

1310.07 Systems Development Lifecycle (SDLC)

Issued: December 11, 2000

SUBJECT: Systems Development Lifecycle (SDLC)

APPLICATION: Executive Branch Departments and Sub-units.

PURPOSE: To establish a Systems Development Lifecycle (SDLC) for the State of Michigan that manages and monitors the systems development projects by establishing a formal systems development methodology. This lifecycle is based on the Project Management Methodology and is consistent with best practices in use by industry.

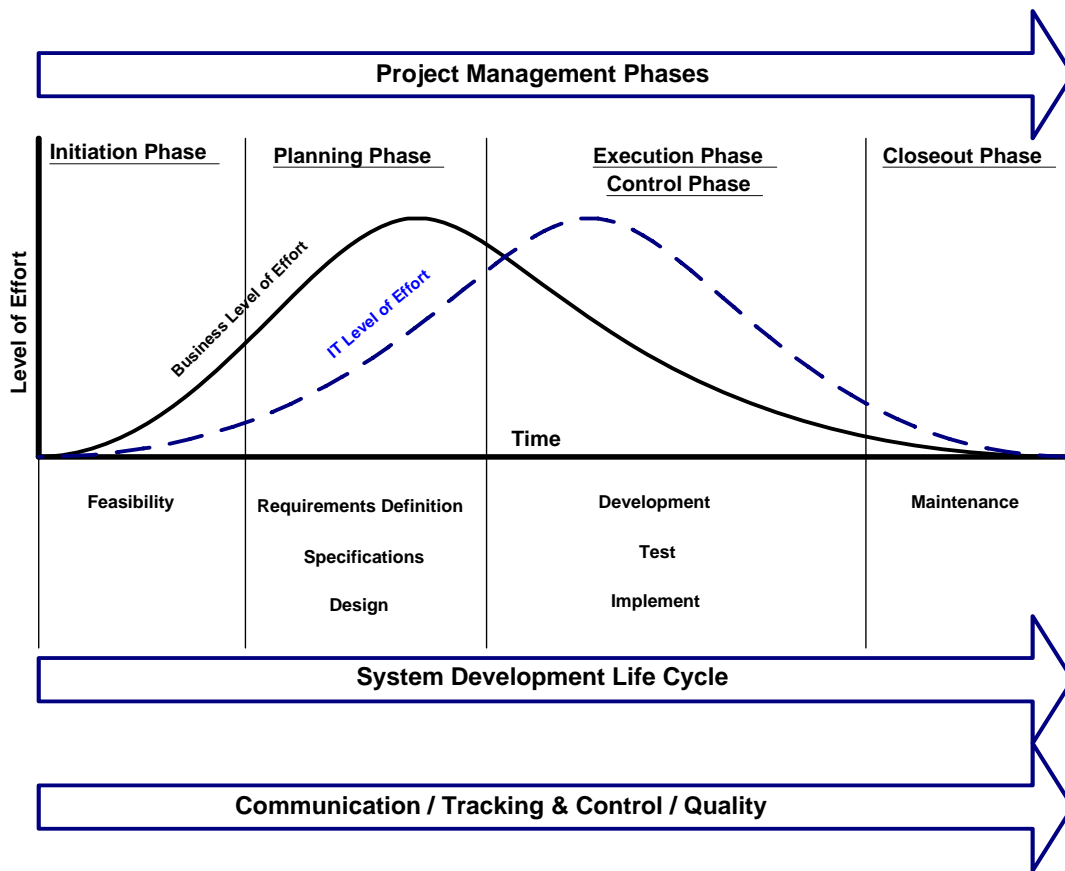
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SUMMARY: IT projects consist of applying the people, process, and tools to initiate, plan, execute, control, and close out projects relating to computer-based information systems. IT deliverables are normally created using what is referred to as the System Development Life Cycle (SDLC). The SDLC is a very detailed and specific set of procedures, steps, and documents that carry a project through its technical development. It is intended as a guide to assist in deciding on what project management concepts must be applied during the SDLC development of an IT product to ensure that a quality deliverable meets or exceeds customer expectations.

Each Executive Branch Department and Sub-unit should follow established informational processing system methods.



SDLC is broken down into five phases:

- Initiation Phase
- Planning Phase
- Execution Phase
- Control Phase
- Closeout Phase

Within these phases, several SDLC processes are performed (e.g., requirements definition, design, development, testing, operations). These processes have been created and are maintained at an agency level.

The Procedure 1380.02 and the enterprise Project Management Methodology should be referenced for further explanation of all tasks of the SDLC.

APPLICABLE FORMS: None.

PROCEDURES:

- **Initiation Phase:**

Information technology projects must have a starting point. Once a need has been recognized for a new IT product or service, several processes must take place for the project to be defined more clearly and approved. Within the Systems Development Life Cycle, a Feasibility Study Document will be completed. The creation of this document interrelates with the project manager's responsibilities of putting together a product description, synthesizing a business analysis, and drafting a Project Concept Document and a Project Charter.

- **Major activities of Initiation Phase:**

Support

Establishment of:

- Goals & Objectives
- Possible Approach
- Resource Needs
- Other

Product Description

Project Feasibility

Concept Document

Project Charter

- Project Manager Skills and Responsibilities

Key Products of the Initiation Phase

Feasibility Study

- **Planning Phase:**

Project Planning is the most important phase of information technology projects. It is during this phase that the document baseline and processes that will be used to guide all the work to be done in the project will be created. Being able to manage communication, budgets, risk, and the other assorted project management competencies is of infinite importance because these processes create the infrastructure that allows technical project staff to commit themselves to producing quality documents and deliverables.

Major activities of Planning Phase:

Project Scope

Work Breakdown Structure

Cost Benefit Analysis

Resource Plan

Schedule Development

Risk Planning

Quality Planning

Communications Planning

Project Budgeting

Planning Summary

Key Deliverables of the Planning Phase:

Work Statement
Requirements Documents
Solutions Documents
Specifications Documents
Design Schedules
– Detail Design Documents
Implementation Plan

- **Execution Phase:**

During the execution phase the SDLC the actual information technology project is developed. Testing is the actual test of the products or processes created within the Development Phase. Implementation involves putting the tested and approved products into an operational environment for use by the customer. Documentation includes the creation of written operations manuals, standards, systems outputs, and performance reports that document the requirements and use of the product. All of these components combined provide the basis for the SDLC within the Execution Phase.

Major activities of Execution Phase:

Project Administration
Contract Administration
Risk Management

Key Deliverables of the Execution Phase:

Development
Testing
Implementation
Documentation

- **Control Phase:**

Control is vital for keeping projects within scope, cost, schedule and within acceptable quality because there are so many variables that may come into play. IT projects often deal with unknown or unproven technologies that make these projects difficult for the project manager to baseline the scope, schedules, and costs during the Planning Phase.

Project control in information technology is a combination of formal and informal processes that work together to keep a project moving forward while evaluating changes, redefining planning efforts, and making decisions that could effect the outcome of the project as a whole.

Major activities of Control Phase:

Scope Control
Schedule Control
Cost Control
Quality Control
Risk Control
Contract Administration
Configuration Management

Key Deliverables of the Control Phase:

Develop
Test
Implement
Documentation

• **Closeout Phase:**

The intent of the Project closeout process is to bring closure to the activities that have been carried out in the Execution and Control Phases. The process for information technology projects is basically the same as for non-Information Technology projects. The project manager is responsible for ensuring that the common closeout processes are carried out while the developed systems are rolled over into maintenance mode.

Major activities of Closeout Phase:

Project Administrative Closure
Project Financial Closure
Project Audit

Key Deliverables of the Closeout Phase:

Maintenance
Service Level Agreements

PROCEDURE
MAINTENANCE:

Agency: Any and all projects, consulting requests, equipment and software acquisition requests, or ITB's relating to Systems Development Lifecycle (SDLC) will be subject to review for compliance with these guidelines by the Standards Division, Bureau of Strategic Policy (BSP)

This guideline forms the core of the State's policy for management of information technology projects. All newly initiated information technology based projects should utilize this procedure for guidance.

DIT: The BSP Standards Division and the Enterprise Standards Review Team (ESRT) will review this standard on a continuing basis and make recommendations to the State Chief Information Officer. An appropriate group of staff, representing a wide-range of state agencies, will review and possibly revise these standards and guidelines as often as needed.

Exceptions from this standard for reasons other than those outlined above will be made through the exception handling process described in the Exception Process Template.

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