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| Application Development |
| Project Plan Template |
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| [This project plan template is intended to be used as a guide for planning and managing real world software development projects. This plan is not a real plan and should not be used without modifications required for your unique project. |

Table of Contents

[1 Overview 3](#_Toc208906444)

[1.1 Project Objectives 4](#_Toc208906445)

[1.2 Project Constraints 4](#_Toc208906446)

[1.3 Project Risks 4](#_Toc208906447)

[2 Proposed Solution 5](#_Toc208906448)

[2.1 Business Requirements 5](#_Toc208906449)

[2.2 Architecture 6](#_Toc208906450)

[2.3 Development 6](#_Toc208906451)

[2.4 Testing 6](#_Toc208906452)

[2.5 Deployment 8](#_Toc208906453)

[3 Project Resources 8](#_Toc208906454)

[3.1 Roles and Responsibilities 8](#_Toc208906455)

[3.2 Issue Escalation 8](#_Toc208906456)

[3.3 Project Staffing Plan 8](#_Toc208906457)

[3.4 Project Materials 8](#_Toc208906458)

[4 Project Approach 9](#_Toc208906459)

[4.1 Development Model 9](#_Toc208906460)

[4.2 Configuration Management 9](#_Toc208906461)

[4.3 Communication Management 10](#_Toc208906462)

[4.4 Change Management 10](#_Toc208906463)

[4.5 Testing 10](#_Toc208906464)

[4.6 Documentation 10](#_Toc208906465)

[5 Estimate 11](#_Toc208906466)

[6 Schedule 11](#_Toc208906467)

# Overview

The intent of this document is to provide a sample application development project plan. The scope of this document covers the project planning phase and demonstrates how a Work Breakdown Structure (WBS) and associated Resource Breakdown Structure might be incorporated into key project documents. This document also provides a possible structure for presenting:

* Project deliverables
* Project risks and opportunities
* Estimates
* Project resource information
* Project delivery method
* Configuration and change management

A project manager would generally use this section of the document to provide an overview of the entire project.

**Need for project**

This section discusses why the project is being undertaken. There are many reasons for undertaking a project, including:

* Legislative or legal requirements (e.g. Sarbanes-Oxley)
* Competitive advantage
* Cost savings
* Benefit to your customers

**Challenges**

What known challenges will impact project planning and execution? These might include:

* Unresolved disparity in stakeholder requirements or expectations
* Unknown lead/delivery timeframe for a key project component (this would directly impact the scheduling critical path)
* Unknown technical or other method of implementation (e.g. the technology required for the project is new or as of yet fully developed)
* Project staff will require substantial training in order to complete project tasks

**Opportunities**

By implementing the project, what specific opportunities become available? For example:

* The software might enable trading in new financial markets, providing an opportunity to acquire new customers and earn additional revenue
* The resulting product may be deployable to other customers

## Project Objectives

This section should specifically list project objectives. These are the criteria which will be used to measure project success. For example:

* Complete application implementation by the end of FY 2009
* Provide a centralized management system of all customer related data, including billing, order and payment history and correspondence
* Provide a method of automatically distributing reports to select user groups
* Establish standards, implementation and management guidelines and project templates for subsequent software application deployment projects

## Project Constraints

Project restraints are typically related to quality, scope, budget and timeframe. Known specific constraints must be fully documented as early in the project planning process as possible. All stakeholders need to be made aware of these constraints, as they may pose an adverse risk to successful project completion.

## Project Risks

This section of the document needs to identify and qualify all project risks. At the very least, the following should be documented in the project plan:

* Event Risk -- What is the risk?
* Risk Probability -- How likely is the risk event to happen?
* Risk Impact -- What will happen if the risk is actualized?
* Risk Mitigation -- What can be done to reduce the probably of the risk occurring?
* Contingency Plan -- What can be done to reduce the impact of the risk?

**Risk Probability**

Risk probability analysis involves measuring the likelihood that an event will be actualized. Probability analysis usually includes quantification and assignment of a particular probability value (e.g. high, medium, low).

**Risk Impact**

It is important to be specific when defining the potential impacts associated with each particular risk. If, for example, the impact of a particular risk would be cost overruns, then a statement providing an estimated value would be more beneficial to the risk planning process. Impact analysis also generally includes quantification. The combined values of total probability and impact for a particular risk determine the overall risk for any particular risk element. This enables project stakeholders to properly weight and prioritize risk in a project.

**Risk Mitigation**

The purpose of risk mitigation is to reduce the probability that a particular risk even will occur. Risks with a higher probability and greater impact should be addressed first. For example, a major project risk could be delay in delivery of the production platform. This could be mitigated by earlier ordering of the hardware.

**Contingency Plan**

The purpose of a contingency plan is to reduce the impact of a risk that has been actualized. An example of a contingency plan might be to provide the customer with temporary hardware should the production hardware not arrive as scheduled.

# Proposed Solution

Provide an executive summary of the proposed solution here. Documenting the proposed solution is straightforward if you have created a deliverable oriented Work Breakdown Structure (WBS). A sample application development WBS is provided as a separate document, along with other TheProjectDiva.com application development sample project documents.

## Business Requirements

Using the deliverable oriented WBS, the business requirements deliverables for this example application development process would include details listed below. For this example, both the process for gathering business requirements as well as the resulting knowledge is documented for customer review.

**Evaluate existing processes**

What was done to understand the client’s business? This might include interviewing users regarding their current roles, existing processes, known issues, planned improvements or organizational changes and their overall understanding of the planned project. Evaluating requirements may also entail reviewing reports, legacy applications and data sources, financial statements, business or trading partner requirements or regulatory issues..

Specific findings which may impact project constraints or pose a risk should be documented. These might include:

* Users update multiple data stores with duplicated information. Data is often out of synch. The data will need to be synchronized before being migrated. This will require a substantial amount of application down time for the existing financial reporting application.
* Existing data stores span multiple platforms. Legacy data migration will require more time than originally anticipated.
* Integration with legacy accounting package is required. Accounting package has not been patched or updated in several years. Newer software versions are available from the vendor. A series of upgrades will be required before the accounting package can be integrated with the planned application. This will require substantial effort and should be considered as a separate project.

**Define new business rules and workflow**

After reviewing existing processes and soliciting feedback from users and stakeholders, the business analyst needs to document all of the rules and process improvements that will be captured by the application development project. Business rules would include calculations and logic. Workflow generally involves the relationships between objects, departments, user roles or components. Rules and workflow will form the basis of the application architecture and should be documented in detail.

**Define specific User Interface (UI) requirements**

The interface is the first application component that users experience. If the users are unsatisfied with the interface, then regardless of whether or not the underlying business logic and workflow meet project requirements, the project will not be a success. It is absolutely essential to involve users in the project as a whole and the interface in particular as early in the project as is possible.

**Define specific technology requirements**

This section of the project plan would define the technologies required for developing, supporting and maintaining the application.

## Architecture

This section of the document provides the technical blueprint of the application. Expect to use mock-up screenshots, sample designs, diagrams, workflow models (e.g. UML) and considerable detail in describing exactly how the application is going to work.

**Functional Specifications**

Functional specifications include details regarding how the application will interface with, for example, legacy applications, provide database models and describe the relationships between the different data entities, and detail how each component of the application interacts with every other component.

**Technical Specifications**

Technical specifications might include the following:

* Network Diagrams
* Platform specifications
* Development languages
* Peripheral specifications

**Security Specifications**

If security is integral to the application being developed, then consider a specific section to document the security specifications relating to the application and supporting infrastructure.

## Development

This section of the document would describe the features to be included in each release or phase of the development process.

## Testing

This section describes both he overall approach to testing as well as provides details on what will be tested, when the testing will occur and who will be responsible for the testing.

Software development is an iterative process, and is tested constantly. That said, only the testing process need be documented, especially if the testing requires client interaction or includes a formal feedback and bug reporting process.

Details regarding the formal feedback process should also be documented in this section. A sample bug tracking form can be provided. If you have access to web based bug tracking software, then the client should be informed that such tracking will be done electronically.

## Deployment

**Major Milestones**

This section should be used to define project milestones. Milestones are often times linked to a contract payment schedule. If this is the case for your project, then the milestones should be referenced in the payment schedule section of the project contract.

# Project Resources

## Roles and Responsibilities

This section of the project plan should define the various roles and responsibilities of the members of the project team. Also consider including their level of authority within their scope of responsibility (e.g. approve, support, or conduct).

If staffing is subject to change, then it is important to note that here.

## Issue Escalation

Project problems need to be resolved quickly. If no resolution can be made regarding the conflict, then the project manager and the client will need a path to escalate and manage issues.

## Project Staffing Plan

The project staffing plan lists the human resources and skill sets that will be required to complete the project. An application development project will usually require: project management and planning, systems design, business and technical analysis, programming, testing, documentation, network engineering, and training. Each skill set would be listed with a detailed description of the role.

Also consider including the Resource Breakdown Structure in this section of the project plan document. This provides a basis for cost estimating and is fundamental to understanding resource allocation during the course of the project.

## Project Materials

What other materials are required to complete the project? For most application development projects, this would include hardware, physical networking infrastructure, peripherals, co-location space and licensing.

# Project Approach

## Development Model

This section describes the application development to be used (e.g. Microsoft Solutions Framework, rapid application development, agile development). These methodologies are complimentary to standard Project management Institute (PMI) methodologies.

It is important to also describe the various stages or phases of development and detail which components or milestones will be delivered during each phase.

## Configuration Management

Configuration management plans usually define what items need to be controlled in a project – software , the various releases, hardware platforms and environments, and documents. Specifically, the following should be included:

**Components**

This section should list the specific tasks and items that need to be controlled during the course of the project. Examples may include:

* Build project baseline
* Implement code library system
* Define audit team
* Track changes in project baseline

**Tools**

This section describes the tools or techniques used in executing the configuration management processes. These may include, for example, software or code library management systems or forms and documents (e.g. change control submission, analysis and approval documentation)

**Reporting**

This section describes the reports issued by the project team and may include:

* Change History
* Release status reports
* Project Baseline analysis reports
* Audit data

**Archiving**

Define what should be archived and the length of archival time.

**Archive Control and Audit Review**

## Communication Management

A communications management plan defines how information will flow throughout the duration of the project. This can include specific requirements, such as access to a satellite phone should project members be out of cell range, as well as specific documents or correspondence formats that are required for the project. The plan should detail who is responsible for distributing what information, how often the information needs to be distributed, and to whom the information will be sent. This can include, for example, a schedule for team meetings and a list of the team members required to attend or a status report distribution list with proposed reporting format.

## Change Management

All projects must deal with changes, either anticipated and planned or unexpected. A formal change management policy is designed to specifically address planned changes to evaluate their impact of the existing project schedule and budget and to provide accountability and ownership changes. Each project will have different change management requirements. Nearly all such management policies, however, need to include:

* Name of change initiator
* Documentation regarding the nature of the change
* Change impact analysis
* Change rejection / approval

The Microsoft Solutions Framework (MSF) development process integrates change management into the core development methodology. It is important that clients understand the change management process, especially considering the impact of change on the project schedule and budget.

## Testing

A testing plan is usually developed as part of the functional specification phase of the development project. This provides for a detailed test plan, as the analysts developers understand more about the components that will require testing. Testing should be done both in a test environment and also within the intended production environment. This will minimize issues associated with configuration variances.

This section should provide details associated with the test process: the project role (and individual, if a specific person has been identified) responsible for testing, other human resource requirements and a schedule for testing (or associated milestones).

If an application will be used to track bugs or provide testing feedback to the development and management group, then this should be documented here as well. Otherwise, feedback documentation should be provided in the project plan.

## Documentation

This section details what documentation will be delivered during both the course of the project and at project end. Clients are usually most interested in system administrator and user documented. It is important to document how the information will be provided – in electronic, physical media format or perhaps both.

Documentation is a project deliverable, just like the User Interface. Expect to provide clients with several versions for review.

# Estimate

This section should be used to detail the project’s cost estimate. There are many methods to estimating project costs. All methods require basic information relating to scope, timeframe for delivery and resources available. In the associated TheProjectDiva.com application development sample project documents, a cost estimate is provided. This estimate uses input data from the Work Breakdown Structure to create a Resource e Breakdown Structure document. It is this Resource Breakdown document which provides the basis of the cost estimating template.

# Schedule

The project schedule can be completed only after all project tasks have been defined and prioritized. The schedule is one of the last components of a project plan to be completed.