Plan Quality Management Tools and Techniques Handout

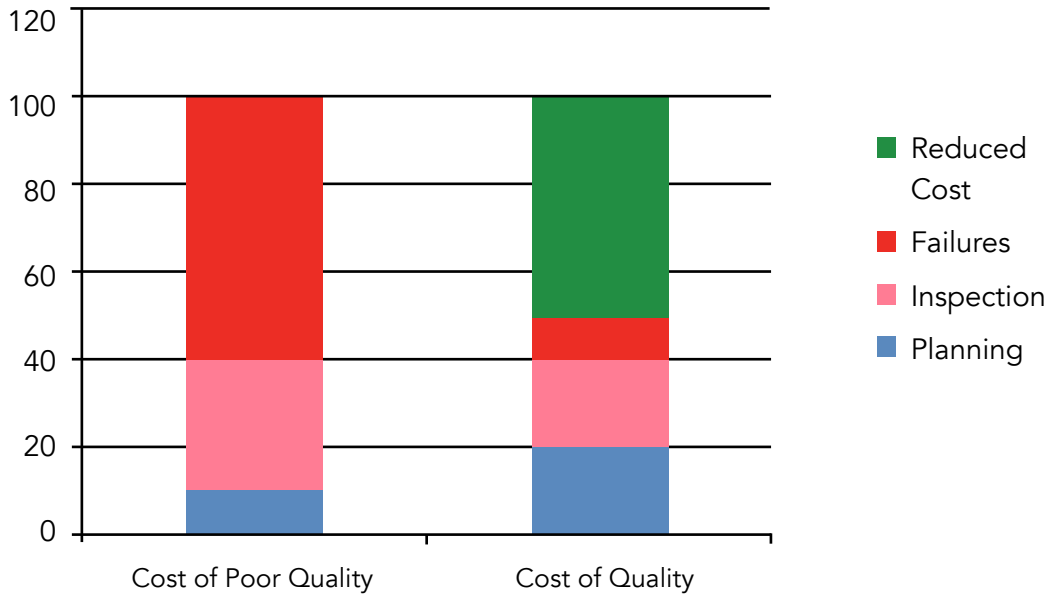
When you think of quality, what do you think it is? Is it building a **quality** product? Or maybe making sure your customer is satisfied? Or is it someone else's problem to deal with? Well, 1quality, simply put, is to minimize variations in products and to deliver results that meet defined requirements. It's important to recognize and consider the following when thinking about quality:

- **Customer satisfaction:** Understanding the customer's requirements and making sure they are met is key to quality.
- **Prevention over inspection:** It used to be that companies "fixed" the product after it was completed, doing a lot of rework. It's now all about being proactive and saving money in the long run, by implementing quality processes from the start.
- **Continuous improvement:** To go along with prevention over inspection, it's important to build in continuous improvement into projects and processes. All processes, regardless of how well they run, can be improved.
- **Management responsibility:** As stated before, quality is the responsibility of the project manager, but it's also management's responsibility to provide the resources needed to implement quality processes and maintain them.
- **Mutually beneficial partnership with suppliers:** In companies I've worked for, we really worked with our suppliers to raise their quality standards. We proved to them that implementing a quality system would benefit us, them, and their other customers. If they provided a good quality product, then we were likely to continue business with them and recommend them to others.
- **Cost of quality (COQ):** This can include (1) the cost of not implementing quality processes. for example, rejects, rework, cost of extra resources to rebuild or rework the product, and returns, or (2) the cost of building in quality processes from the beginning, leading to fewer returns, rejects or rework.
- **Quality vs. grad:** Quality looks at how a set of inherent characteristics fulfills requirements. For example, the product is 4 inches by 6 inches and the grade is a category assigned to deliverables that have the same functionality but different technical characteristics, like a Timex versus a Rolex watch. The Timex may not be made of high-grade materials, but it's high quality because it works when you need it to and doesn't break down.

Tools and Techniques Used for Quality Management

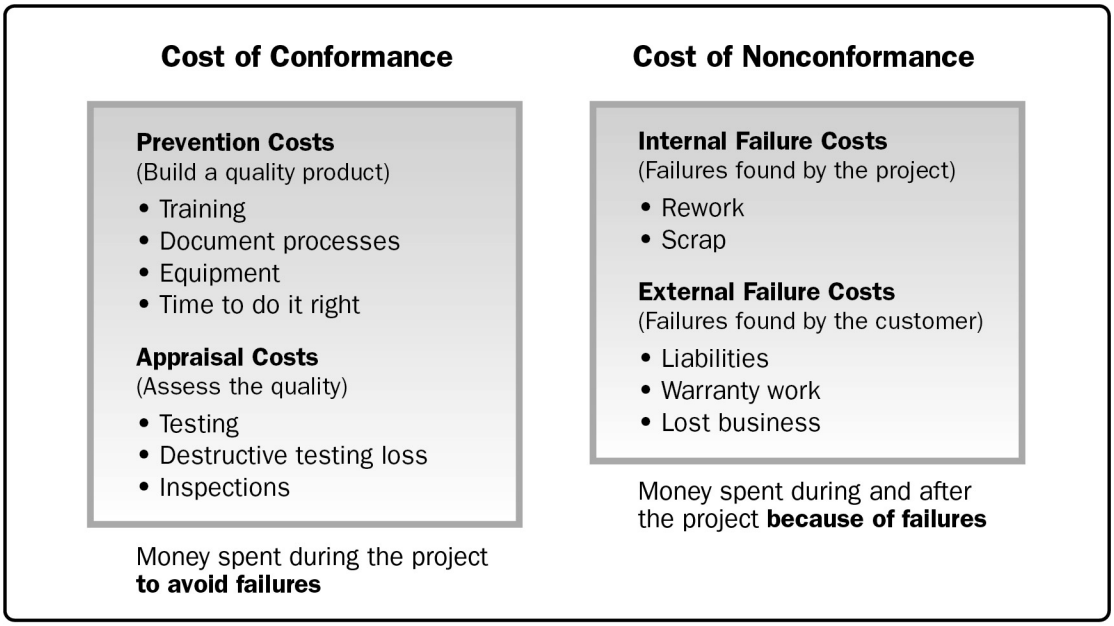
- Cost-benefit analysis looks at the cost of implementing quality processes. If the cost is more than the benefit, then it doesn't make sense to implement it. If the benefit outweighs the cost, then implement it. The benefits may include acceptance of the product, less rework, and overall cost savings.

- [1]Cost of quality includes all costs incurred over the life of the product by investment in preventing nonconformance to requirements, appraising the product or service for conformance to requirements, and failing to meet requirements (rework).
    - Here is a chart showing what the COQ might look like for a company that does and doesn't take the time to implement quality processes:



The left bar shows the cost of poor quality. With very little planning, there's more inspection and a lot of failures, which costs the organization more money. The bar on the right shows that with more upfront planning, along with inspection, the rate of failures is less and the cost savings are huge.

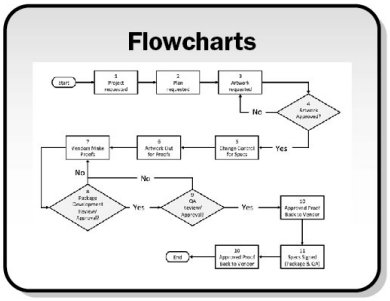
Here's a figure showing details about the cost of quality and the cost of nonconformance:



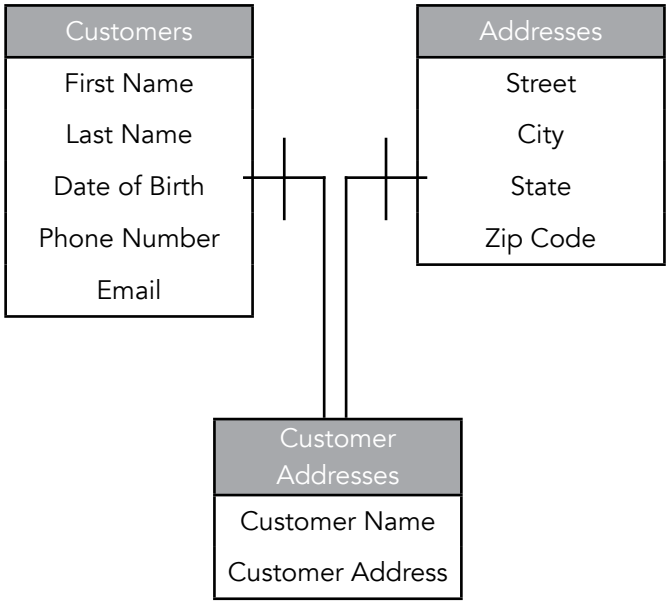
[2]**Figure 8-5 (Guide).** Cost of Quality

There are several data representation techniques. Let's take a look at each of them.

- [3]Flowcharts, also known as process maps, are used to show the flow of a process, from start to finish. Creating them helps to identify gaps in a process or steps that may create quality problems.



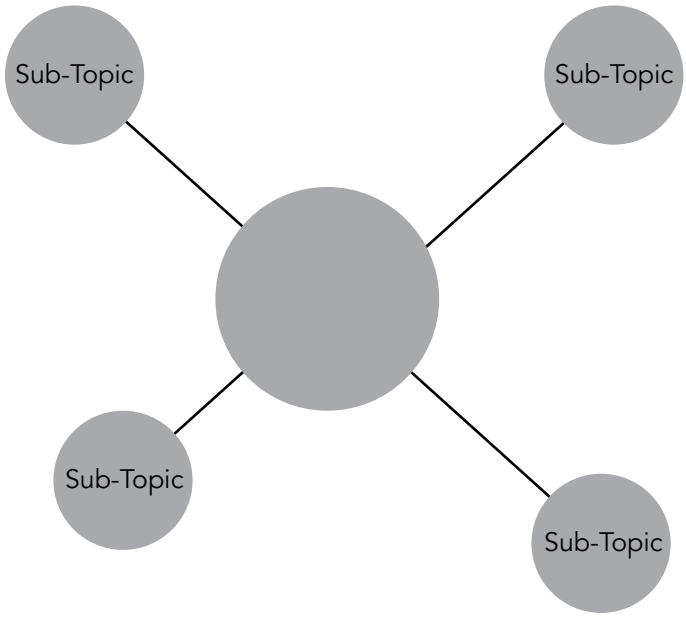
- Logical data model is a visual representation of an organization's data, described in business language.



- Matrix diagrams use the relationships between factors to help with decision making.

Customer Prioritization	Product 1	Product 2	Product 3	Product 4
Feature 1	✗	✓	✓	✗
Feature 2	✓	✓	✗	✗
Feature 3	✓	✓	✓	✓
Feature 4	✗	✗	✓	✓

- Mind mapping uses diagrams to show relationships between objects or to organize information.



There are actually many quality tools and techniques, but these are the ones you'll be tested on.

[1]These definitions are taken from the Glossary of Project Management Institute, A Guide to the Project Management Body of Knowledge, (PMBOK® Guide) – Sixth Edition, Project Management Institute Inc., 2017.

[2]Project Management Institute, A Guide to the Project Management Body of Knowledge, (PMBOK® Guide) – Sixth Edition, Project Management Institute Inc., 2017, Fig. 8-5, Page 283.

[3]Project Management Institute, A Guide to the Project Management Body of Knowledge, (PMBOK® Guide) – Fifth Edition, Project Management Institute, Inc., 2013, Figure 8-7, Page 239.