[QUALITY PERSPECTIVE]
Transcendental: delights user.
User: meets needs.
Manufacturing: standard compliance.
Product: inherent intrinsic value.
Valued-based: customer pays for s/w.

[QUALITY CHARACTERISTICS]
Functionally:> Suitable, Accuracy, Interoperable, Security
Reliability:> Maturity, Fault tolerance, Recoverable
Usability:> Understandable, Learn-able, Operable
Efficiency:> Time behaviour, Resources behaviour
Maintainable:> Analysable, Changeable, Stable, Testable
Portability:> Adaptable, Installable, Conformance, Replaceable

[DEFINITIONS: ERROR, FAULT, FAILURE, & DEFECT]
Key to correctness aspect of s/w quality is concept of defect, failure, fault & error. The term "defect" generally refers to some problem with s/w, either with its external behaviour or with its internal characteristics.
Failure: Cannot perform function.
Fault: Incorrect o/p.
Error: Human action that produces incorrect result.

[QA ALTERNATIVES]
Defect prevention through error blocking or error source removal.
Defect reduction through fault detection & removal.
Defect containment through failure prevention & containment.

[QUALITY ENGINEERING: ACTIVITES & PROCESS]
Pre-QA -> set quality goals, select QA activities
In-QA -> execute QA activities, follow up & get issues fixed.
Post-QA -> quality measurement, assess, improve.

[IMPORTANCE OF TESTING]
> b/c proper testing reduces overall dev cost, time, budget & effort for a system dev process.
> b/c req specification are unambiguous, complete, reasonably detailed, progressive, consistent, attainable & testable.
> b/c it provides clear error manages.
> b/c inputs are easier & outputs are more flexible.
> b/c all/most of functionality has been provided in s/w, & testing strategy is applied for specification level to data base construction level.
> b/c of acceptances of users for s/w.
> b/c without testing it is impossible to diagnose errors.
> so that each module has no defects.
> so that increase customer satisfaction, user approachability & confidence that correct output will be achieved.
> so that s/w would work well to customize req.
> so that previously reported bugs have been fixed.

[FUNCTIONAL TESTING]
FT is a quality assurance process used to verify that an application functions as users expect it to.
FT ensures that simple & complex enterprise application are deployed on time & on cost.
Today, main interest of tester & companies around world is achieving target on time & cost. FT covers
+> Unit, WBT & BBT, Smoke, Integration, System, Regression, Pre-User Acceptance, Interface & usability
All special cases, tricky situations, common mistakes, misconceptions should be tested.

[FUNCTIONAL V/S STRUCTURAL TESTING]
FT focuses on external behaviour, ST focuses on internal implementation.

People's R&R: [Consumers, Producers]

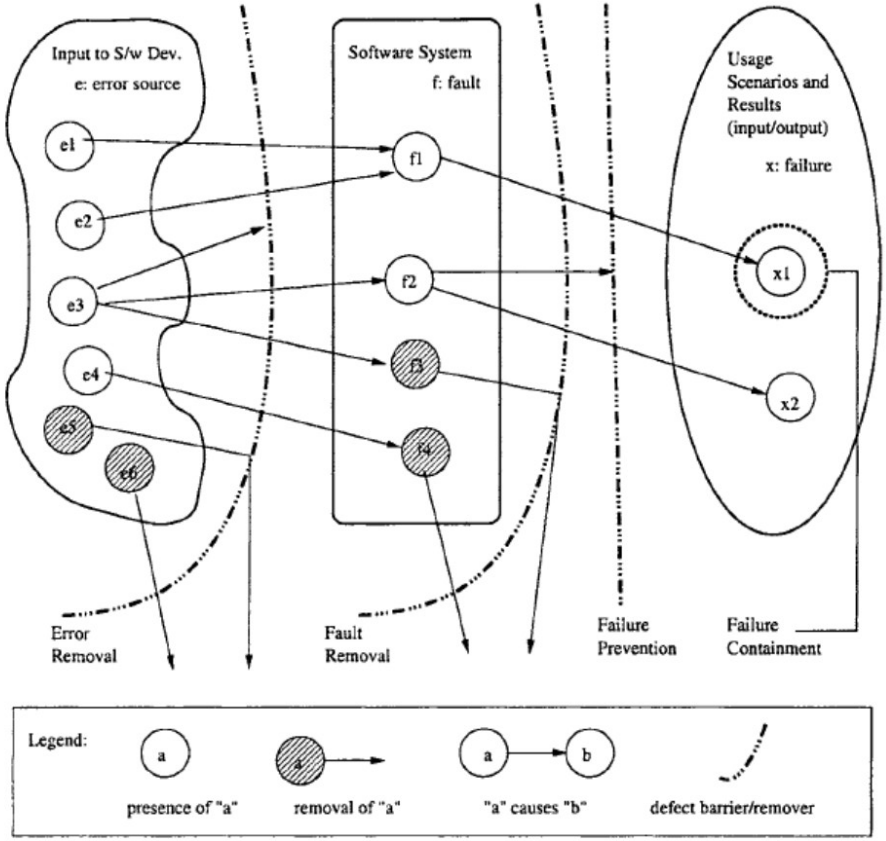

Figure 3.1 Generic ways to deal with defects

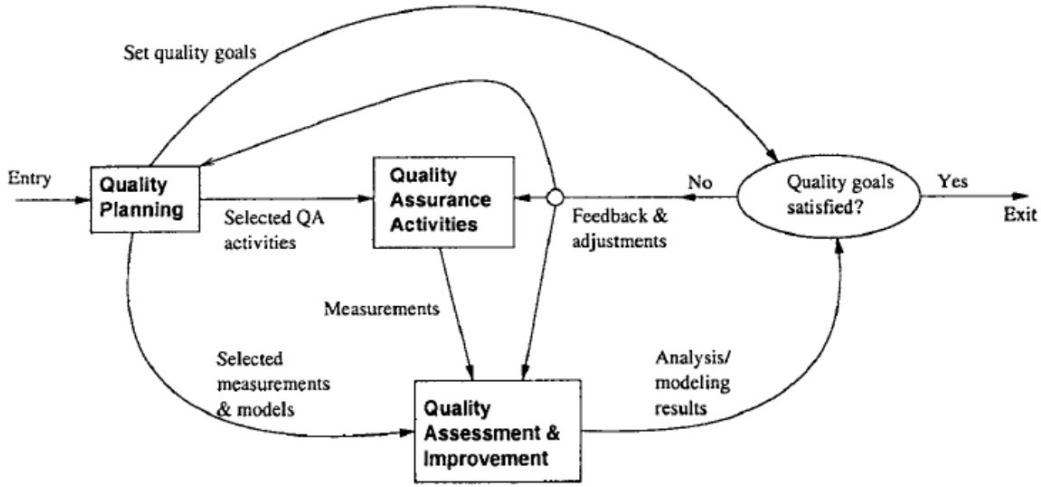

Figure 5.1 Quality engineering process

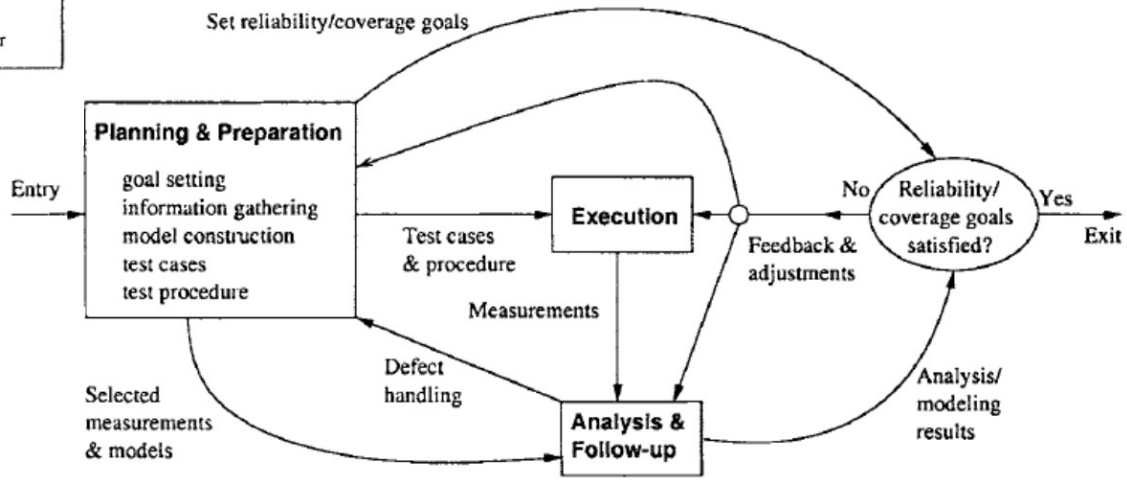

Figure 6.1 Generic testing process