



# **SMMT QMD**

## **Field Failure Analysis**

# Background

An average car has about **30,000** parts.



# Background

The annual warranty costs of the automotive industry are between two and four percent of the vehicle costs and therefore exceed the 30 billion US dollars estimated by experts within the industry

Source:

**Automobilwoche**  
DIE BRANCHEN- UND WIRTSCHAFTSZEITUNG

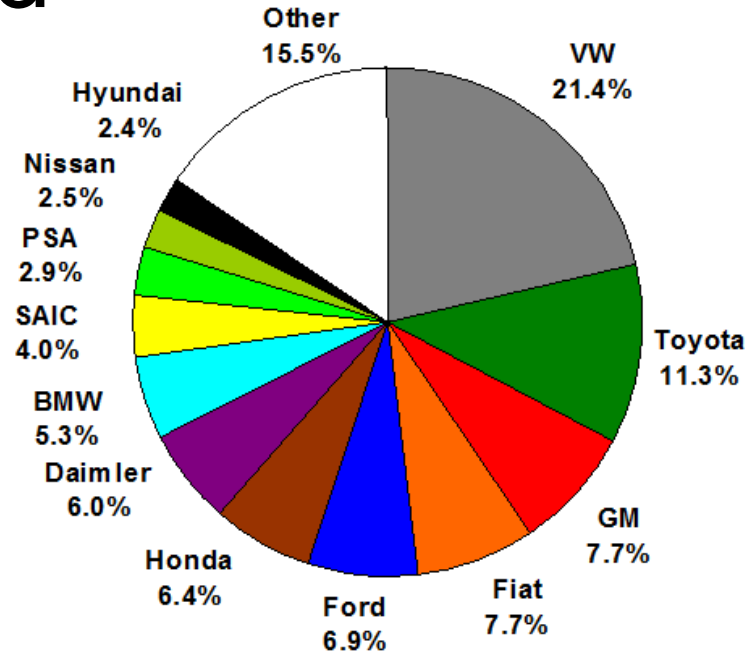
19th June 2006

In the face of global cost for warranty which is at a yearly rate of 45 to 50 billion US dollars, the significance of quality and warranty claims should not be underestimated.

**BearingPoint**® 26th August 2014

**50 Billion US-Dollar represent the BIP of Montenegro. (as per: 2013)**

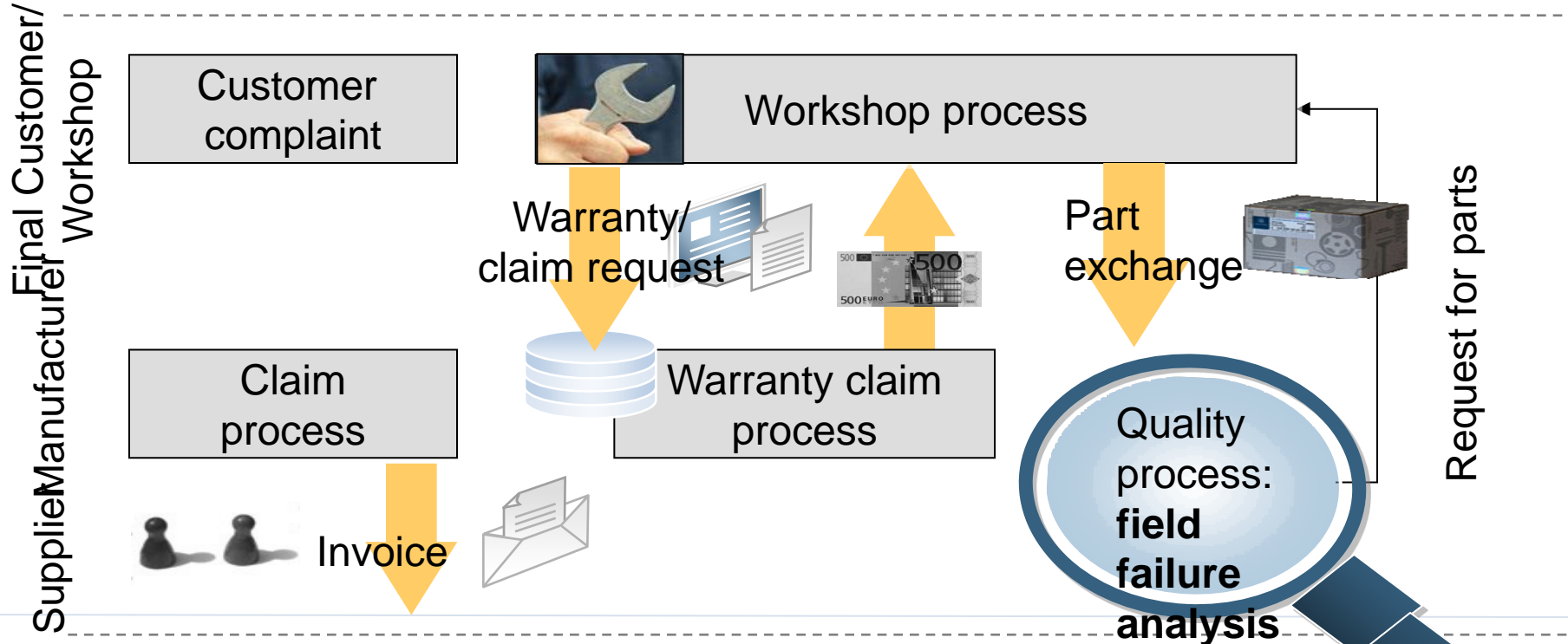
# Background



Source: Warranty Week

Share of Claims Paid (data represents 80% of auto industry)  
Percent of **US\$48.0 billion total, 2016**

# Typical Warranty Process



# IATF 16949 Warranty Requirements

## 10.2.5 Warranty management systems

When the organization is required to provide warranty for their product(s), the organization shall implement a warranty management process. The organization shall include in the process a method for warranty part analysis, including NTF (no trouble found). When specified by the customer, the organization shall implement the required warranty management process.

# IATF 16949 Warranty Requirements

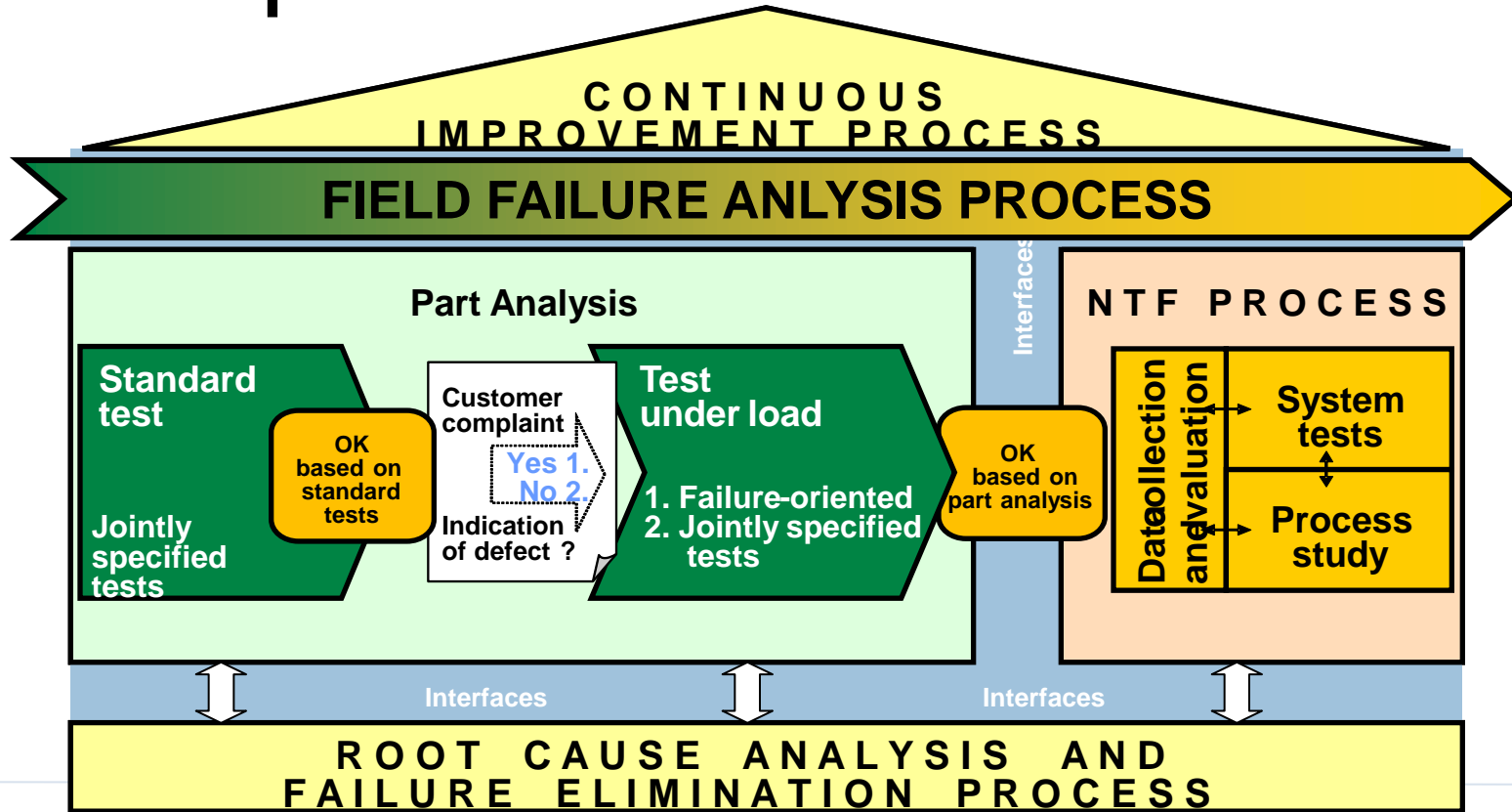
## 10.2.6 Customer complaints and field failure test analysis

The organization shall perform analysis on customer complaints and field failures, including any returned parts, and shall initiate problem solving and corrective action to prevent recurrence.

Where requested by the customer, this shall include analysis of the interaction of embedded software of the organization's product within the system of the final customer's product.

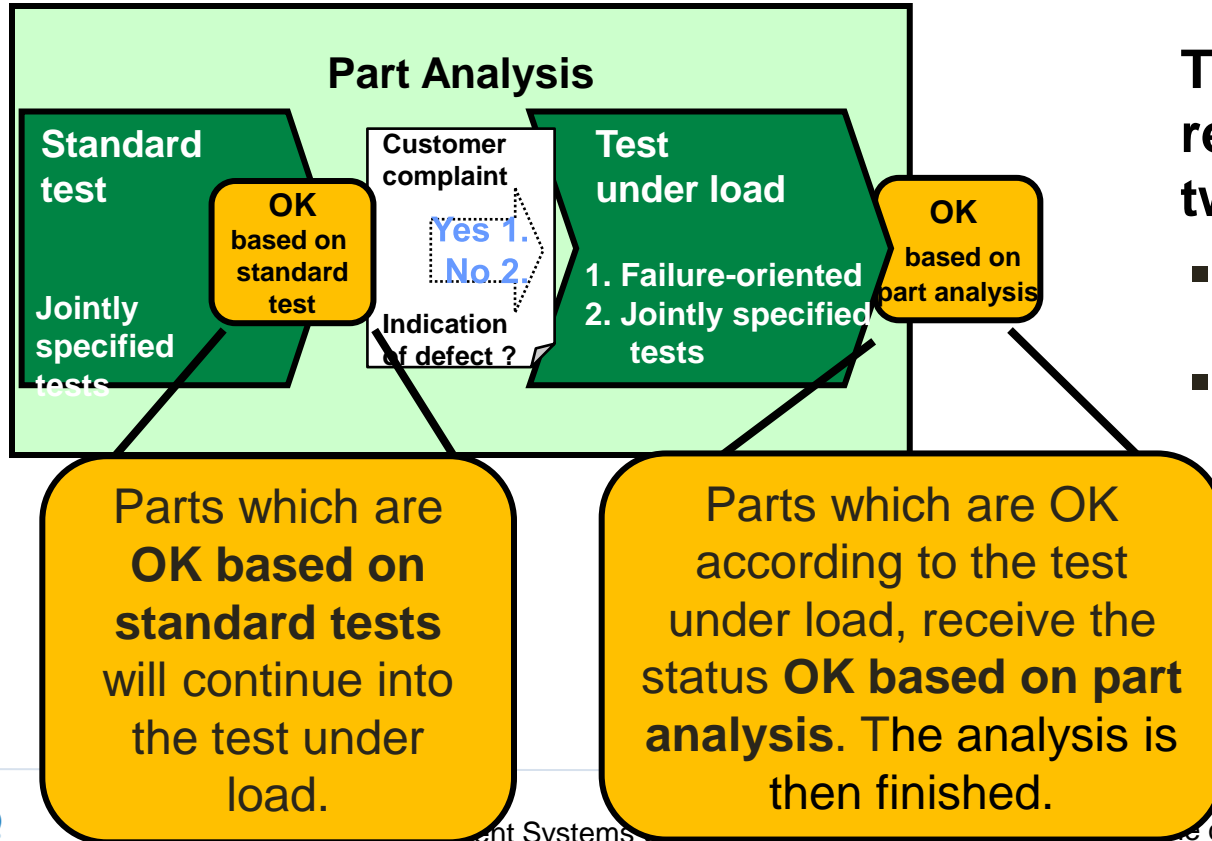
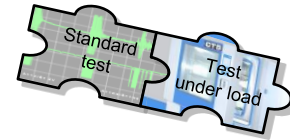
The organization shall communicate the results of testing/analysis to the customer and also within the organization.

# Concept





# The basic elements of analysis

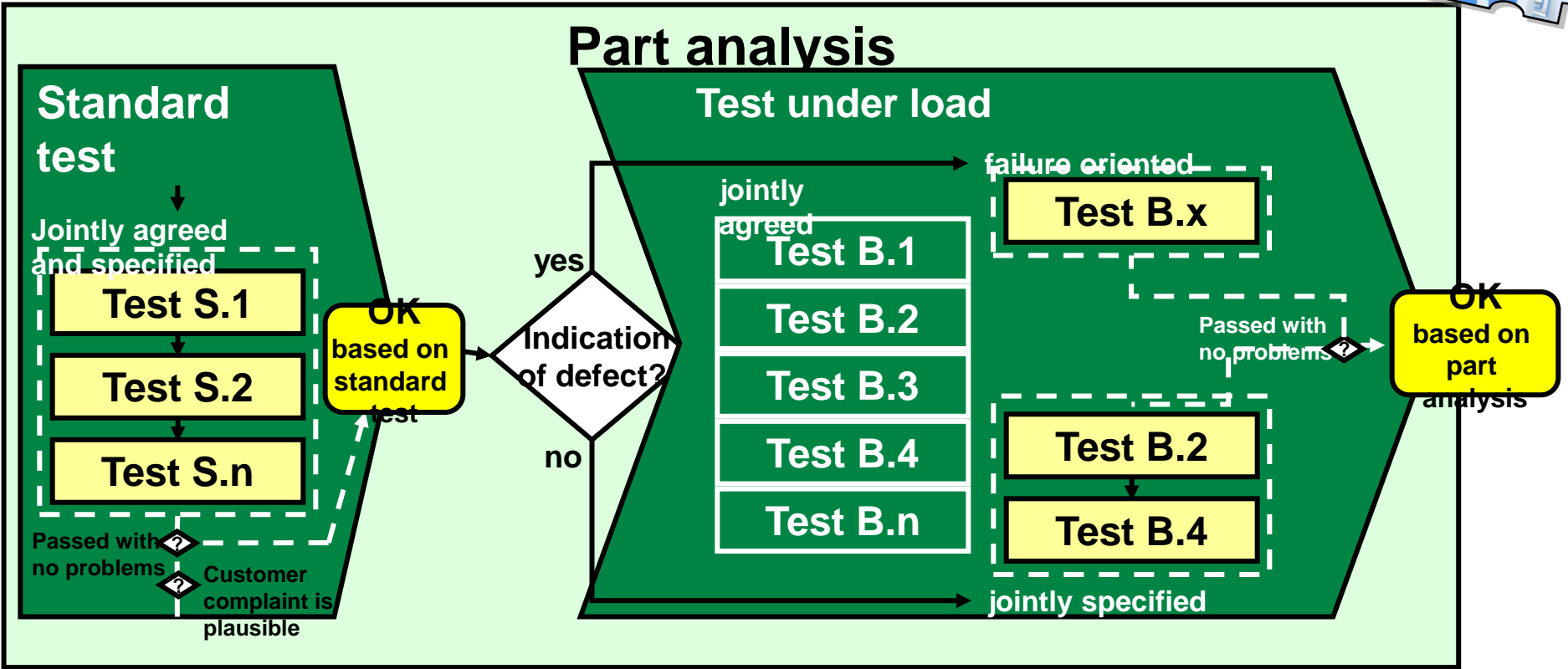


The analysis tests the relevant functions in two steps:

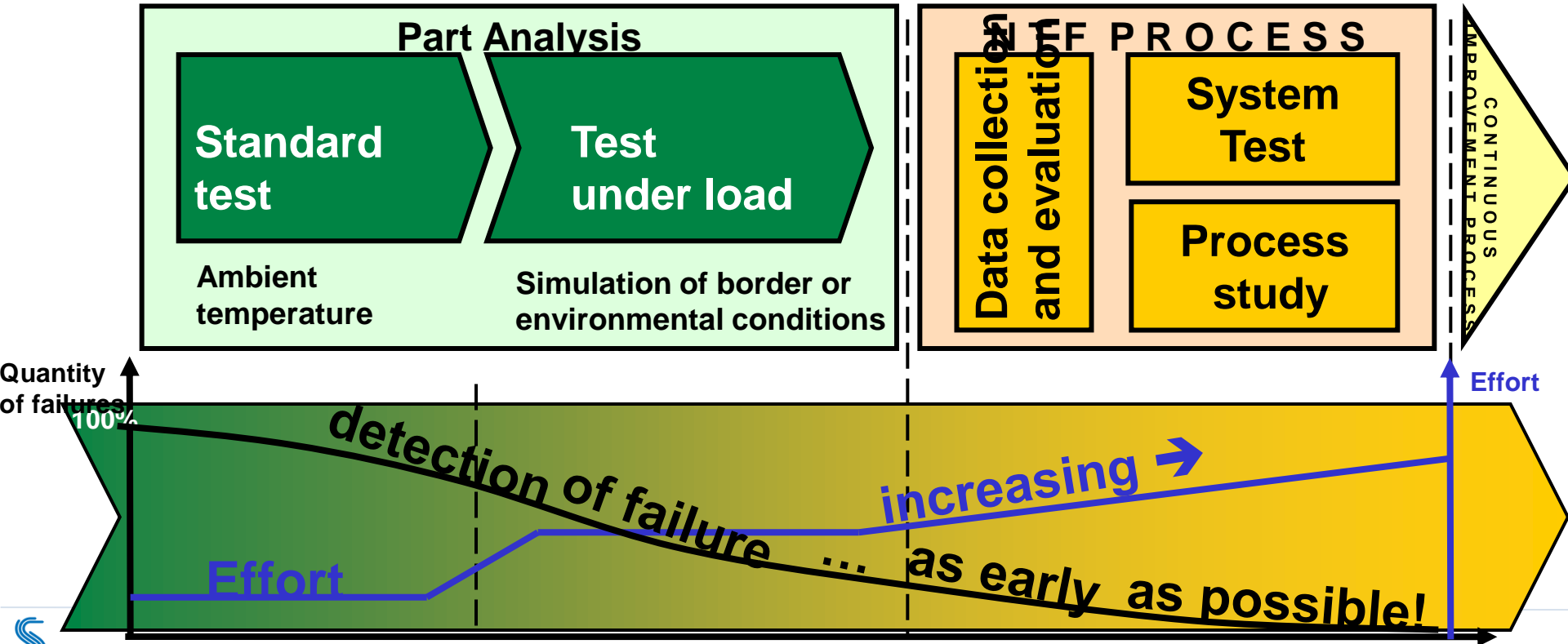
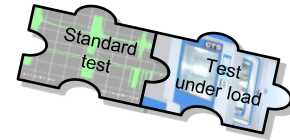
- Standard test
- Test under load

Parts which are **NOK according to part analysis** continue in the problem solving process.

# Summary – Part analysis



# Identification of failure with variable effort

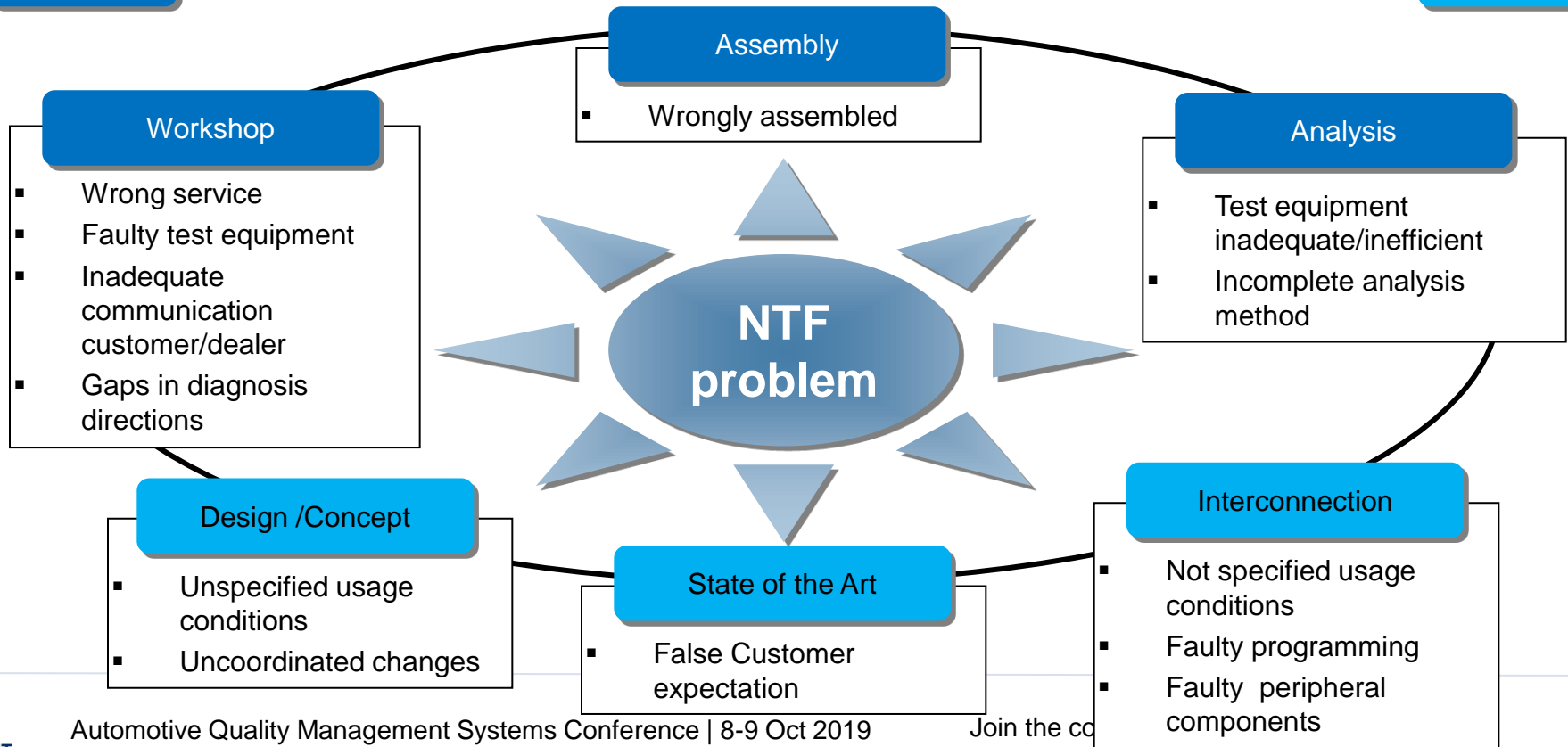


# NTF Analysis



Process

System



# Practical example of a CD/DVD changer



Process

Assembly

## Complaint (Workshop):

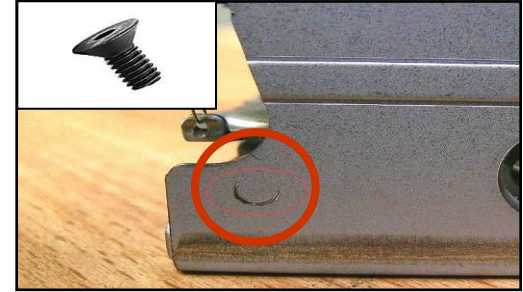
CD/DVD is not released,  
other complaints regarding drive

## Analysis result supplier:

Part “OK according to analysis” (30% share)

## Problem

- Use of too long screw had led to tension within the mechanism of CD/DVD drive
- After dismounting part was OK as tension was released



## Action

- Workshop directive (Bulletin) to change screw by complaints regarding CD/DVD drive
- Use of shorter screw in OEM production facility

# Thank you!

