



Chapter Eight-Quality management

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Chapter Eight-Quality management

- **It's not enough to make sure you get it done on time and under budget.** You need to be sure you make **the right product to suit your stakeholders' needs**. Quality means **making sure that you build what you said you would, and that you do it as efficiently as you can**. That means trying not to make too many mistakes and always keeping your project working toward the goal of creating the right product!

What is quality?

- Everybody “knows” what **quality is. But the way the word is used in everyday** life is a little different than how it is used in project management. You manage quality on your project by setting goals and taking measurements. That’s why you need to understand the quality levels your stakeholders believe are acceptable, and that your project meets those targets just like it needs to meet their budget and schedule goals



How do you know if this is a high-quality product?

Quality is the measurement of how closely your product meets its requirements.

Quality up close

- **Customer satisfaction** is about making sure that the people who are paying for the end product are happy with what they get. When the team gathers requirements for the specification, they try to write down all of the things that the customers want in the product so that you know how to make them happy.
- **Fitness for use** is about making sure that the product you build has the best design possible to fit the customer's needs. Which would you choose: a product that's beautifully designed, well constructed, solidly built, and all-around pleasant to look at but does not do what you need, or a product that does what you want despite being really ugly to look at and a pain in the butt to work with?
- **Conformance to requirements** is the core of both customer satisfaction and fitness for use. Above all, your product needs to do what you wrote down in your requirements specification. Your requirements should take into account both what will satisfy your customer and the best design possible for the job.

Quality vs. grade



The lobster is a high-grade meal; the hot dog is a low-grade one. But they're both low quality if you actually wanted a salad.

— Quality means that something does what you needed it to do. Grade describes how much people value it.

← Higher-grade stuff typically costs more, but just because you pay more for something doesn't mean it does what you need it to do.

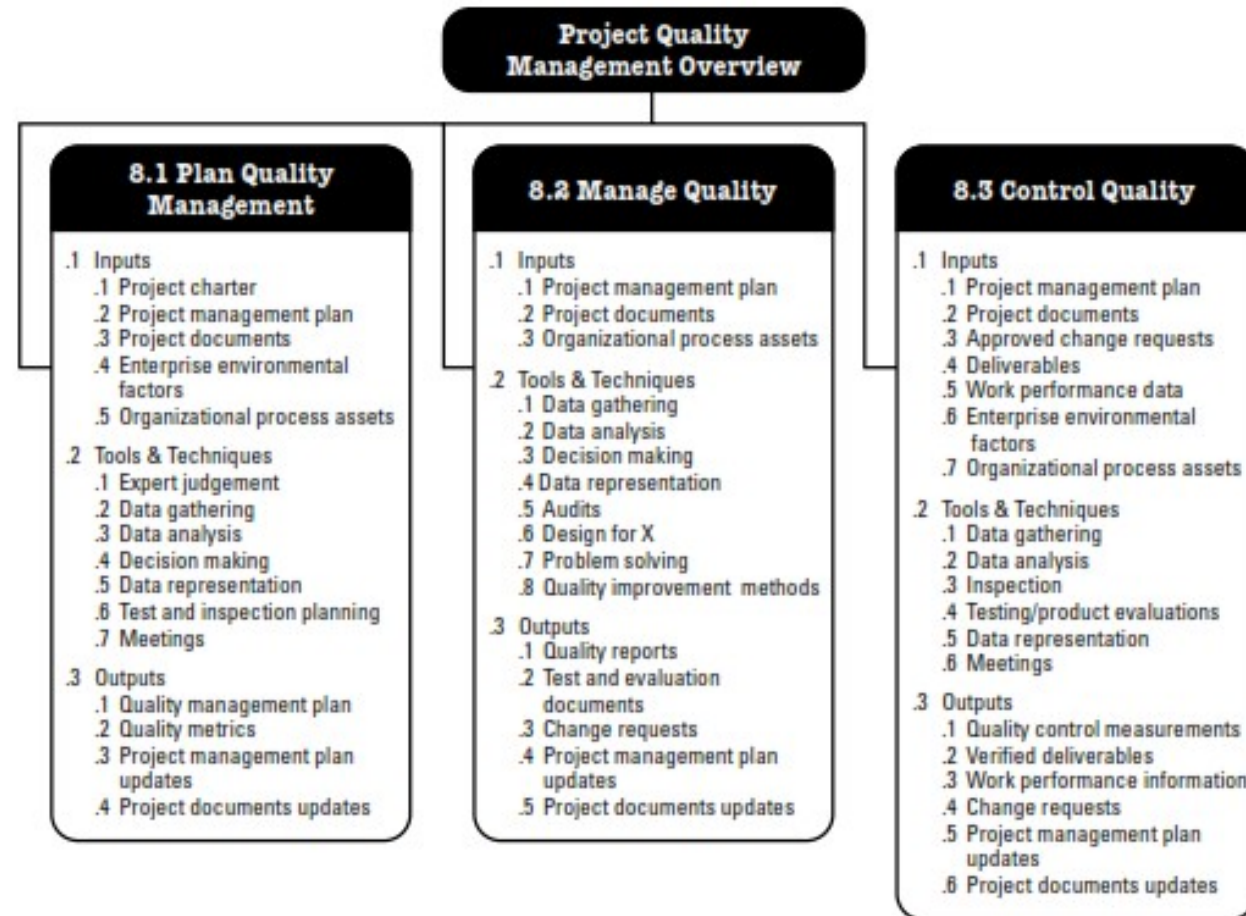
Quality Management processes

- **Plan Quality Management** *is like the other planning processes you've learned about— you create a Quality Management plan to help guide you and your team through quality activities.*
- **Perform Quality Assurance(Manage Quality)** *is where you take a step back and look at how well your project fits in with your company's overall quality standards and guidelines.*
- **Control Quality** *is the Monitoring and Controlling process where you*
 - ◁ at each deliverable and inspect it for defects.

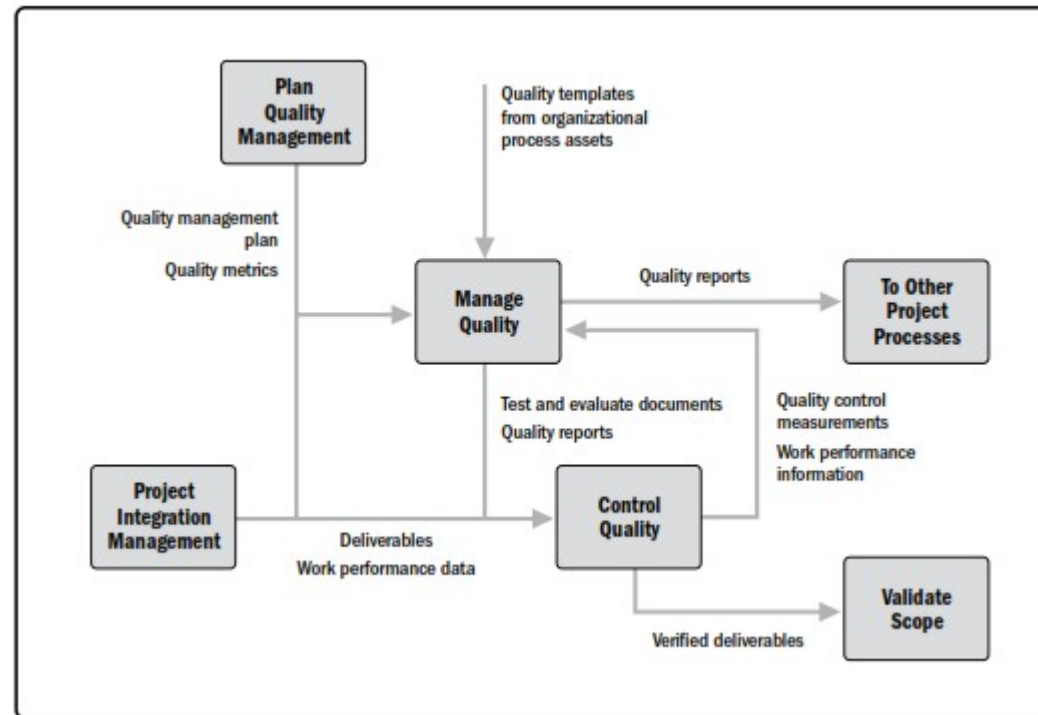


When it comes to
defects, prevention
is always better
than inspection!

Overview

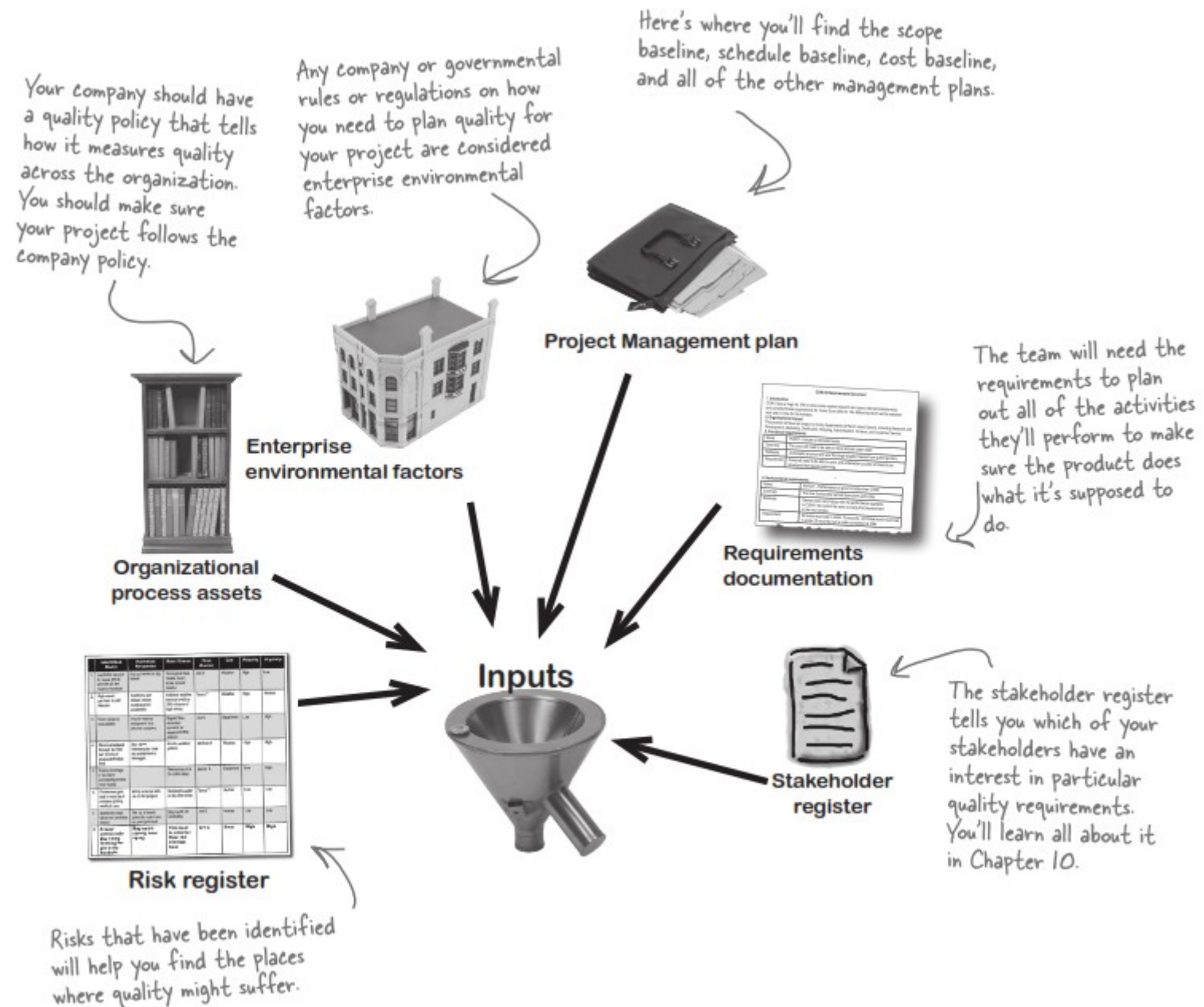


Quality Management Interrelations



Plan Quality is how you prevent defects

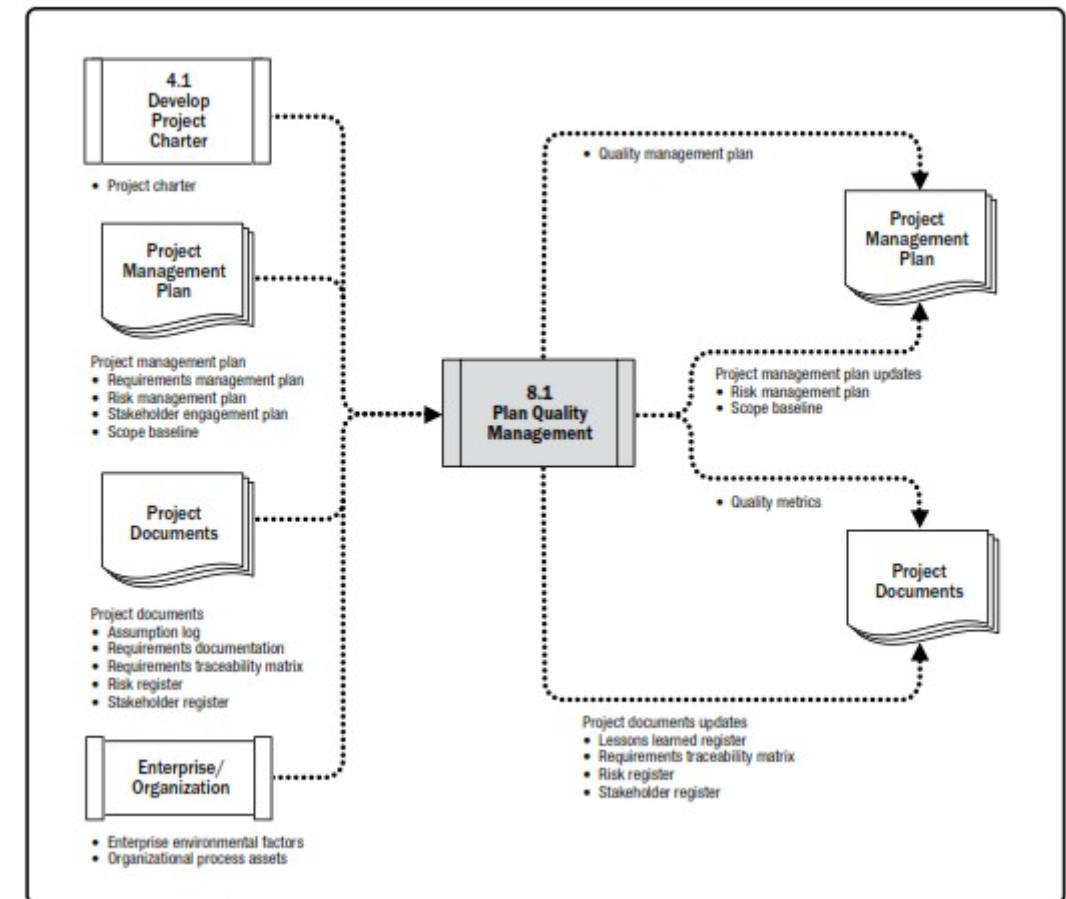
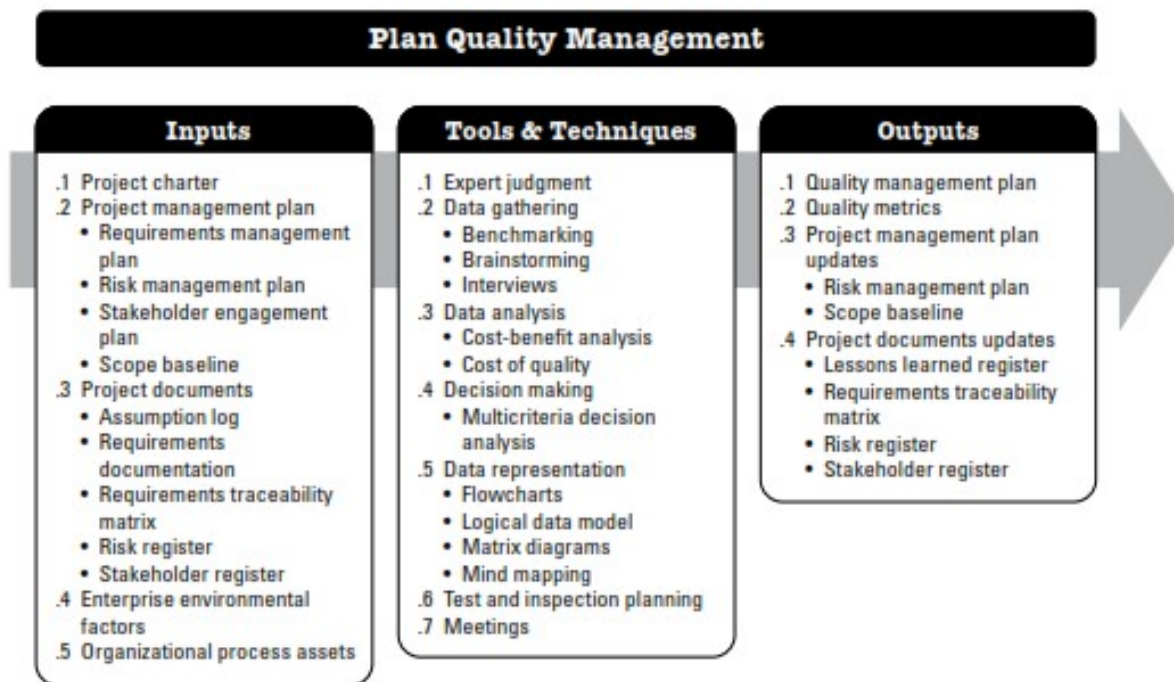
- Since prevention is the best way to deal with defects, you need to do a lot of planning to make sure that your product is made with as few defects as possible. The **Plan Quality Management process focuses on taking all of the** information available to you at the beginning of your project and figuring out how you will measure your quality and prevent defects.



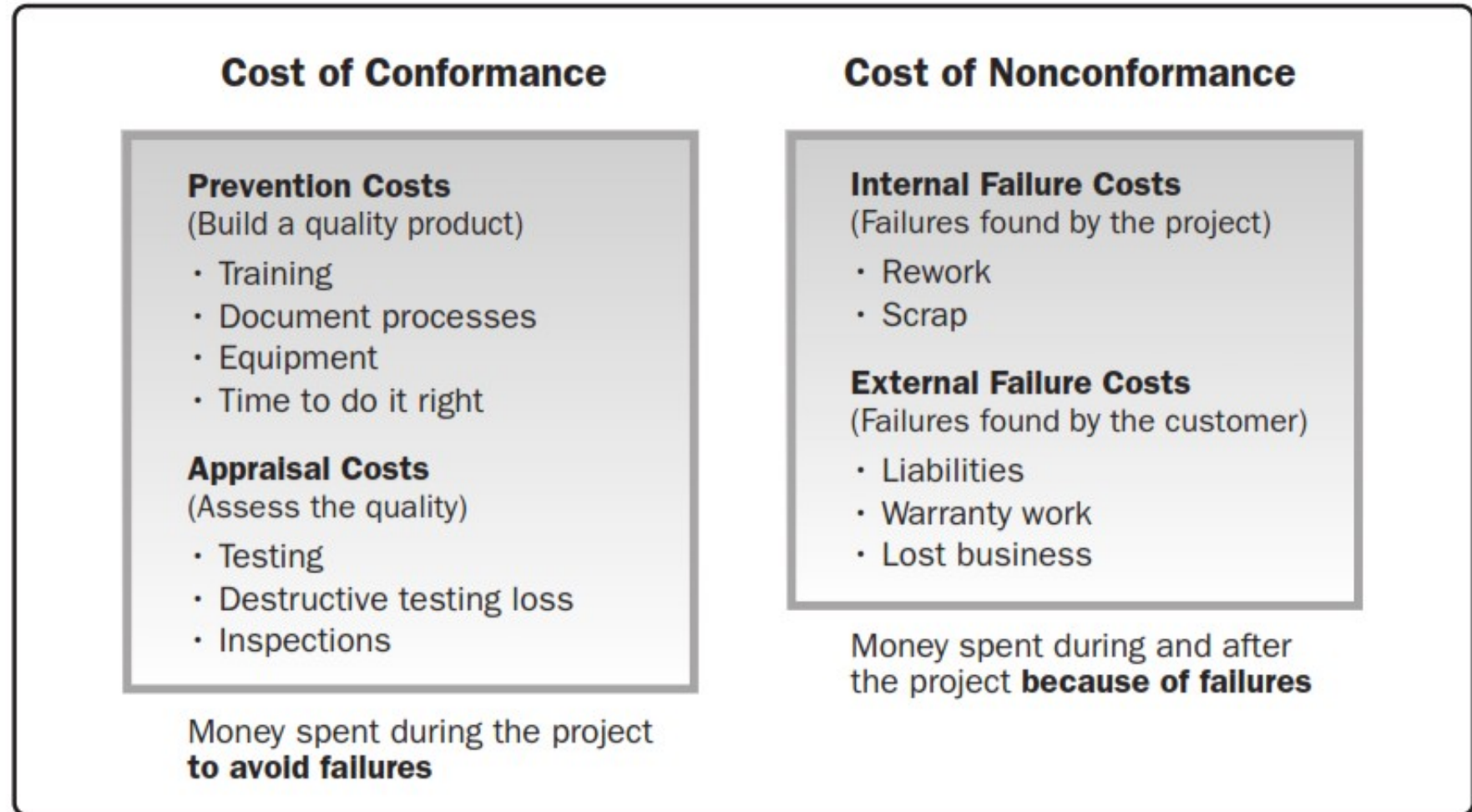
How to plan for quality

- You need to plan out which activities you're going to use to measure the quality of the product of your project. And you need to be sure that the activities you plan are going to pay off in the end.
- So you'll need to think about the cost of all of the quality-related activities you want to do. Then you'll need to set some guidelines for what you're going to measure against.
- Finally, you'll need to design the tests you're going to run when the product is ready to be tested.

Plan Quality Management



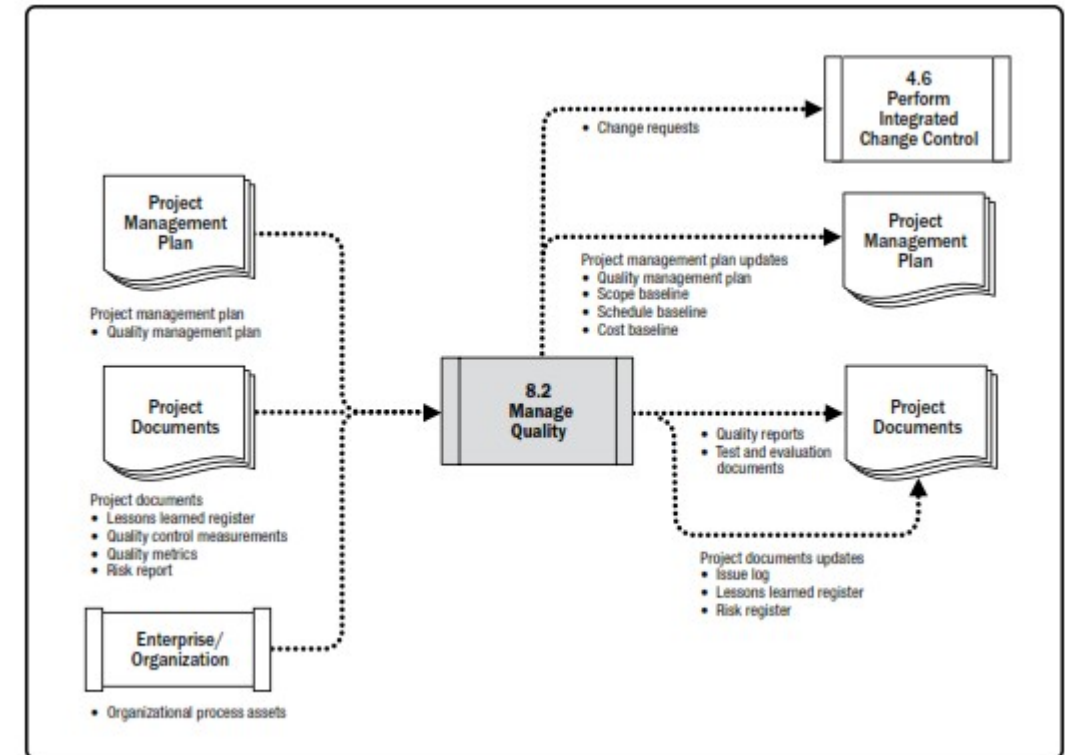
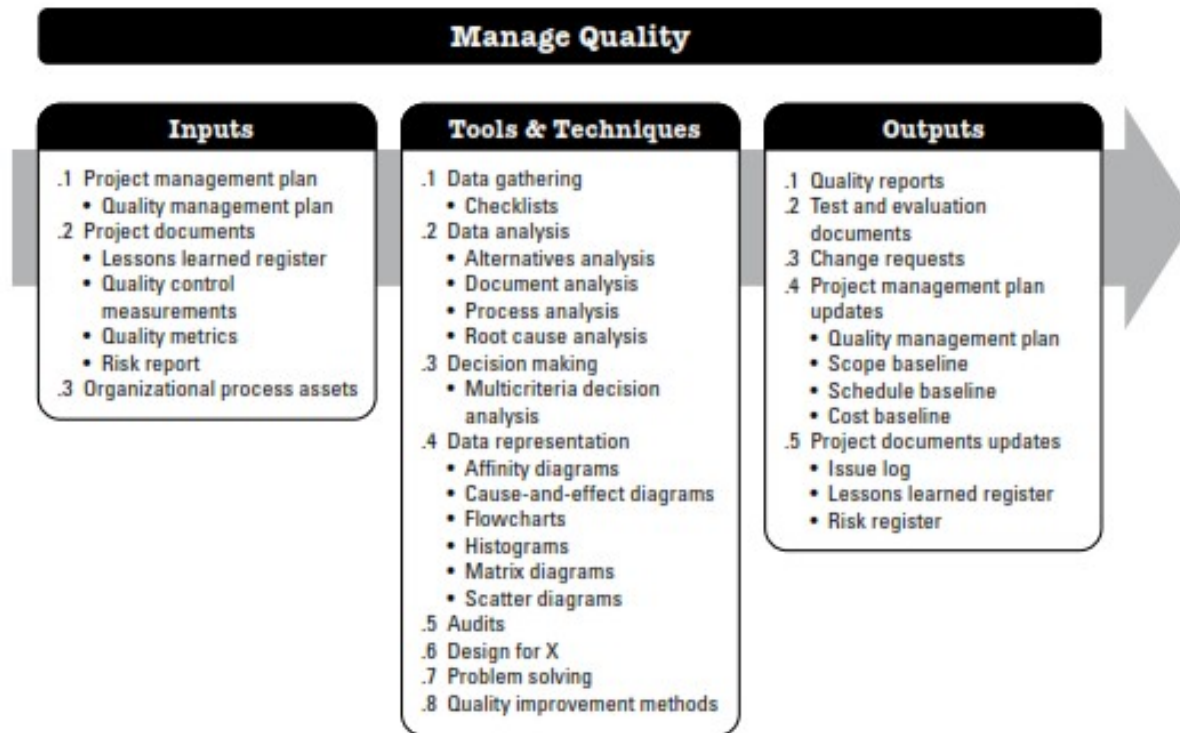
Cost of a Quality



Manage Quality

- Manage Quality is the process of translating the quality management plan into executable quality activities that incorporate the organization's quality policies into the project. The key benefits of this process are that it increases the probability of meeting the quality objectives as well as identifying ineffective processes and causes of poor quality.
- Manage Quality uses the data and results from the control quality process to reflect the overall quality status of the project to the stakeholders. This process is performed throughout the project.

Manage Quality

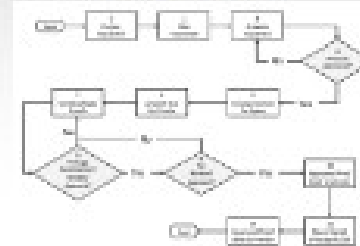


The seven basic tools of quality Management

Cause & Effect Diagram



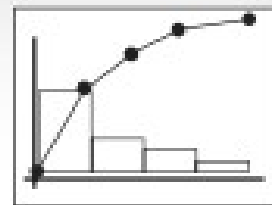
Flowcharts



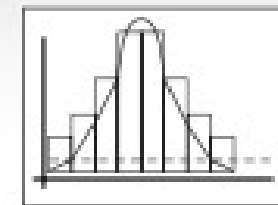
Checksheets

Category	Strokes	Frequency
Attribute 1		
Attribute 2		
Attribute ...		
Attribute n		

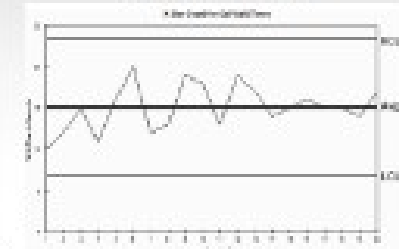
Pareto Diagrams



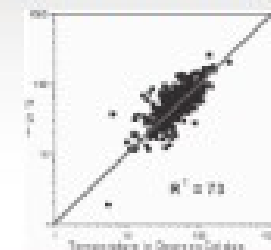
Histograms



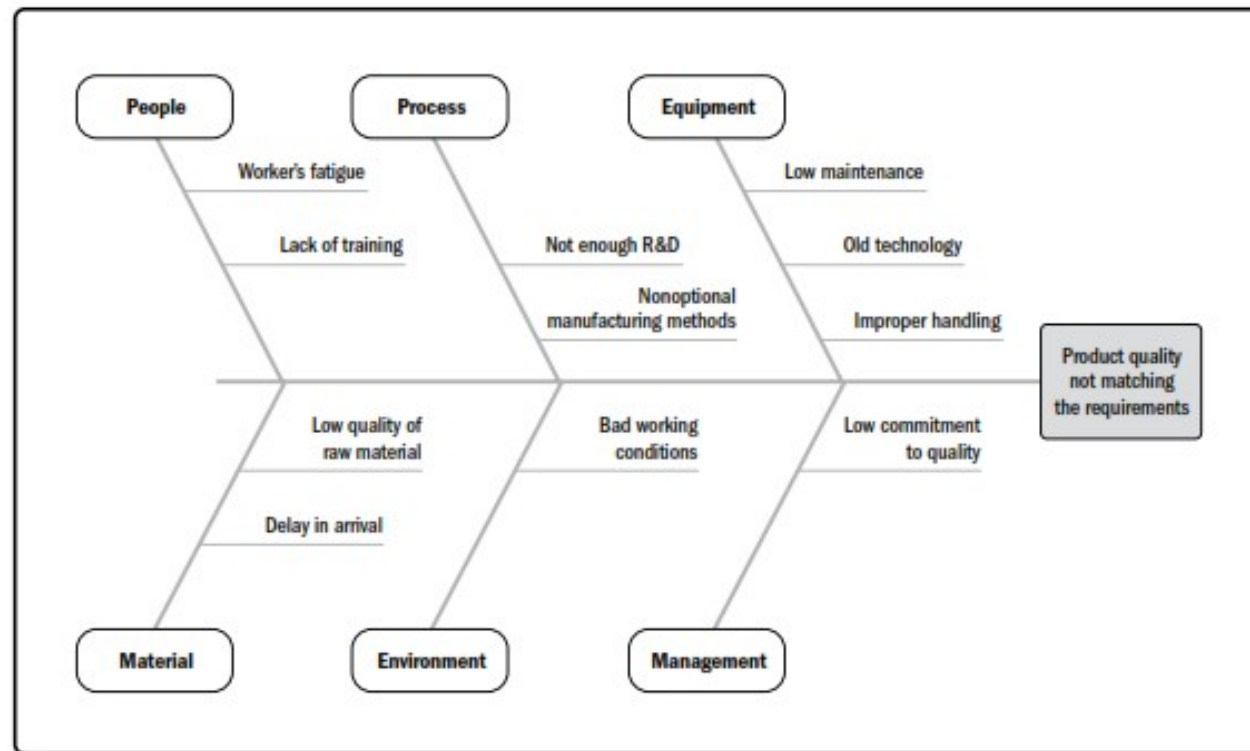
Control Charts



Scatter Diagrams



Cause-and-effect diagrams /fishbone diagrams/ why-why diagrams/Ishikawa diagrams.



AUDITS

- An audit is a structured, independent process used to determine if project activities comply with organizational and project policies, processes, and procedures. A quality audit is usually conducted by a team **external** to the project, such as the organization's internal audit department, PMO, or by an auditor external to the organization. Quality audit objectives may include but are not limited to:
 - Identifying all good and best practices being implemented;
 - Identifying all nonconformity, gaps, and shortcomings;
 - Sharing good practices introduced or implemented in similar projects in the organization and/or industry;
 - Proactively offering assistance in a positive manner to improve the implementation of processes to help raise team productivity; and
 - Highlighting contributions of each audit in the lessons learned repository of the organization.

Design for X (DfX)

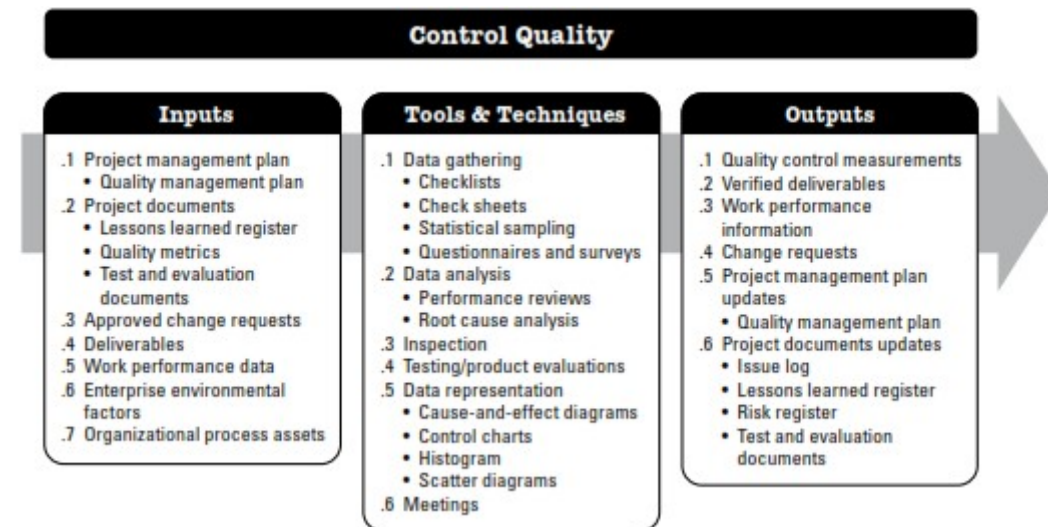
- Design for X (DfX) is a set of technical guidelines that may be applied during the design of a product for the optimization of a specific aspect of the design. DfX can control or even improve the product's final characteristics. The X in DfX can be different aspects of product development, such as reliability, deployment, assembly, manufacturing, cost, service, usability, safety, and quality. Using the DfX may result in cost reduction, quality improvement, better performance, and customer satisfaction.

Control Quality

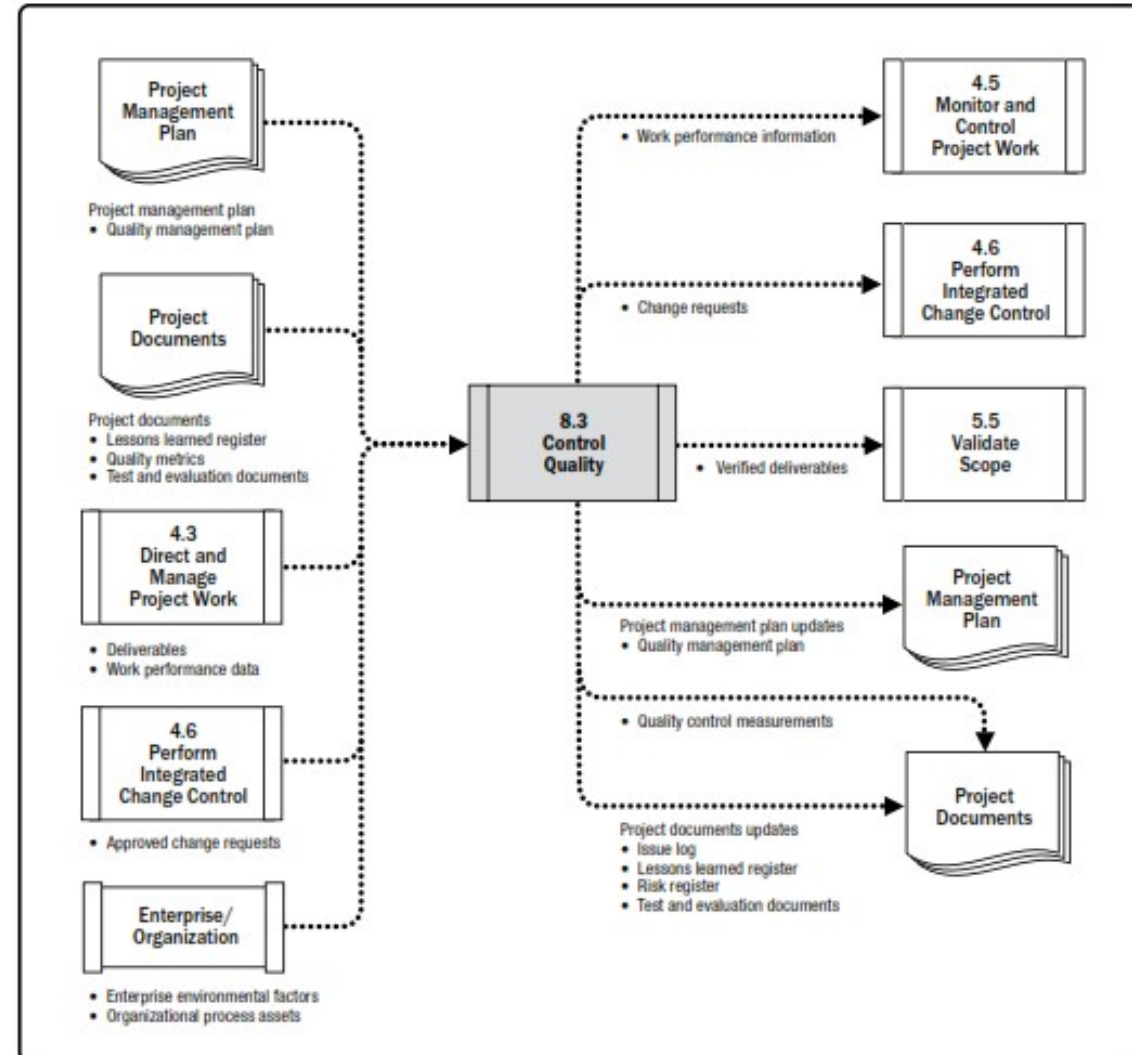
- It's not enough to inspect the final product. You must look at all of the things that you make throughout a project to find bugs. In fact, the earlier you find them, the easier they are to fix. The **Control Quality process is all about inspecting work** products to find defects.



Control Quality is in the Monitoring and Controlling process group. Like Control Scope and Control Costs, you look at the work performance information that is coming from your project and compare it to your plan. *If there are problems, you recommend a change. That way, you can either fix the problem or make sure that it doesn't happen again.*



Control Quality: Data Flow Diagram



Quality Control

LAST WEEK

Lisa looked for defects in the parts as they were being made.

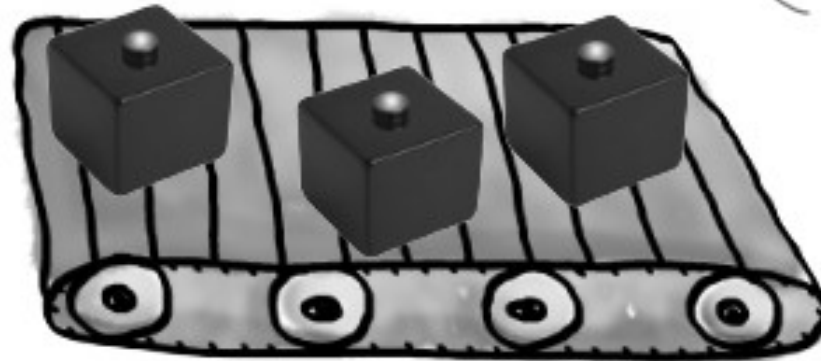


She also inspected the blueprints for the Black Box when they were designed.



TODAY

Lisa takes a good look at a sample of all of the products that are about to be shipped to Black Box 3000™ customers.



Outputs



Quality control measurements are all of the results of your inspections: the numbers of defects you've found, numbers of tests that passed or failed—stuff like that. You'll use them when you look at the overall process you are using in your company to see if there are trends across projects.

That's coming up in the Quality Assurance process. That's next!

Verified deliverables and validated changes are two of the most important outputs of Control Quality. Every single deliverable on the project needs to be inspected to make sure it meets your quality standards. If you find defects, the team needs to fix them—and then those repairs need to be checked, to make sure the defects are now gone.

First the team inspects every deliverable to find defects that need to be fixed.



Deliverables



Validated defect repair

When you've finished inspecting your product, you know whether or not your fixes worked.



Organizational process assets updates

You might need to update templates for quality metrics or checklists.

Lessons learned updates are where you keep a record of all of the major problems that you solve in the course of your project so that you can use them later.

Completed checklists are records of quality activities that are performed through the course of the project and their results. It's a good idea to keep records of the results of reviews and quality tests.

There's just one output here, organizational process assets updates. You'll store your lessons learned and records of your completed checklists in your organizational process asset library.

Project Management plan updates

You may need to update the Quality Management plan and the Process Improvement plan, which are both subplans of the Project Management plan.



Project Management plan updates

You might need to update the PM Plan because of what you find in Control Quality.