# SS ZG622:
# Software Project Management
# Contact Session # 7

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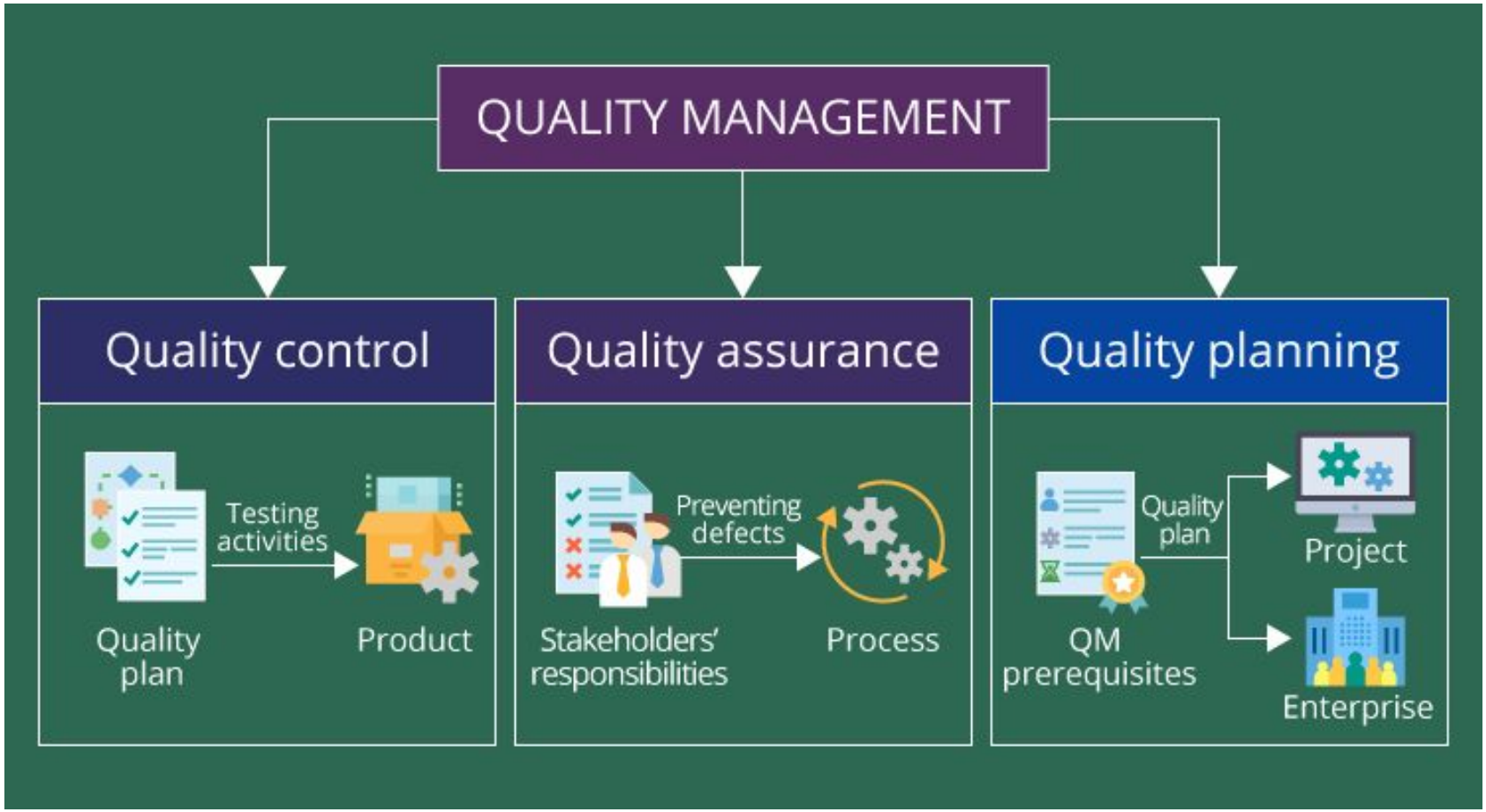
# Topics

- Quality management
- Quality planning
  - Identification relevant quality attributes
  - Identification of associated measures
  - Setting up standards for the product and processes

# Quality

- Quality, simplistically, means that a product should meet its specification
- The software product should deliver the required functionality (*functional requirements*) with the required **quality attributes** (*non–functional requirements*)

# Quality management




https://www.scnsoft.com/blog/quality-management-optimization

# Quality management

- Quality planning
  - setting quality standards and developing a plan to achieve them
- Quality assurance
  - ensuring that the development process is compliant with the quality plan
- Quality control
  - monitoring and evaluating the product to ensure that it meets the quality requirements

*Further discussion on this topic is planned during the second half of this course*

# Quality plan

- Identifies the most significant quality attributes appropriate for the product
- Defines the assessment process in detail for each quality attribute (including goals or target values)
- Indicates which standards should be applied and defines new standards as necessary

# A part of an example quality plan

innovate achieve lead

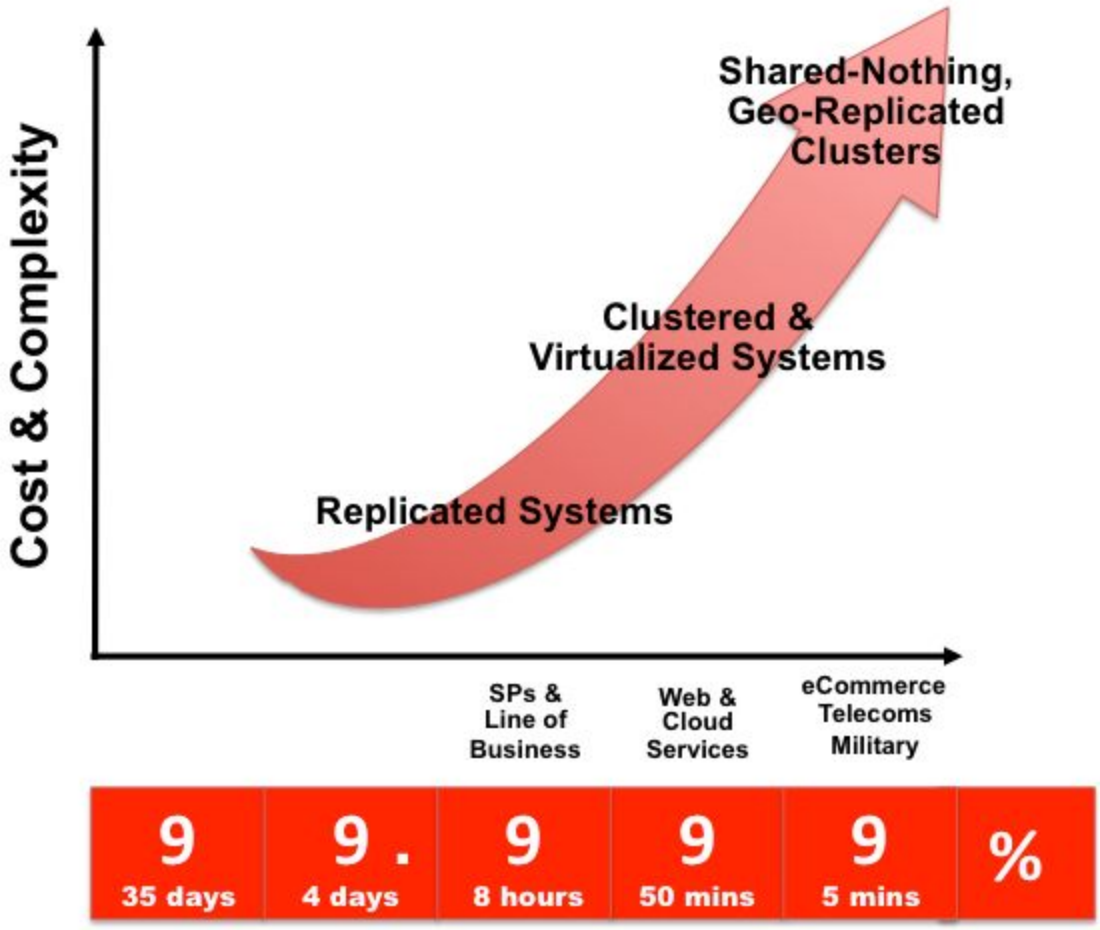
| Process | Process quality standards & Stakeholder expectations | Quality assurance activity | Frequency/ interval | Who is responsible |
|---|---|---|---|---|
| Review software development practices of software application XYZ | Developers have completely and accurately captured application requirements. | Peer review of software requirements specification. | At regular intervals during the collection of requirements and a final review at the conclusion of requirements collection. | Lead developer in conjunction with other knowledgeable developers. |
| | | | | |

Source: www.acqnotes.com

# Quality attribute example

- Reliability – probability of system working satisfactorily within a specific period of time
- Possible measures:
  - Availability: % of a time that a system is usable
  - Mean time between failures: total service time/number of failures
  - Failure on demand: probability that system will not available when needed
  - Support activity: number of fault reports generated and processed

# Trade-offs: Cost & Complexity vs. Availability




https://docs.oracle.com/cd/E17952_01/mysql-5.5-en/ha-overview.html

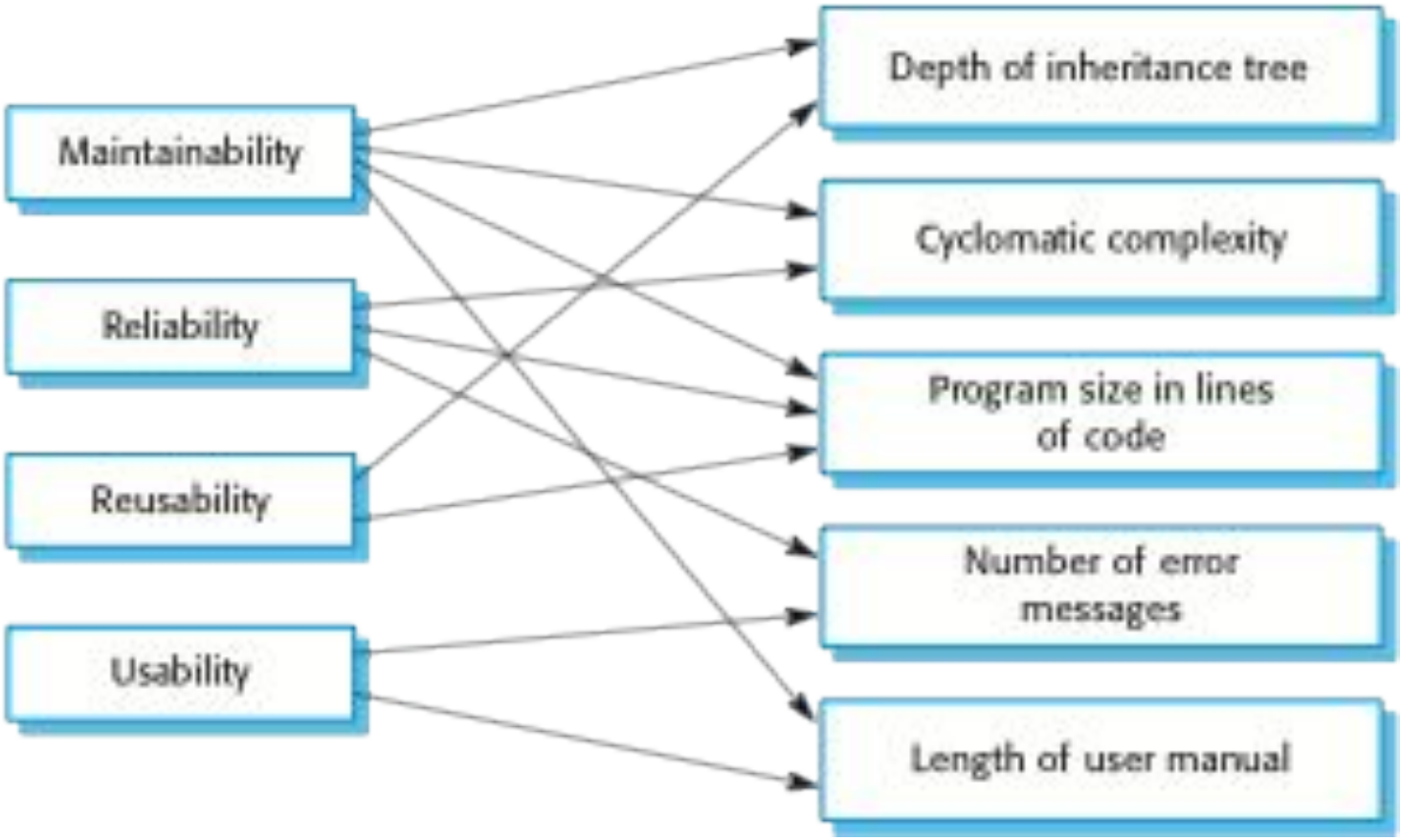
# CS#7-1

## Suggest and justify three quality attributes relevant for Mux-Core system

**Software Quality Attributes**

- Safety
- Security
- Reliability
- Resilience
- Robustness
- Understandability
- Testability
- Adaptability
- Modularity
- Complexity
- Portability
- Usability
- Reusability
- Efficiency
- Learnability

# Quality attributes and some related measures/metrics



# CS#7-2

Suggest measures for the selected quality attributes relevant for Mux-Core system

Ex: Reliability – availability, MTTF, MTTR, prob. failure on demand