements and Solution Analysis.** The Project Manager determines detailed Client requirements and identifies, evaluates, and selects a solution.
3. **Design and Construction.** The Project Team builds the solution, plans a conversion from old to new, produces documentation, prepares the

organization for the new system, tests and accepts the system, and prepares the system for implementation.

- 4. Implementation.** The Project Team implements the system, supports it while new processes are smoothed out and turns it over to Ongoing Support.

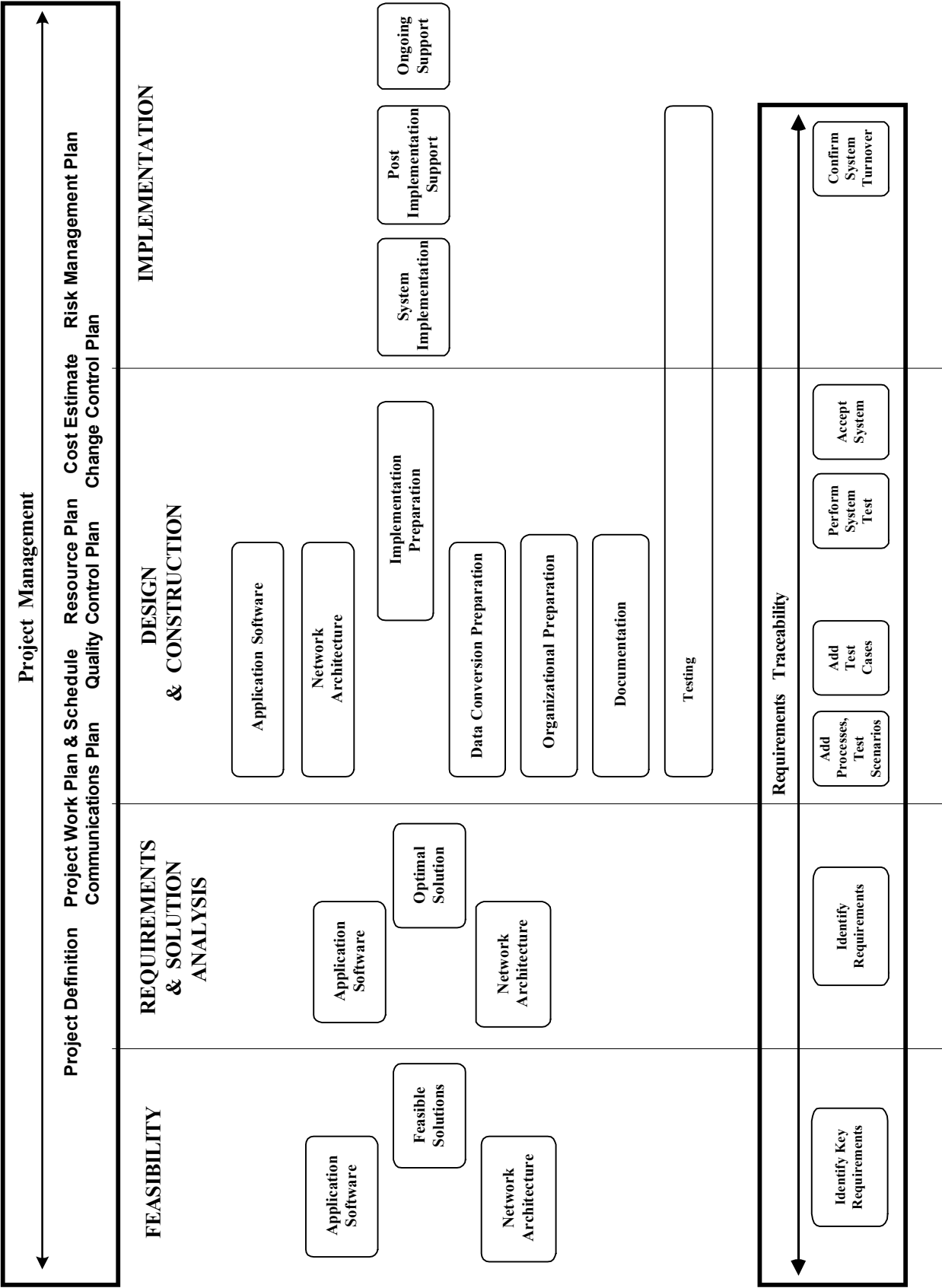


FIGURE-1. xPM Overview

Project Work Phases are divided into processes which are separated into activities. These activities can be subdivided into more detailed tasks.

- **Phase**—A narrative describes each phase and addresses its processes.
- **Process**—A narrative describes each process and addresses its activities.
- **Activity**—A narrative describes each activity and addresses its objective. It also describes actions, inputs, work products or deliverables, lists responsible Project Participants, includes any unusual communications required, and hints and examples that might be helpful.

A Document Section further defines major deliverables.

Each Phase contains an initiation process, several phase-specific processes, a final deliverable presentation process (typically to the Project Steering Committee), and a closure process.

In the first three phases, (Feasibility, Requirements and Solution Analysis, and Design and Construction), application software and network architecture processes are separate because activities are sufficiently different.

Project Management

An inherent part of the xPM, Project Management is based on an integrated Project Plan. The Project Plan often originates with the xScion proposal, and begins no later than project initiation. The Project Team reviews and updates it at each review point. The Project Plan is composed of eight components.

1. **Project Definition:** Defines original scope, objectives, and critical success factors.
2. **Project Work Plan and Schedule:** Identifies project work processes and activities, includes dates for completion and lists Team Members who will perform the work. The xScion Project Manager updates completed and in-process activities with actual effort to perform.
3. **Resource Plan:** Identifies all resources (people, technical, etc) required for project work as well as when they are needed, their duration on the project, and how they are acquired. It includes training needs.
4. **Cost Estimate:** Identifies known costs associated with the project.
5. **Risk Management:** Identifies and quantifies risks, constraints, and assumptions. Plans for minimizing high risks, including open issues and pending decisions.
6. **Communications Plan:** Identifies preferred method, frequency and individuals responsible for all communication.
7. **Quality Assurance Plan:** Identifies when to hold reviews as well as Review Team Participants.
8. **Change Control Plan:** Identifies how to request and approve changes to already-approved deliverables; includes software configuration management.

Together, these components keep Project Managers focused on all key project management areas throughout the engagement to ensure that all problematic issues are detected and resolved early.

Requirements Traceability

Requirements traceability is a concept that originates in Requirements and Solution Analysis and is completed at Acceptance of the System. The primary tool for tracking requirements traceability is the Requirements Traceability Matrix that establishes all Client requirements in “ability to...” statements. The Matrix includes system features (e.g., ability to prepare a student transcript), performance considerations (e.g., ability to handle 40 online users with fast response time), and critical success factors (e.g., ability to generate yesterday’s sales figures by the morning), etc. It should be all-inclusive, and the Client must agree that it includes all requirements.

The Matrix ties design features and test cases to the requirements. When Project Participants perform system and acceptance testing, they can check off each requirement to confirm it is satisfied. The Matrix helps ensure the Client is satisfied with the system and has no unrealistic expectations. This tool can be used throughout the life of the system to track changes and additions to functionality.

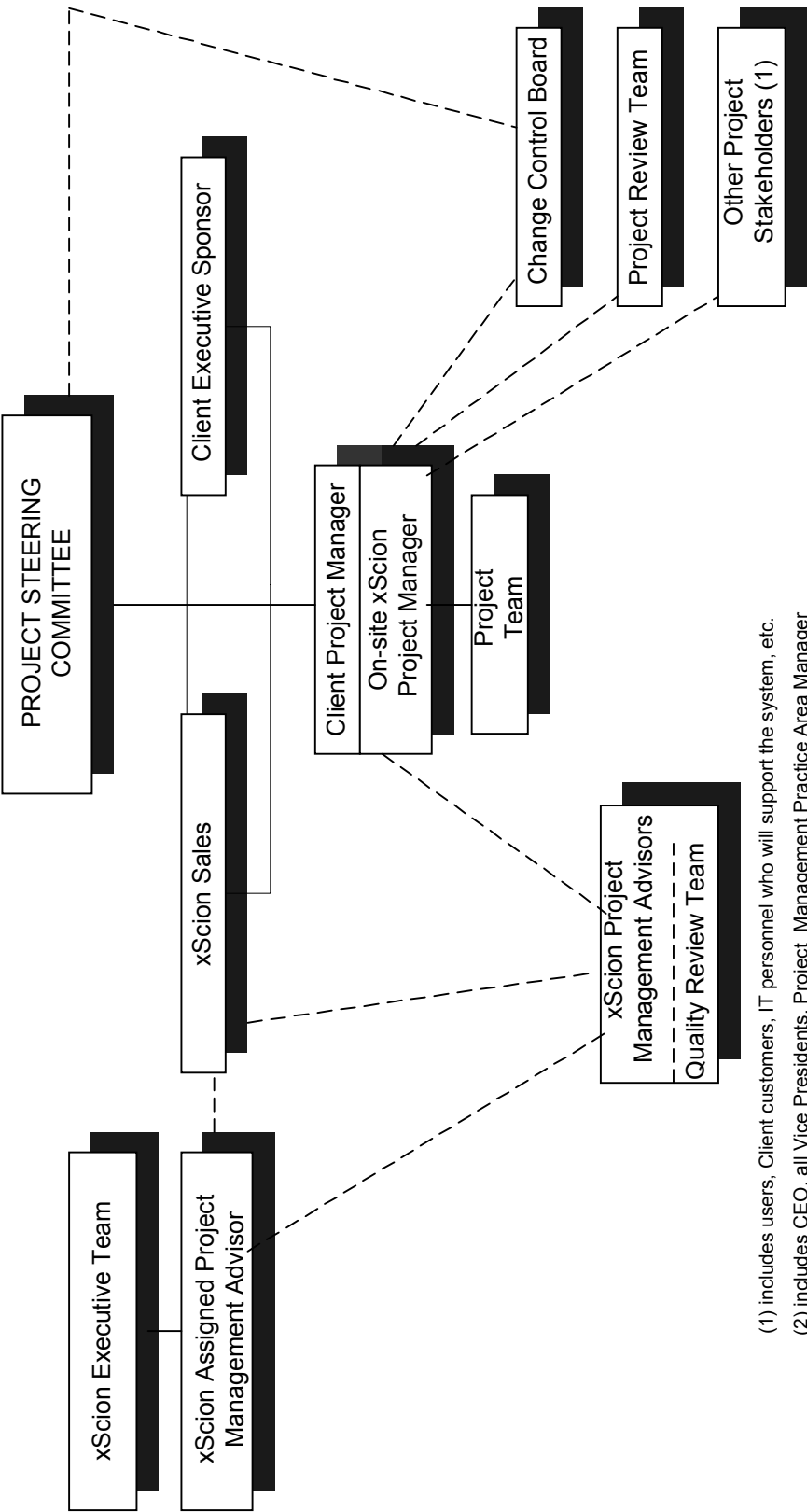
Project Organization

To undertake a project using the xPM successfully, the project requires an organizational structure that facilitates and ensures Client participation. It must also allow for change, deliverable review and approval, and quality assurance. Figure 2 depicts the Project Organization.

The on-site xScion Project Manager and Client Project Manager work together as a team, assigning work to both xScion and the Client Project Participants. Although the on-site xScion Project Manager probably performs most project management, the Client supports project needs, resolves issues in a timely fashion, participates in requirements and design sessions, and actively takes part in reviewing deliverables. The Client Project Manager is also responsible for confirming deliverable approval/acceptance. It is not uncommon for the Client to take on many non-technical responsibilities (e.g., many or most activities under Organization Preparation). In addition to the Client Project Manager, it is important for the Client to designate the following:

- **Client Executive Sponsor:** an Executive with a stake and interest in the system. Communication between the Client Executive Sponsor and the xScion Executive Team helps ensure a successful project and continuing involvement.
- **Project Steering Committee:** typically composed of Executives responsible for go/no-go and major budgetary decisions; usually includes the Client Executive Sponsor.
- **Change Control Board:** a group that reviews desired or required changes to the project scope or to previously approved deliverables.

- **Project Review Teams:** Project Review Team Members may change depending on what they are reviewing. Functional Managers review deliverables involving requirements; Technical Managers review design deliverables.
- **Project Stakeholders:** System users or Client customers affected by the system. Consider Project Stakeholders in system communications and Organization Preparation activities.
- **Project Work:** Staff Members perform work in an efficient, orderly fashion with opportunities for Client review and approval.
- **Project Management:** Project Managers manage work so Project Participants perform it correctly and on time.
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(1) includes users, Client customers, IT personnel who will support the system, etc.
 (2) includes CEO, all Vice Presidents, Project Management Practice Area Manager

FIGURE 2. Project Organization Chart

In small projects, the Client Manager, Client Executive Sponsor, Project Steering Committee, and Change Control Board may all be one person. For large projects, more than one Change Control Board and Client Project Manager may be necessary.

xScion provides outside participation on the project for Quality Assurance purposes. For each project, xScion assigns a Project Management Advisor who participates in Quality Reviews (held prior to Project Reviews with the Client) to ensure deliverables are logical, of professional quality, and adherent to the xPM. The Project Management Advisor works with the on-site xScion Project Manager to improve deliverables, and reports findings to the Executive Management Team.