



FMEA

Failure Mode Effects Analysis

# What is Failure Mode and Effect Analysis?

F.M.E.A. is a simple way of predicting what might go wrong.

By using a structured method, risks can be quantified and compared.



# Design failure modes effects analysis (DFMEA)

- This identifies potential failures of a *design* element *before* they occur.
- It establishes the cause of potential failures.
- It anticipates the effects of the failure and quantifies its severity.
- It predicts how often and when failures might occur.

# Process FMEA (PFMEA)

- This recognizes and evaluates the potential failure of a process and its effect.
- It identifies actions which could eliminate or reduce the occurrence of failure, or improve the likelihood of detection.
- It requires the process to be documented systematically.
- It can be used to track process changes and incorporate them into future PFMEAs to avoid potential new failures.

# Why is FMEA Important?

- FMEA provides a basis for identifying root failure causes and developing effective corrective actions.
- The FMEA identifies reliability/safety of critical components.
- It facilitates investigation of design alternatives at all design stages.
- It provides a foundation for other maintainability, safety, testability and logistics analyses.

# Poka-yoke

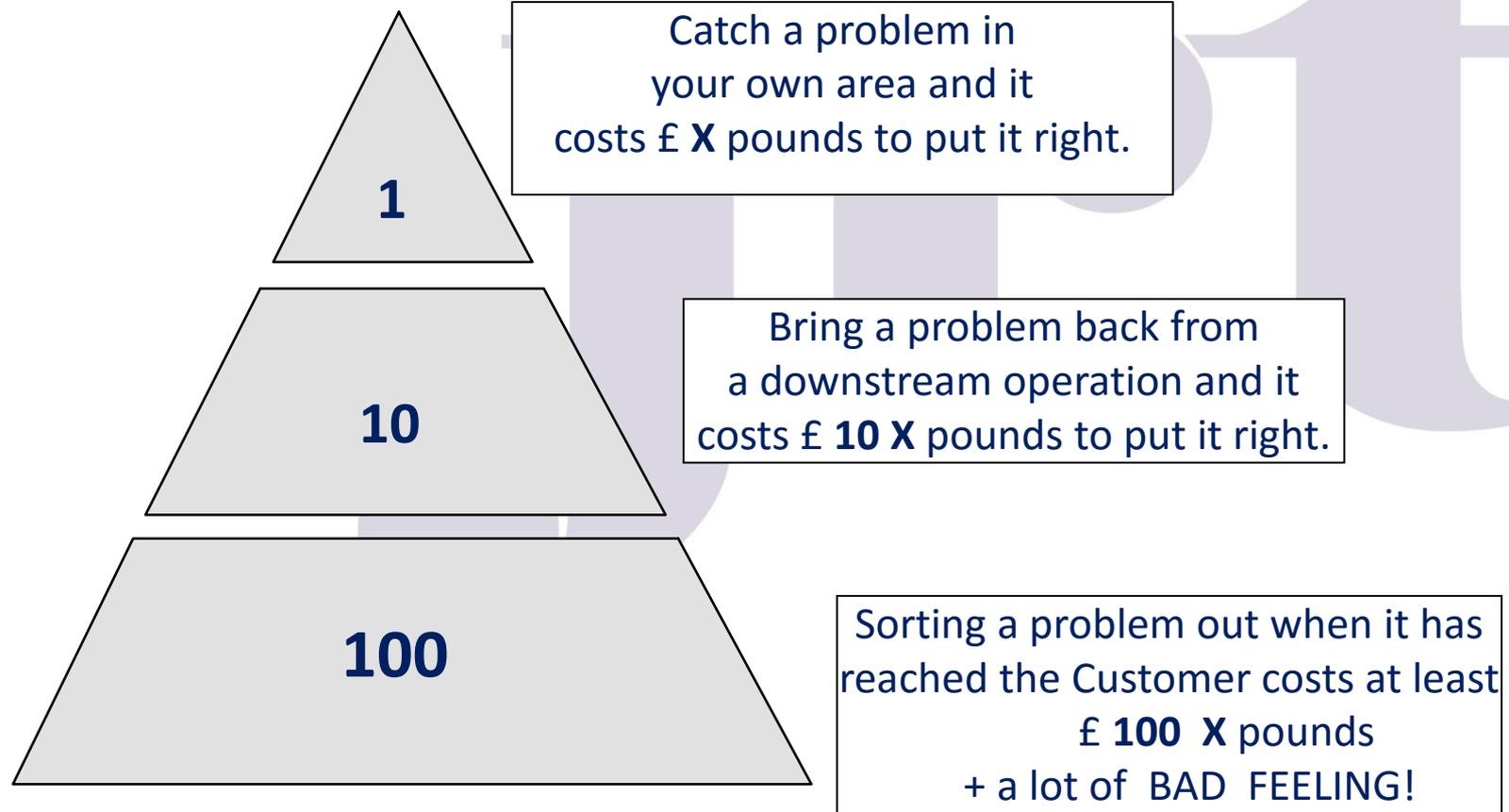
Poka-yoke (pronounced "POH-kah YOH-kay") was invented by Shigeo Shingo in the 1960s.

The term "poka-yoke" comes from the Japanese words "poka" (inadvertent mistake) and "yoke" (prevent)

The essential idea of poka-yoke is to design your process so that mistakes are impossible or at least easily detected and corrected.



# Remember the 1:10 : 100 Rule



*This is a factor that should be continually emphasised.*