The Requirements Traceability Matrix

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Introduction

As the Project Manager, you are responsible to deliver the project and assure that (among other things) ….

- **You have sufficient understanding of what needs to be done and it will be done as planned.**

- **Tasks, deliverables, and changes are adequately tracked**

- **You have a means of tracking the work**

Introduction

In the real world, once you start working, things can get chaotic and lost in the shuffle.

- **There are changes or someone makes a request.**

- **You lose site of knowing when a requirement is "done."**

- **You forget about testing and verification.**

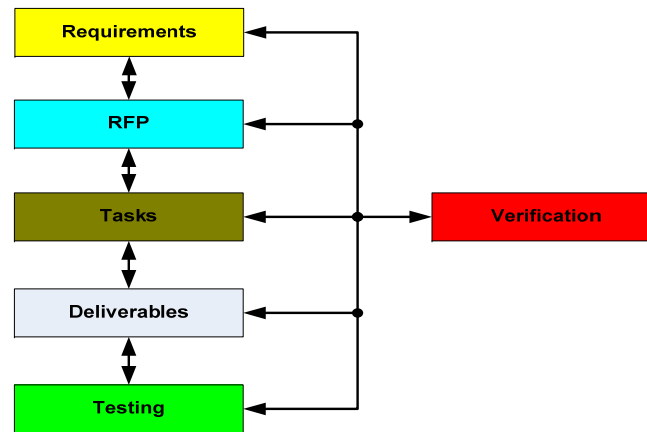- **You have no clue if or how a requirement has been signed off.**

Introduction

As the Project Manager, you need a tool to help assure that ….

- **The project requirements are documented and itemized.**

- **Other project activities and tasks support the creation and completion of the requirements.**

- **The testing, verification, and sign-off are documented.**
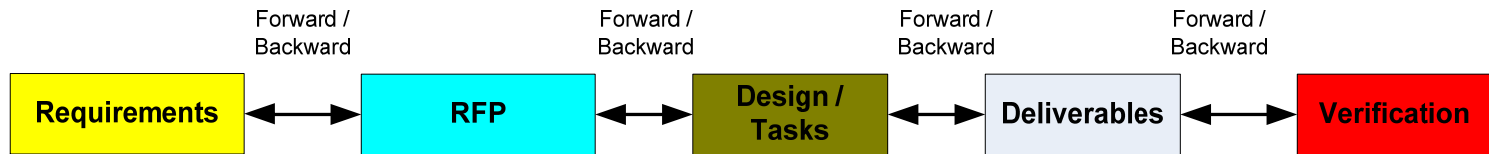
Requirements Traceability Matrix

Defining the RTM

- The *Requirements Traceability Matrix (RTM)* is a tool to help ensure that the project's scope, requirements, and deliverables remain "as is" when compared to the baseline.

- Thus, it "traces" (or links) the deliverables, both forwards and backwards, by establishing a thread for each requirement- from the project's initiation to the final implementation.
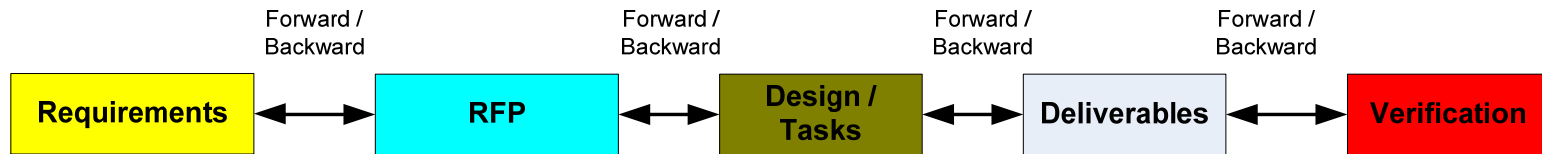
The RTM can be used during all phases of a project to:

- **Track all requirements and whether or not they are being met by the current process and design.**

- **Assist in the creation of the RFP, Project Plan Tasks, Deliverable Documents, and Test Scripts.**

- **Help ensure that all system requirements have been met during the Verification process.**

Requirements	←→	RFP	←→	Design / Tasks	←→	Deliverables	←→	Verification
	Forward / Backward		Forward / Backward		Forward / Backward		Forward / Backward	

- **The Matrix should be created at the very beginning of a project because it forms the basis of the project's scope and incorporates the specific requirements.**

- **The Matrix is considered to be bi-directional. It tracks the requirement "forward" by examining the output of the deliverables and "backward."**

Requirements		RFP		Design / Tasks		Deliverables		Verification
	Forward / Backward		Forward / Backward		Forward / Backward		Forward / Backward	

- **The RTM is also used to verify that all requirements are met and to identify changes to the scope when they occur.**

- **The use of the RTM enhances the scope management process and quality management.**

- **RTM can also be thought of as a process of documenting the connection and relationships (cross referencing) between the initial requirements of the project and the final product or service produced.**

Creating the RTM

How do you create an RTM?

- **In each of the steps shown previously, each requirement must be unique and clearly defined. The requirement is then part of each critical component of the project.**

- **The references throughout the entire process must be consistent and unique. In order to insure that this occurs, the Matrix traces each requirement and creates a relationship between each of the processes.**

Requirements Traceability Matrix						
Req #	Name	RFP #	DDD#	PPT #	TS #	Verification
1	Calculate Interest	CGA 001	DDD 001	5.1.1 6.2.1	TS 001 TS 025	Yes / No
2						
3						

Req #:	Requirement Number; for each project requirement, begin to list them on the RTM in a numerical order and group them by function.
Name:	Enter the name and brief description of the requirement
RFP #:	Request For Proposal (RFP); specify the identification number of the requirement as listed in the RFP.
DDD #:	Deliverable Definition Document (Also referred to as the Deliverable Expectation Document- DED); use the RFP requirement number as a reference for the DDD that is created for the requirement.

Requirements Traceability Matrix						
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PPT #:	List the MS Project Subtask and Task numbers that are associated with the requirement.
TS #:	Test scripts should be prepared for the actual testing process.
Verification:	Use this field to record completion of the signoff process.

Creating the RTM

What tool do you use for creating an RTM?

- MS Excel

- MS Access

- SharePoint

- RTM Specialty Tool

Take advantage of sorting, filtering, functionality.

Creating the RTM

Do you need an RTM for every project?

- **Traceability is an essential element of every project, regardless of size.**

- **Utilize the features of forward and backward traceability to help manage work.**

- **Use the RTM to help prevent "scope creep"**

- **Traceability helps ensure requirements completion.**

- **Adds to project documentation**

Need the RTM?

What happens if you do not use and RTM?

- Scope Creep and disagreement in requirements

- Lost or forgotten requirements

- Breakdown in project integration

- No means of tracking approved changes/mods

- No mapping to Testing phase and Sign-off

Case for the RTM

- **Identify, understand, and trace current requirements**

- **Track and understand changes to requirements**

- **Establish a basis for testing and sign-off**

- **Create baseline for Configuration Management**

- **Required for ongoing system documentation**

- **Strengthened Project Management Practice**

Traceability is important for many reasons. And there is definitely a cost when failing to use one- in both time and budget.

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About the Author

Tom Carlos has over 25 years of cumulative experience in business, technical, and training environments. He is a Certified Project Management Professional (PMP) and member of the Sacramento Valley PMI Chapter. Tom is the author and instructor of the Project Management 1A and Risk Management 1A Training Classes.

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