

COMPANY NAME

RISK MANAGEMENT PLAN PROCEDURE

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Revision History

Update the revision information in this section each time the procedure is changed and re-approved.

Document Version	Revision Date	Originator	Revision Description
1.0	xx-xx-20xx	Flo Samuels	Initial Release.
1.1	xx-xx-20xx	Flo Samuels	Reasons for revision.
1.2	xx-xx-20xx	Flo Samuels	Reasons for revision.
1.3	xx-xx-20xx	Flo Samuels	Reasons for revision.
1.4	xx-xx-20xx	Flo Samuels	Reasons for revision.

RISK MANAGEMENT PLAN PROCEDURE

1. Introduction

1.1. Purpose

This procedure describes how to identify, classify, and control or eliminate risks that could affect the successful completion of a project. This includes defining project scope, assumptions and constraints so that the risk assessment can be developed within correct project parameters.

1.2. Objectives

1. To explain the concepts of Risk Management.
2. To define project assumptions and constraints.
3. To describe a method for identifying, classifying, and prioritizing risks to ensure only the most important are addressed.
4. To describe methods for controlling risk.
5. To define the frequency and methods for monitoring and evaluating the Risk Management Plan.
6. To provide a means for team members to identify potential risks during the software project's life cycle.

1.3. Definitions

Development Manager: Responsible for the design, code development, testing, and defect correction of new and existing systems prior to deployment to production. May also be responsible for use cases and/or requirements.

Product Manager: Responsible for interface with internal and external customers relative to the development of use cases and requirements for new systems, for changes to systems under development, or for enhancements to systems in production. Responsible for managing the overall product direction, scope, and market timing of product releases.

Project Manager: Responsible for ensuring the project plan is developed according to written procedures. Organizes, tracks, updates, and communicates the status of a project. Maintains the balance between scope, schedule, and resources. Manages issues and their timely resolution. Advises the appropriate senior management on potential deviations in scope, schedule, and resources, and elevates unresolved issues to ensure the appropriate action plans are developed to alleviate problems. Negotiates commitment changes with affected parties and reports the results to senior management. Ensures negotiated action plans are implemented and project plans are adjusted accordingly.

2. Procedure Description

2.1. Overview

When Development of the Risk Management Plan begins at requirements definition. Maintenance of the Plan ends at system retirement. The risks for each major stage in the project's software lifecycle are determined, addressed and managed.

Trigger Development of the plan is triggered when functional requirements specifications are started but can be started

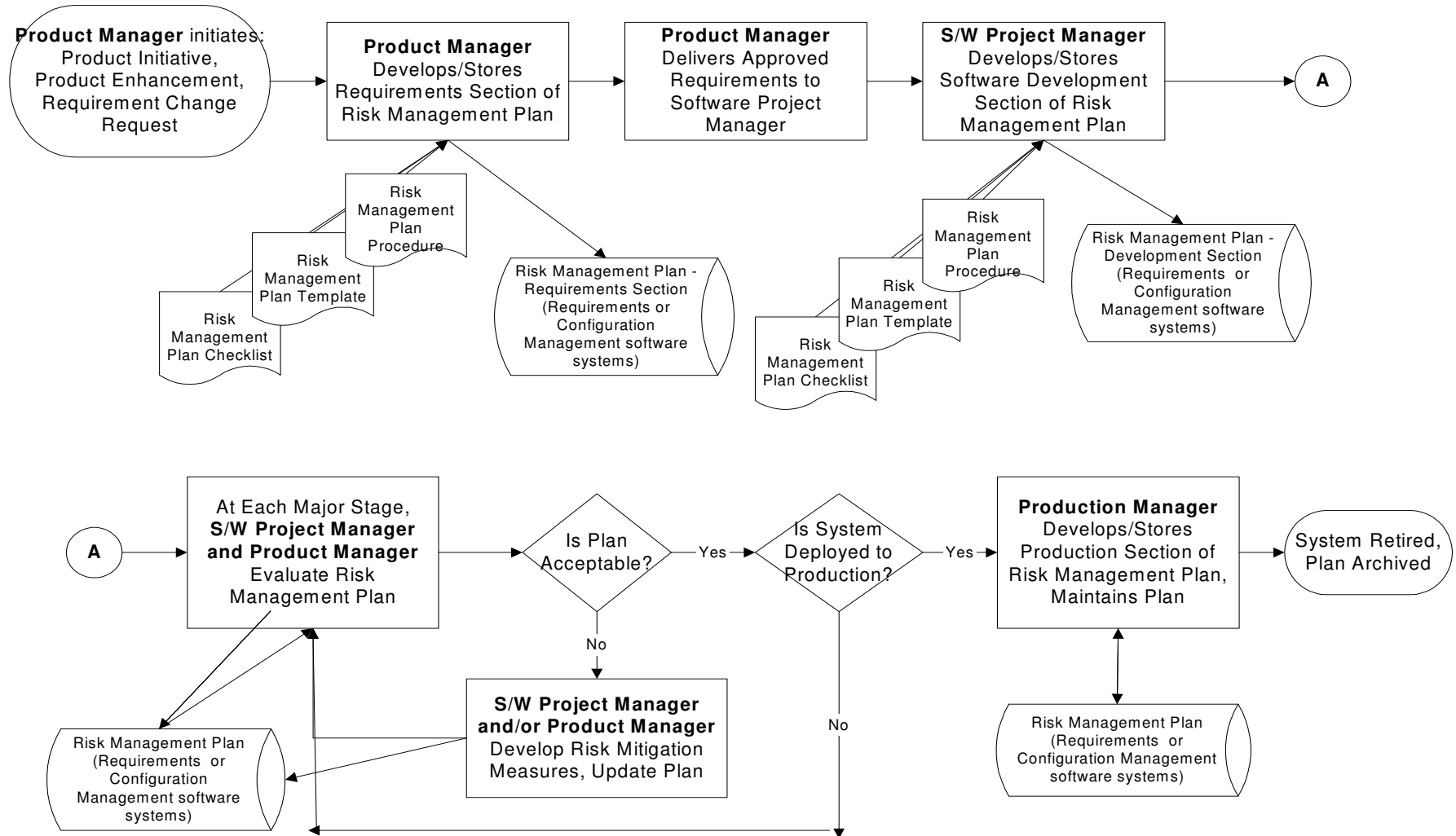
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	earlier.	
Who	<p>During the requirements stage, the Product Manager is responsible for initiating and completing the initial release of the Plan. The Product Manager should include the Development and/or Project Managers in this process.</p> <p>During development, the Product Manager continues responsibility for the requirements portion and the Development or Project Manager takes responsibility for the software development portion.</p> <p>At deployment, the Development Manager in Production takes responsibility for the plan.</p>	
Inputs	<p>Risk Management Plan Procedure</p> <p>Risk Management Plan Template (Requirements Management software system)</p> <p>Risk Management Plan Checklist</p> <p>Customer interviews</p>	<i>Doc control #</i>
Outputs	<p>Completed Risk Management Plan (Requirements Management software system)</p>	<i>Doc control #</i>

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2.2. Flow Chart

Risk Management



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3. Procedure Steps

3.1. Responsibilities

3.1.1. Product Manager

- 3.1.1.1. Related to the requirements definition and review stage, defines project scope and risks that affect fulfilling the customer's expectations as to functionality and maintainability.
- 3.1.1.2. Includes the Development or Project Manager in development of the Risk Plan.
- 3.1.1.3. Identifies stake-holders in plan and obtains sign-off via e-mail.
- 3.1.1.4. Responsible for reviewing and updating the risk management plan on a periodic basis relative to requirements-related risks.

3.1.2. Development or Project Manager

- 3.1.2.1. Related to the software design and development phase, defines project risks that affect completing the project on time, within budget, and to a quality standard.
- 3.1.2.2. Responsible for reviewing and updating the risk management plan on a periodic basis relative to design/ development/testing-related risks.

3.1.3. Development Manager in Production

- 3.1.3.1. Related to when the system is released to production, defines risks that affect maintaining and enhancing the system.
- 3.1.3.2. Responsible for reviewing and updating the risk management plan on a periodic basis relative to production-related risks.

3.1.4. Product and Development or Project Manager

- 3.1.4.1. Jointly responsible for defining project assumptions and constraints.

3.2. Risk Management Plan Template

3.2.1. Location

- 3.2.1.1. All identified risks are maintained in the Risk Management Plan in the Requirements Management software system. Risks that are determined as low priority or non-existent are closed but maintained for historical purposes.
- 3.2.1.2. The Risks Template is under SOFTWARE DEV. Copy and paste the template into the project directory. The Template name cannot be changed.

3.2.2. Template Layout

- 3.2.2.1. The template contains three sections with explanations and examples for project scope, assumptions, and constraints. The fourth section is for listing risks resulting from the risk assessment. This section has attribute columns with examples for each attribute. To see the columns, at the left top under the icon toolbar, click the down arrow at **Standard** and select **All Attributes**.

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- 3.2.2.2. The Requirements Management software system will assign a unique identifier for each risk.

3.3. Project Scope, Assumptions, and Constraints

3.3.1. Scope

- 3.3.1.1. If there is a scope document, it is referenced here. If not, define project parameters to help define potential risks. Describe what the project will encompass in the sense of functionality but do not become overly specific.
- 3.3.1.2. Exclusions should be at the same level as the inclusions and be precise. Defining project limits shapes user and stakeholder expectations so what they receive is what they expected.

3.3.2. Assumptions

- 3.3.2.1. Define what has to be in place for the project to succeed **that is in place currently**. Something that is not in place for development, or that may not be in place when the system is complete, is a risk that needs to be managed.
- 3.3.2.2. For example, if the system is dependent on another system operating correctly, and this system is now operating correctly, this is an assumption that must be stated. However, if the system is dependent on another system that is not in existence, this is a risk.
- 3.3.2.3. The manager may define assumptions that are also risks but must ensure that the stakeholder fully understands the real impact of the risk on the project.

3.3.3. Constraints and Limitations

- 3.3.3.1. Identify things that may potentially delay the project and for which there are no alternatives. Constraints are elements that cannot be mitigated as risks, i.e. they cannot be managed or eliminated.
- 3.3.3.2. For example, scarcity of a developer type will slow the amount of work that can be accomplished over a period of time. If the developer type can be quickly trained, the constraint is manageable, therefore it is a risk. If the developed type cannot be quickly trained, it is a constant and therefore a constraint.

3.4. Risk Management Overview

3.4.1. Purpose

- 3.4.1.1. **Avoid issues and change.**
Since many issues result from potentially foreseeable risks, risk management can prevent issues from materializing, thereby preventing costly changes in the project.
- 3.4.1.2. **Preparing for problems.**
If a problem may occur, such as lack of computer capacity, plans can be made to address the problem early and perhaps eliminate it.

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3.4.2. Phases of Risk Management

- 3.4.2.1. **Risk assessment:** The identification, evaluation, and initial prioritization of risks that can be attributed to any part of the project. Requirements risks may include some design and development risks. Appendix A outlines areas to consider and provides examples of identified risks.
- 3.4.2.2. **Risk analysis:** The qualitative and quantitative analysis of risks and their prioritization. Assessing the likelihood of each risk occurring and the cost to the project (in terms of lost benefits or of corrective action) should the risk occur. The Requirements Management software system Risk template provides for calculating the severity of risks so they can be ranked.
- 3.4.2.3. **Risk containment:** Agreeing to an action plan to minimize the likelihood or cost of each risk. Assigning containment actions and (where necessary) contingency plans for dealing with risks assessed. Actions include avoiding, containing, and/or monitoring the risk, as appropriate. Appendix B lists possible containment actions.
- 3.4.2.4. **Risk control:** Regularly reviewing and verifying all risks with the associated assessment and actions, and incorporating new risks. Includes maintaining risk action plans and risk resolution.

3.5. Risk Assessment

3.5.1. Focus Areas

- 3.5.1.1. Break the project into manageable chunks called **focus areas** to ensure all pieces of the software life cycle are addressed. Typical focus areas often relate to project stages or project subprojects.
 - Examples: Requirements, Design, Coding, Platform/Language, User Expertise, Implementation, Data Migration, etc. Focus Areas are listed in the template in a drop-down box.
- 3.5.1.2. Within each focus area look for drivers for potential risk.
 - Examples: User Training contains drivers such as type of audience, functional background, number of trainees, geographic location, training materials, etc.
 - Risk drivers may vary according to the scenario. For example, a diskette may not be thought of as a risk driver, but relative to Security, it may well be the driver for risks regarding confidentiality of data, the introduction of viruses, etc.

3.5.2. Risk Description

- 3.5.2.1. In a brief, complete sentence, describe the problem. Example: "System is based on Java technology and we will not have an adequate number of Java programmers when programming starts."

3.5.3. Major Cause

- 3.5.3.1. Use the list below to identify the cause for the risk:
 - Precedence (has the potential problem occurred before?)

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- Cost (is there sufficient funding to carry out the work?)
- Familiarity of operation (has this type work been done before?)
- Skills (does staff have the ability to carry out the work?)
- Resources (are there adequate materials to carry out the work?)
- Quality (has high quality work been an issue before?)
- Time (is there adequate time to complete the work?)

3.5.3.2. Indicate if the cause is internal or external. Example: “Our locale has a critical shortage of Java programmers available for hire.” Internal risks are generally more manageable than external.

3.6. Risk Analysis

3.6.1. Quantify

3.6.1.1. Each risk is quantified as to probability and impact using a five-category percentage approach (1-20%, 21-40%, 41-60%, 61-80%, 81%-100%).

3.6.2. Probability

3.6.2.1. Evaluate the **probability** or the likelihood of the risk occurring.

3.6.2.2. Probability rankings are the average of everyone’s best guesses.

3.6.3. Impact

3.6.3.1. Impact rankings are the scale of impact or consequence. Impact is best expressed in terms of the cost to the project relative to overall project cost and when compared to other impacts.

3.6.3.2. Evaluate the **impact** or the affect on the project or business in terms of delay, cost, quality, specification, performance, etc.

3.6.3.3. If more than one impact, add the impact percentages and use the “Impact Type” column to list all impacts considered and their individual percentages.

3.6.4. Severity

3.6.4.1. Add probability and severity for ranking purposes. Severity totals are calculated by the appropriate manager.

3.6.4.2. Prioritize risks to save unnecessary effort in assigning actions to non-urgent risks.

3.6.4.3. In analyzing similar rankings, impact is the most important. If a risk has a high probability of occurring but low impact, it is less important than one with a low probability but a high impact. Impact to the project or business bears the strongest weight.

3.7. Risk Containment

3.7.1. Containment Plan Elements

- The person who identified the risk (Risk Owner). You may need to obtain more information later in the project.

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- An “Estimated Cost if Risk Occurs.” This is the consequence of the impact if action is not taken. If more than one cost, list these in the “Cost Type” column. These will be high level estimates until data is established.
- An action plan.
- A person responsible for carrying out the action (Action Owner).
- An **Action Implement Date**, when the action will be started.
- An estimated cost of the action plan.
- Status (WIP – Work in Progress, Pending – enter the reason, AIR – Additional Information Required, and Closed).
- *(Note on Status: A risk remains Pending when the Action Plan for the risk is not being implemented at the time the Risk Management Plan is being updated at a Status Meeting. When the Action Plan is being implemented, the Status changes to WIP. Closed Risks include risks that were identified but considered to be of minimal impact and therefore no action plan was developed.)*

3.7.2. Contingency Plans

- 3.7.2.1. Some risks will have several associated actions, and some may need **contingency plans**. Contingency plans are required for risks of significant impact or for risks deemed to have 100% impact and 100% probability (that is, certain to take place).

3.8. Risk Control

3.8.1. Frequency

- 3.8.1.1. The Risk Management Plan should be reviewed as often as necessary, at a minimum on a monthly basis, to ensure containment actions are enacted and that no new risks have developed.
- 3.8.1.2. Reviews should occur at Status Meetings where minutes are kept of any proposed changes to the Plan. Plan changes should be made within one week of the Status Meeting. If there are no changes, the minutes must reflect that the plan was reviewed with no changes.

3.8.2. Issues

- 3.8.2.1. Issues can be turned into managed risks and should be addressed at Status Meetings as the issues occur.
- 3.8.2.2. The issue should be defined and evaluated as a risk by entering it in both the Requirements Management software system Issues Log and the Project Risk Management Plan. All columns for the issue/risk must be completed to facilitate discussion of the issue/risk at the Status Meeting.
- 3.8.2.3. Once an issue is converted to a managed risk, it can be closed on the Issues Log.

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Appendix A

RISK FOCUS AREAS

Focus areas	Subsections
Business considerations (completed during Requirements phase)	Business case Company culture Consequences of failure External dependencies Third parties Internal dependencies Project scope
User considerations (completed during Requirements phase)	User expertise User expectations User impact Requirements
Technical considerations	Development environment System definition System design Network concerns System coding System testing
Project management considerations	Project organization Project objectives Project management processes Quality Health and safety
Implementation considerations	Skills and resources Training, documentation, and support Installation Management Data Migration Implementation plan

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IDENTIFIED RISK EXAMPLES

While the list below has many items that appear to be common sense, many projects have failed because the item was not openly identified, generally for internal reasons. Ignore these items at your peril.

Business Considerations

Business Case

No recent business case.

The business case isn't endorsed at executive level, or doesn't have approval to spend all the money required.

The business case doesn't allow for maintenance and on-going costs.

Company culture

The organization's management style isn't suitable for the decision-making required for the project.

Multiple user areas and decision makers are involved which could make it difficult to obtain consensus.

Factions (such as unions, clients, user groups, partners) exist that may resist the change this project causes.

External dependencies

Aspects of this project will be a matter of public comment (for example, in the press).

Parts, or all, of this project depend on government legislation not yet in force.

Deadlines have been imposed from outside the company.

Third parties

Third parties are [*enter a percent that is makes this a risk*] involved in this project.

The third parties have not previously worked successfully with this company.

There are critical dependencies on external suppliers.

Internal dependencies

There are internally imposed end-date pressures or other critical deadlines to be met.

The success of this project is dependent on the success of some other project.

There are intra-project dependencies.

The scope overlaps scope of other projects.

There are other major changes to the company or business, which are planned or going on at the same time as this project, and which might jeopardize its success.

Project scope

This project is different in nature from other projects that we have successfully undertaken in the recent past (for example, it is larger, more complex, more critical).

There are multiple geographical locations/implementation sites involved which could require extra time to distribute deliverables and to coordinate activities.

This type of project has never been successfully undertaken in this industry.

Business requirements are unclear/evolving.

The benefits of the system are not well defined.

User Considerations

User expectations and impact

The part of the organization where the system is to be installed does not see it as useful and valuable.

System requirements are not clearly defined, well understood and/or endorsed by users and their management.

The users do not understand the real cost of the system (for example, in terms of extra work they may have to do to provide data which will benefit someone else, not them; or work involved in collecting or cleaning data).

The users are naive end-users.

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The number of users is [*enter number that makes this a risk*].

The system will result in user departments having to learn a new way of life (for example, acquire new computing skills; undertake processes differently).

The users do not understand the impact the system will have on their working environment and day-to-day activities.

The formal structure of the organization will have to change significantly to use or take advantage of the system (for example, new departments, new lines of reporting or responsibility).

The users do not understand the extent of the end-user training needed for this type of system.

The new system will change [*enter number that makes this a risk*] people's job functions.

User procedures will be changed by [*enter percent that makes this a risk*].

Technical Considerations

IT and development environment

The project is using something considered as leading edge technology in our part of the industry.

The hardware exists on the market but is new to the team or the hardware is brand new on the market.

The software exists on the market but is new to the team or the software is brand new on the market.

The network exists on the market but is new to the team or the network is brand new on the market.

The software to be developed is of a size or complexity that is greater than the organization has tackled before.

The system will result in the IT department having to learn a new way of working (for example, 24/7 schedules, reorganized activities).

Development methods/standards are not being used such as processes, procedures and in-house standards for development tasks such as structured analysis and Structured Programming Standards.

Adequate machine facilities have not been planned for development and testing.

System definition

The system solution comprises unannounced products.

The system solution is not documented nor well understood by the team or our users.

System design

Of the critical components in the system, [*enter percent that makes this a risk*] will be used for the first time in the organization.

The system design will involve combining components in a way that is non-standard or not sufficiently well proven.

Of the requirements for the performance, capacity, reliability or availability of the system, [*enter percent that makes this a risk*] are significantly more severe than we are used to achieving.

There is no source of expertise available in the area on the new [*enter name of component*] component.

The functionality is more complex than what the project team is accustomed to.

The database is complex (in terms of large numbers of entities / relationships).

The database development is to be shared concurrently with other applications (or with other undefined applications).

There are [*enter number that makes this a risk*] physical system interfaces.

The database is only [*enter percent that makes this a risk*] complete.

The requirements/designs (whichever is relevant for the current project stage) are not clearly specified.

The systems architect will make [*enter percent that makes this a risk*] percentage of design decisions without any user involvement.

The on-line networks that are involved are more complex than other systems.

This is a multi-level hardware implementation. (Functionality will reside on multiple platforms.)

System operations

Upwardly compatible hardware is not available.

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The daily system availability requirement is [enter number that makes this a risk]

The response time requirements are [enter number that makes this a risk].

The high-volume throughput is greater than what the project team is accustomed to.

The expected size of the database is [enter number that makes this a risk].

Modifications to an existing database structure are more significant than what the project team is accustomed to.

The required recovery cycle is shorter than systems now in place.

Project Management Considerations

Project organization

There is no product/project/development manager nominated for the project.

The product/project/development manager has not handled a project of this size or complexity before.

A director or executive level manager is not clearly identified as "project sponsor."

The project sponsor is not the person who has the most to gain in business terms when the project succeeds.

A project review board will not be set up.

Project objectives

Clear project goals and objectives have not been established.

Project management processes

There is no formal project management system for this project.

There is no process in place for the management of changes and issues.

The change and issue management process is not working.

There is no detailed project plan, showing activities and resources over time.

The confidence level of the team, the users, and management in the schedule is low.

The project team has not agreed to key milestone dates in the plan.

The third parties involved are not subscribing to the project management processes for the project.

There are complex task dependencies.

We are trying to implement the system in a shorter time than would be normally allowed for this sort of project.

There is no Implementation Plan.

Quality

There is no quality plan for key deliverables.

Quality reviews are not planned.

Skills and resources

The project involves people in different locations working together as a team.

Part of the project is heavily dependent on the drive, energy and skills of one individual.

Some of the team members are being spread too thinly.

Not enough people with the necessary skills and experience are committed to this project for the time required.

Training, documentation, and support

There is no viable documentation plan for end-users, service providers and support staff.

There is no one ***in the project team*** responsible for ensuring that documentation happens.

There is not a viable training plan for end-users, service providers and support staff.

There is no viable support plan for end-users, service providers.

There is no one ***in the project team*** responsible for ensuring that support happens.

Implementation is the total responsibility of a third party (for example, delivery, installation, commissioning).

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Appendix B

CONTAINMENT ACTIONS

Following are example risks and suggested actions to minimize or manage those risks.

External Dependencies (external to the project not necessarily the company)

Multiple Vendor/Major Contractors

- Problem* - Coordination between vendors/contractors and between vendors/contractors and internal staff.
- Minimize* - Require and ensure adherence to standards, both technical and managerial for payment.
- Require regular status reporting and coordination meetings.

Poor Vendor Support

- Problem* - Time wasted waiting for response to queries or waiting for rework.
- Minimize* - Institute long lead times for documentation.
- Ensure effective account manager assigned or appoint an internal manager to liaise with vendor.
- Impose contractual constraints/safeguards with monetary penalties.

Critical Dependence on External Suppliers

- Problem* - May miss milestones waiting for deliverables.
- Minimize* - Ensure suppliers are aware of schedule and obtain time commitment.
- Request interim status reports and review of partially complete deliverables so that the project team can verify the supplier's estimates of the remaining effort.
- Impose contractual obligations (fixed price, penalties).

Number of Inter-Project Dependencies

- Problem* - Time wasted awaiting completion of other projects not within stage manager's control.
- Minimize* - Have a co-ordination project with the critical path specified in terms of projects.
- Require production of a strategic/architectural plan.

Overlapping Scope with Other Developments

- Problem* - Parallel, or duplicate, development of similar areas with different approaches causing user confusion and irritation.
- Minimize* - Establish cross-project standards to ensure consistency.
- Establish change control procedures to manage the different changes proposed by different systems.

Contradicts Company Direction

- Problem* - Project initiated for no justifiable reason, e.g., political.
- Minimize* - Obtain sign-off from Strategic and Executive Committees supporting project completion.

Plan Requires Extensive Recruitment of Resources

- Problem* - Time and expense.
- Minimize* - Investigate training of current resources.
- Plan gradual startup to allow for familiarization and training.
- Investigate using short term experienced contractors.

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Organizational

Lack of Organizational Support

- Problem*
- Project direction vague, justification difficult, significant rework likely.
 - Cannot estimate effort due to likely rework.
 - Users do not contribute to production of deliverables or understand requirements.
 - Lack of user commitment to assuring quality of technical deliverables and to plan.
 - No commitment to plan by Project Team.
- Completion date is unachievable in general or externally imposed factors lead to low confidence that schedule can be met.
- Minimize*
- Inform Executive Committee of potential increase in project costs due to lack of commitment and sustainable delivery date.
- Ensure Executive Committee underwrites support of all stakeholders.
- Extend review activities.
 - Increase user participation in the technical activities by use of JAD and the interactive sessions to gather information and create models.
 - Determine and emphasize user roles as stakeholders in the project organization.
 - Urge user representatives to "encourage" user participation.

Number of User Areas/Decision Makers

- Problem*
- Not obtaining consensus.
- Minimize*
- Identify key representatives.
 - Establish decision making process/responsibilities.

Multiple Geographical Locations

- Problem*
- Time needed to distribute deliverables and co-ordinate activities.
- Minimize*
- Select a pilot implementation site, then a phased implementation.
 - Establish focal point for development activities.

Previous User Software Project Experience

- Problem*
- Unrealistic expectations.
 - Lack of communication.
- Lack of knowledge of roles and commitment.
- Minimize*
- Schedule briefing and training sessions early in project.
 - Increase user involvement/participation.

Size of Departments/Company Impacted (Number of people whose function will be changed as a consequence of the new system)

- Problem*
- Complexity of requirements and possibility of conflicts.
 - Training requirements and implementation logistics.
- Minimize*
- Consider phased implementation if self-contained increments can be identified.
 - Plan implementation methodologies as early in project life-cycle as possible.

Inappropriate Level of Sponsorship

- Problem*
- When a problem arises, the sponsor may not have the authority, or perspective, to support the project adequately.
- Minimize*
- Contact Executive Committee for a more appropriate sponsor.

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Organizational Changes Required

- Problem* - Resistance to system by organization.
- Minimize* - Increase user involvement.
- Hold briefings throughout project on possible repercussions.

Level of Changes Required

- Problem* - Users may be inadequately prepared for a successful implementation and handover due to inadequate budget and/or time frame for training.
- Minimize* - Include prior walkthrough of the training sessions and materials to gain monetary commitment from Executive Committee.
- Increase level of user training.
- Use of prototypes and presentations of the new procedures, both system and manual.

Planning and Scheduling

Dependent on Scarce Resources/Skills

- Problem* - Time lost because correct resources/skills not available when required.
- Minimize* - Investigate training current resources.
- Investigate viability of hiring/contracting resources required.

Complex Task Dependencies

- Problem* - Critical dependencies unknown, increased chance of slippage.
- Minimize* - Increase level of planning until critical dependencies are known.

Critical Implementation Date

- Problem* - May have to cut back on quality and/or functionality, or project discarded if date missed.
- Minimize* - Verify significance of date.
- Ascertain which portions of system are required for that date.
- Consider incremental development.
- Plan and control at detailed level.

Informal Control Procedures

- Problem* - Inaccurate Project Status information.
- Minimize* - Encourage assumption of formal controls by training and provision of project management software.
Ensure key stakeholders are held accountable by Executive Committee for project management and status reporting.

Number of Major Subsystems

- Problem* - Managing interfaces.
- Minimize* - Develop a co-ordination project to track coordination.
Establish overall architectural plan.
Minimize project interdependencies.

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Project Size in Terms of Effort

Project Size in Terms of Elapsed Time

Problem - Changes to business areas and project organization over larger time scales.
Project management complications.

Minimize - Control scope changes.
Increase the number of control points.

Effort versus Elapsed Development Time

Problem - The greater this ratio, the greater the number of simultaneous tasks.
- Increased staff associated with development and associated overheads.

Minimize - Increase control procedures and introduce additional level of management.
Divide into achievable sub-systems.

Experience of Product/Project Manager

Problem - Plans may not exist.
- Control procedures may not be adequate.

Minimize - Provide training and support from another, experienced, project manager.
- Increase involvement by customers.

Planned Resources Available

Problem - Resource constraint could cause project to be cancelled/postponed.

Minimize - Develop new plan to fit with maximum resource constraint.

Business Case

Major Increase in Costs Possible

Problem - If greater than +/- 5%, then likely to miss stage end targets.

Minimize - Set appropriate tolerance levels.
- Investigate mechanisms for further controlling costs.

Changeable Definition of Scope/Requirements

Problem Changes to legal or economic conditions may change scope and/or requirements but project must be able to adapt while being completed.

Minimize - Use iterative development approach.
- Establish detailed scoping study identifying alternatives.
Review scope/requirements with users and obtain signoff.
- Involve more senior user representatives.
- Increase time spent in analysis.

Ill-defined Benefits

Problem - Difficult to select optimum solution, potential for project being canceled.

Minimize - User CRA to help define tangible benefits.
- Establish focused sessions with user to evaluate benefits.

Lead Time for Return on Investment

Problem - May never achieve pay-back.

Minimize - Reduce scope of system to include most profitable segments.

RISK MANAGEMENT PLAN PROCEDURE

Mission Critical System

- Problem*
- Business may fail if project fails.
 - Foundation system impacting other developments.
- Minimize*
- Increase planning and level of control.

Business Commitment to Development

- Problem*
- System perceived as belonging to R&D department.
- Minimize*
- Hold assessments requiring user sign-off.
 - Increase user involvement.
 - Produce detailed business case.

Technical

Environmental

Inappropriate Development Tools

- Problem*
- Required tools unavailable.
- Minimize*
- Review required tools and associated justification to ensure tools are obtained.
 - Evaluate other development areas to find productivity offsets for lack of tools.

New/Unfamiliar Technology

- Problem*
- Project team inexperienced with technology.
- Minimize*
- Conduct training.
 - Recruit experienced staff.
 - Obtain vendor support.
 - Allow for training/learning curve time in the schedule.

Ensure Stable Development Team

- Problem*
- Lost information.
 - Time required for handover.
- Minimize*
- Document (in standard format) as project progresses.
 - Increase attendance at reviews to spread knowledge.

Low I.S. Project Team Knowledge of Business Area

- Problem*
- System may not meet user's needs.
- Minimize*
- Increase user participation.
 - Increase frequency and formality of reviews.

R&D Skills (Project Team)

- Problem*
- If the balance of expertise is low, then there is an increased risk of defects.
- Minimize*
- Increase the frequency of Quality Assurance Reviews and Project Checkpoints.
 - Include experienced staff as specialized technical support.
 - Account for experience levels when planning.

Use of Development Method/Standards

- Problem*
- Project team does not know what to do. Tasks may be duplicated or omitted.
- Minimize*
- Implement a standard approach to development using WBS as needed.
 - Ensure staff familiarity with internal and external standards and WBS methodology.

RISK MANAGEMENT PLAN PROCEDURE

Multilevel Hardware Requirement

- Problem* - Interfaces, data distribution, complex design.
- Minimize* - Separate technical feasibility project started early to ensure correct hardware support will be available.
- Ensure availability of required skills.

Project

Complexity of Functions

- Problem* - Increased risk of defects.
- Minimize* - Increase effort in Logical Design to validate.
- Increase level of reviews.
 - Use formal techniques.

Complexity of Database

- Problem* - Performance problems.
- Minimize* - Increase data validation steps throughout.
- Ensure thorough Physical Design Tuning.
 - Increase DBA involvement.

Shared Development of Database

- Problem* - Difficult to tune successfully in Physical Design.
- Minimize* - Attempt to establish overall volumes and requirements.
- Keep design flexible.

Number of Physical Systems Interfaces

- Problem* - Increased risk of systems failure.
- Minimize* - Increase time in defining interfaces in detail.
- Involve experts from associated system.

Constraints

- Problem* - Tighter constraints will increase problems in physical design and construction.
- Minimize* - Increase time scheduled for these stages.
- Involve technical experts in project.

Package Solutions

- Problem* - Effort required in design, construction and testing.
- Mismatch potential.
- Minimize* - Ensure buy/build option is appropriately conducted.
- Carry out evaluation if cost justified.
 - Minimize changes to front/back ends.