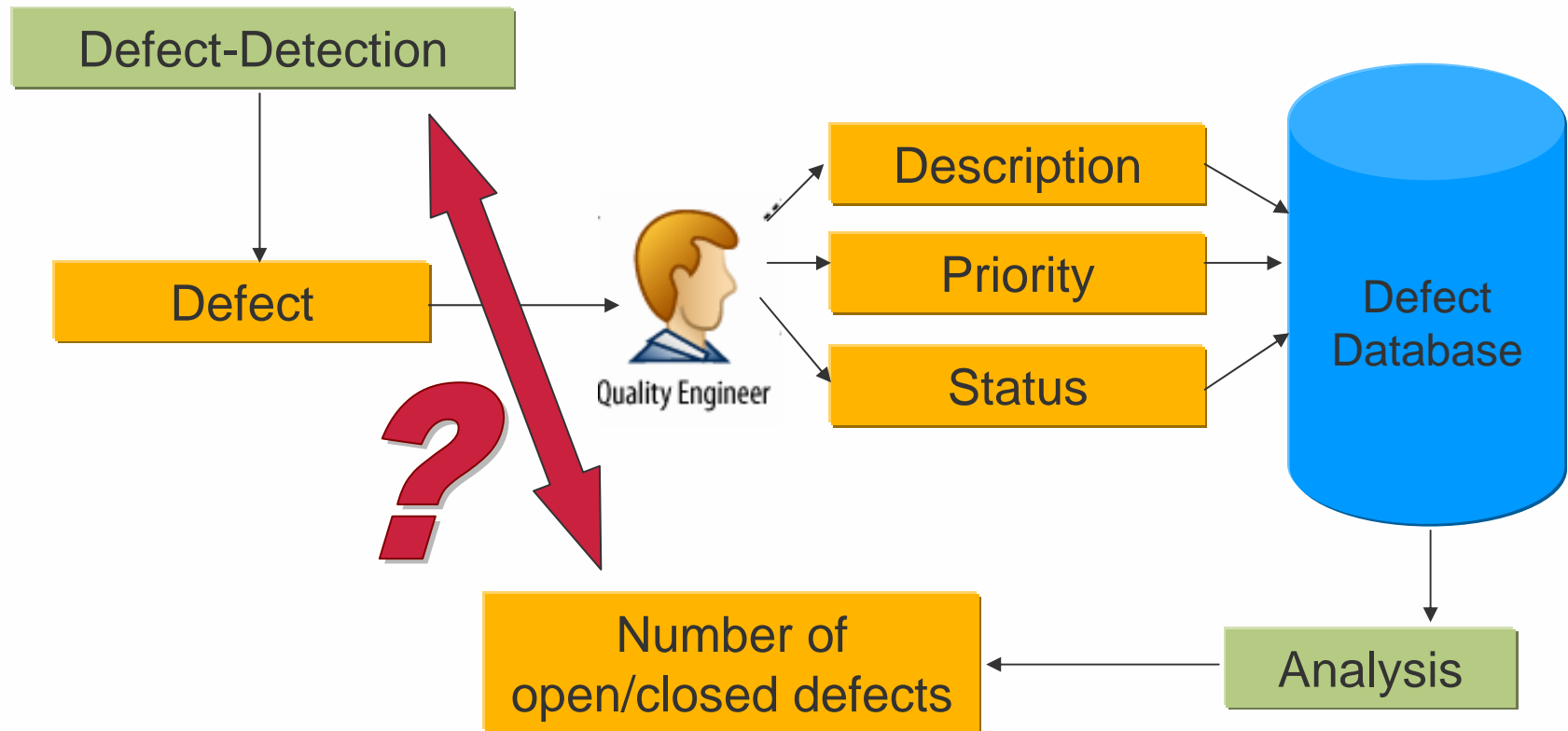


# Defect Classification and Defect Types Revisited

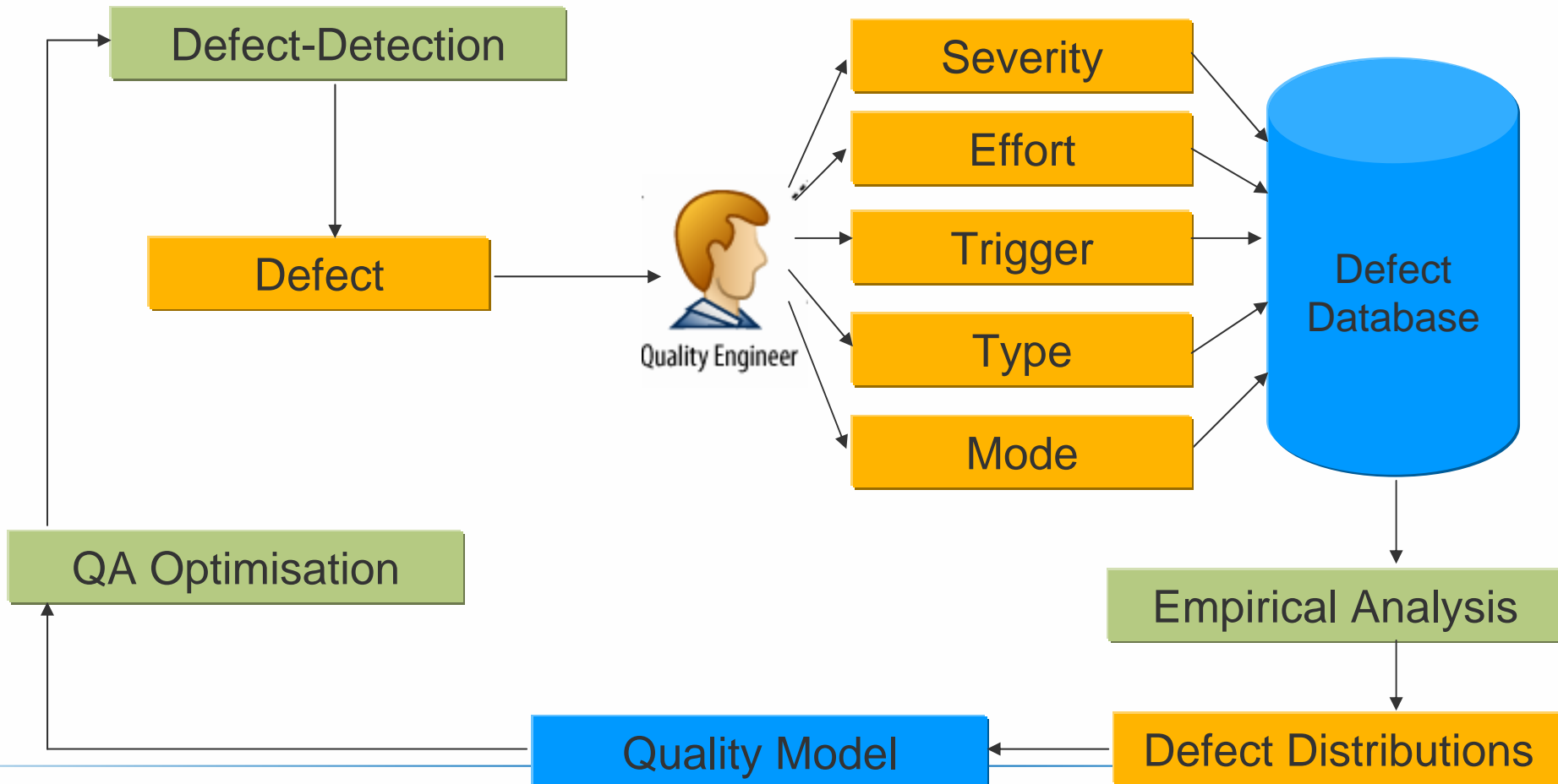
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# The Real Defect-Detection Process



# The Ideal Defect-Detection Process



# State of the Art

- Defect Taxonomies
  - Implementation solution
  - Beizer
- Root Cause Analysis
  - Analysis of developer mistakes
  - Fault prevention
  - IBM
- Defect Classification
  - Classification along several dimensions
  - IEEE Std 1044-1993
  - IBM's ODC
  - HP's Defect Origins, Types, and Modes

# Challenges

- Different Artefacts
  - Similar classifications?
  - Propagation?
- Dimensions
  - Basic set?
  - What can be reasonably expected to be documented?
- Defect Type Distributions
  - General distributions?
  - What factors do they depend on?
  - Domain-specific distributions?
- Connection to Quality Models
  - What quality attributes are affected?
  - Classifications as part of a quality model or vice versa?
- How can we justify the effort for the quality engineer?

## Conclusions

- Useful quality assurance optimisation only possible using defect classifications intensively
- We need to
  - find the important dimensions
  - for different artefacts
  - provide empirical data
  - relate classifications to quality models
  - better integrate the classification in the QA process
  - Convince practitioners of the value of defect classification



# Activity-Based Quality Models

