

Project Management Methodology Overview

The objective of this methodology is to provide standard project management methods and guidelines for managing projects at the State of Arkansas Department of Information Systems (DIS) in a disciplined, well managed, and consistent manner that promotes delivery of quality products and meets the customer's expectations for completion of the project on time and within budget.

This section provides the overview, description and purpose of the methodology used by the Project & Enterprise Program Management Office at DIS. This methodology provides a standard management approach for implementation of new projects and revisions to existing programs. The DIS project management methodology will ensure that DIS projects are managed using the well defined disciplines of the Project Management Institute (PMI). The methodology used in this document is based on the Project Management Book of Knowledge, *PMBOK®*, written by PMI.

Definition of Project & Project Management

“A project is defined as a temporary endeavor undertaken to create a unique product or service,” - *PMBOK®*.

A project is considered to be a temporary endeavor because the project goal is to accomplish a defined objective, i.e. implement a specific product or create a certain process. Because of this objective the completion point of the project must be defined and agreed upon with the stakeholders in the Initiation Phase of the project.

Project Management is the use of knowledge, skills, tools and techniques to project activities in order to better facilitate the stakeholders' expectations.

Stakeholders

Stakeholders are defined as:

“Individuals and organizations that are actively involved in the project, or whose interests may be positively or negatively affected as a result of project execution or project completion. They may also exert influence over the project and the results,” - *PMBOK®*.

In order to accomplish the stakeholders' goals and expectations, projects need a clear definition of the business opportunity with well-defined goals.

Project Constraints and Success

All projects have constraints and these need to be identified at the beginning of the project. Projects have resource limits in terms of people, money, time and equipment. Constraints may be adjusted up or down as the project dictates but they are considered fixed resources by a project manager. These constraints form the basis for managing the project and are discussed throughout this methodology.

Well defined goals will ensure a successful project. The basic criteria for defining project success can be found by answering, "Why are we doing this project?" Criteria for project success are quantifiable, measurable, and expressed in terms of business value metrics. They include:

- Customer.
- Project (containing a purpose or an objective).
- Scope.
- Deliverables.
- Start and End Dates.
- Sponsor.
- Identified Resources.
- Project Manager.

Components to Project Success

There are three main component questions that need to be answered to ensure the success of projects. They are:

1. Does the product/system meet the predefined business needs and goals? This includes business objectives of cost reduction, increased revenues, better customer service, improved productivity, etc.
2. Does the completed project match the requirements document?

3. Was the project completed as defined by scope, on time, and on budget?

Project Phases

All projects are unique and take on a different form that presents many degrees of uncertainty. Managing these projects dictate that organizations divide them into manageable pieces called project phases. Collectively these phases are known as the project life cycle. The project life cycle methodology is divided into five project phases that are listed below:

1. **Initiation** - This phase defines and organizes the project. Project justification is outlined in this phase.
2. **Planning** - In this phase a workable project plan is developed that will accomplish the project.
3. **Execution** - Coordinating and allocating resources and people take place in this phase.
4. **Control** - Throughout all phases of the project, objectives are monitored and measurements of project progress are computed. If variances are discovered, corrective actions are initiated to overcome the problems. Open communication among all project team members is needed in all phases of the project for success, but in this phase it is imperative.
5. **Closeout** - This phase formalizes acceptance of the project or product with the customer and documents lessons learned.

Iterative Process

Project management is an iterative process where the beginning of one phase often overlaps the ending of another phase. In some instances, phases may be repeated throughout the life cycle of the project. Phases may be performed sequentially or simultaneously. For example, planning, execution and control may all be performed in parallel as changes are made to the project baseline.

Nine Knowledge Areas

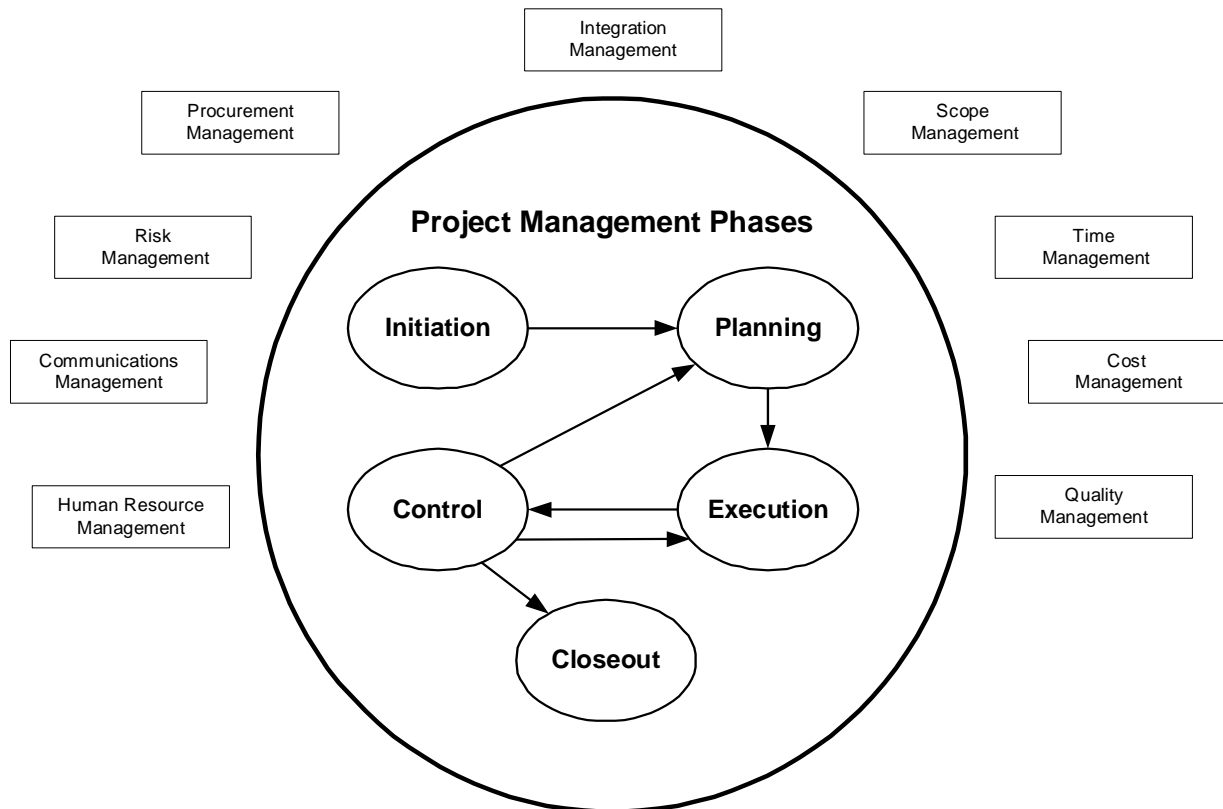
Included in the project phases are nine knowledge areas. The knowledge areas are integrated in all phases throughout the project. These tools enable the Project Manager to ensure all projects are conducted in the most organized, efficient manner. They are:

1. **Integration Management** - Includes the processes required to ensure that various elements of the project are properly coordinated.

2. **Scope Management** - Includes the processes required to ensure that the project includes all the work required, without additional and unnecessary work, to complete the project successfully.
3. **Time Management** - Includes the processes required to ensure timely completion of the project.
4. **Cost Management** - Includes the processes required to ensure that the project is completed within the approved budget.
5. **Quality Management** - Includes the process required to ensure that the project will satisfy the needs for which it was undertaken.
6. **Human Resource Management** - Includes the processes required to make the most effective use of people involved in the project.
7. **Communications Management** - Includes the processes required to ensure timely and appropriate generation, collection, dissemination, storage, and ultimate disposition of project information.
8. **Risk Management** - Is the systematic process of identifying, analyzing, and responding to the project task.
9. **Procurement Management** - Includes the processes required to acquire the goods and services to attain project scope from outside the performing organization.

The relationship between the five project management phases and the nine knowledge areas are depicted in the Figure 1.1.1:

Figure 1.1.1
Project Management Phases and Knowledge Areas



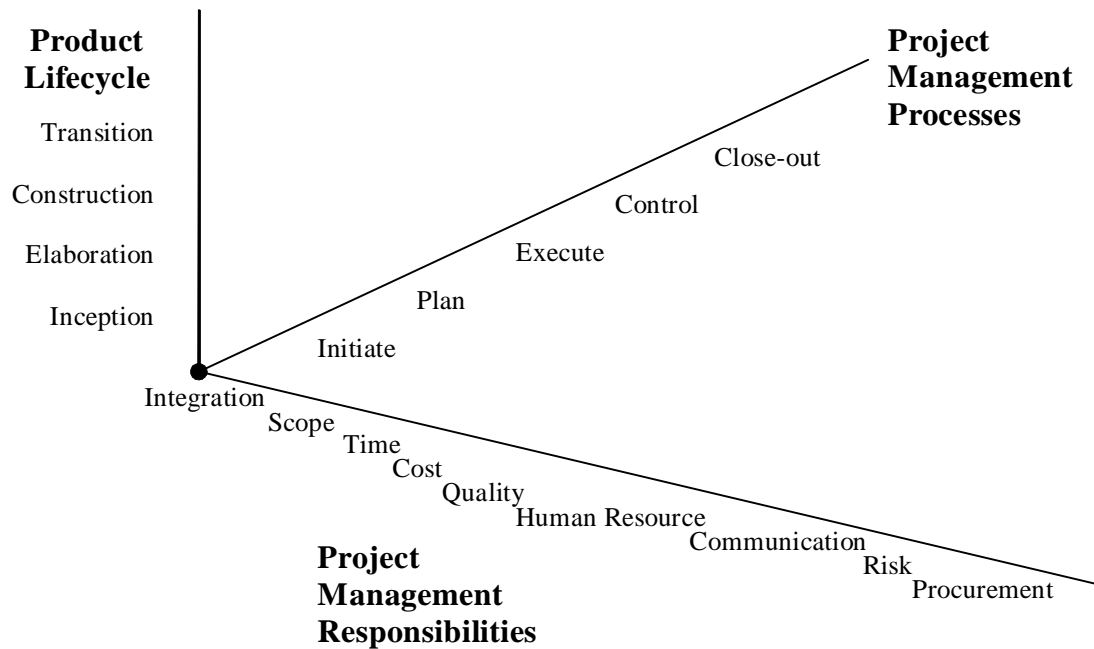
Software Development Projects

Project implementation and management for software development at DIS utilizes the Product Lifecycle Methods from the Rational Unified Procedure (RUP) and traditional Project Management Processes.

The management of a software development project can be viewed in three dimensions as shown in Figure 1.1.2. The Product Lifecycle axis describes the work to be done to deliver the product. One pass through the four phases is a development cycle; each pass through the four phases produces a generation of the software. These processes are repeated in subsequent cycles that are called evolution cycles. The Project Management Processes axis delineates five project management processes that must be performed for every project and every

phase thereof. The Project Management responsibilities axis lists nine areas of responsibility that must be addressed by the project managers during each of the five project management processes for all projects.

Figure 1.1.2
The Three Dimensions of Software Development Project Management



Project Management Skills & Techniques

Successful project management requires that certain infrastructure components are in an organization. Many of these components are basic people management skills, organization skills, time management and communication skills. Project management also requires the application of these principles with the ability to work well with people, to take responsibility, to make decisions and to lead people.

The methodology created in this document provides the framework for Project Managers to accomplish their project tasks in an organized and well defined process. This methodology also provides the Project Manager with many of the tools and techniques needed to manage successful projects. Each of the five project management phases are described in detail in sections located in this document. Templates that support these five phases are listed in the Appendix.