

Impact Analysis Checklist for Requirements Changes

Implications of the Proposed Change

- Identify any existing requirements in the baseline that conflict with the proposed change.
- Identify any other pending requirement changes that conflict with the proposed change.
- What are the consequences of not making the change?
- What are possible adverse side effects or other risks of making the proposed change?
- Will the proposed change adversely affect performance requirements or other quality attributes?
- Will the change affect any system component that affects critical properties such as safety and security, or involve a product change that triggers recertification of any kind?
- Is the proposed change feasible within known technical constraints and current staff skills?
- Will the proposed change place unacceptable demands on any computer resources required for the development, test, or operating environments?
- Must any tools be acquired to implement and test the change?
- How will the proposed change affect the sequence, dependencies, effort, or duration of any tasks currently in the project plan?
- Will prototyping or other user input be required to verify the proposed change?
- How much effort that has already been invested in the project will be lost if this change is accepted?
- Will the proposed change cause an increase in product unit cost, such as by increasing third-party product licensing fees?
- Will the change affect any marketing, manufacturing, training, or customer support plans?

System Elements Affected by the Proposed Change

- Identify any user interface changes, additions, or deletions required.
- Identify any changes, additions, or deletions required in reports, databases, or data files.
- Identify the design components that must be created, modified, or deleted.
- Identify hardware components that must be added, altered, or deleted.
- Identify the source code files that must be created, modified, or deleted.
- Identify any changes required in build files.
- Identify existing unit, integration, system, and acceptance test cases that must be modified or deleted.
- Estimate the number of new unit, integration, system, and acceptance test cases that will be required.
- Identify any help screens, user manuals, training materials, or other documentation that must be created or modified.
- Identify any other systems, applications, libraries, or hardware components affected by the change.
- Identify any third party software that must be purchased.
- Identify any impact the proposed change will have on the project's software project management plan, software quality assurance plan, software configuration management plan, or other plans.
- Quantify any effects the proposed change will have on budgets of scarce resources, such as memory, processing power, network bandwidth, real-time schedule.
- Identify any impact the proposed change will have on fielded systems if the affected component is not perfectly backward compatible.

Effort Estimation for a Requirements Change

<u>Effort (Labor Hours)</u>	<u>Task</u>
_____	Update the SRS or requirements database with the new requirement
_____	Develop and evaluate prototype
_____	Create new design components
_____	Modify existing design components
_____	Develop new user interface components
_____	Modify existing user interface components
_____	Develop new user publications and help screens
_____	Modify existing user publications and help screens
_____	Develop new source code
_____	Modify existing source code
_____	Purchase and integrate third party software
_____	Identify, purchase, and integrate hardware components; qualify vendor
_____	Modify build files
_____	Develop new unit and integration tests
_____	Modify existing unit and integration tests
_____	Perform unit and integration testing after implementation
_____	Write new system and acceptance test cases
_____	Modify existing system and acceptance test cases
_____	Modify automated test drivers
_____	Perform regression testing at unit, integration, and system levels
_____	Develop new reports
_____	Modify existing reports
_____	Develop new database elements
_____	Modify existing database elements
_____	Develop new data files
_____	Modify existing data files
_____	Modify various project plans
_____	Update other documentation
_____	Update requirements traceability matrix
_____	Review modified work products
_____	Perform rework following reviews and testing
_____	Recertify product as being safe, secure, and compliant with standards.
_____	Other additional tasks
_____	TOTAL ESTIMATED EFFORT

Procedure:

1. Identify the subset of the above tasks that will have to be done.
2. Allocate resources to tasks.
3. Estimate effort required for pertinent tasks listed above, based on assigned resources.
4. Total the effort estimates.
5. Sequence tasks and identify predecessors.
6. Determine whether change is on the project's critical path.
7. Estimate schedule and cost impact.

Impact Analysis Report Template

Change Request ID: _____

Title: _____

Description: _____

Analyst: _____

Date Prepared: _____

Prioritization Estimates:

Relative Benefit: _____ (1-9)

Relative Penalty: _____ (1-9)

Relative Cost: _____ (1-9)

Relative Risk: _____ (1-9)

Calculated Priority: _____ (relative to other pending requirements)

Estimated total effort: _____ labor hours

Estimated lost effort: _____ labor hours (from discarded work)

Estimated schedule impact: _____ days

Additional cost impact: _____ dollars

Quality impact: _____

Other requirements affected: _____

Other tasks affected: _____

Integration issues: _____

Life cycle cost issues: _____

Other components to examine _____

for possible changes: _____