# Fundamental of Testing (III)

The Psychology of Testing

# Roles and Responsibilities

| Developer role | Tester role |
| --- | --- |
| Implements requirements | Plans testing activities |
| Develops structures | Design test case |
| Design and programs the software | Is concerned only with finding defects |
| Creating a product is his success | Finding an error made by a developer is his success |

**Testing is a constructive activity as well, It aims at eliminating defects from a product !**

# Personal Attributes of A Good Tester (I)

**Curious, perceptive, attentive to detail - not all error show up up front**

- To comprehend the practical scenarios of the customer
- To be able to analyse the structure of the test
- To discover details, where failure might show

**Skepticism and has a critical eye**

- Test object contain defects - you just have to find them
- Do not believed everything you are told by the developers
- One must not get frightened by the fact that serious defects may often be found which will have impact on the course of the project.

# Personal Attributes of A Good Tester (II)

## Good communication skills

- To bring bad news to the developers
- To overbear frustrated state of minds
- Both technical as well as the issue of the practical use of the system must be understood and communicated
- Positive communication can help to avoid or to ease difficult situations.
- To quickly establish a working relationship with the developers

## Experiences

- Personal factors influencing error occurrence
- Experience helps identifying where errors might accumulate

# Differences: to design–to develop –to test

**Testing requires a different mindset from designing developing new computer systems.**

- *Common goal:* to provide good software
- *Design mission:* help the customer to supply the right requirements
- *Developer's mission:* convert the requirements into functions
- *Tester's mission:* examine the correct implementation of the customer's requirements

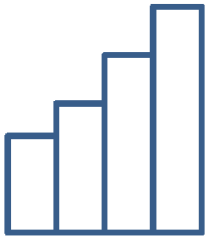
– In principle, one person can be given all three roles to work at.

- Differences in goal and role models must be taken into account
- This is difficult but possible
- Other solution (independent testers) are often easier and produce better results

# Independent Testing

–The separation of testing responsibilities support the independent evaluation of test results.

–The diagram below show the degree of independence as a bar chart.



# Types of Test Organization (I)

## Developer test

- The developer will never examine his ”creation” unbiased(emotional attachment)
- Extra costs result for the orientation of other person on the test object

–Human being tend to overlook their own faults.

- The developer run the risks of not recognizing even self-evident defects.

–Error made because of misinterpretation of the requirements will remain undetected.

- Setting up test teams where developers test each other’s products helps to avoid or at least lessen this shortcoming.

# Types of Test Organization (II)

### Teams of developers

– Developers speak the same language

– Costs for orientation in the test object are kept moderate especially when the teams exchange test objects.

–Danger of generation of conflicts among developing teams

- One developer who looks for and finds a defect will not be the other developer’s best friend

–Mingling development and test activities

- Frequent switching of ways of thinking
- Makes difficult to control project budget

# Types of Test Organization (III)

## Test teams

–Creating test teams converting different project areas enhances the quality of testing.

–It is important that test teams of different areas in the project work independently.

# Types of Test Organization (IV)

## Outsourcing tests

–The separation of testing activities and development activities offers best independence between test object and tester.

–Outsourced test activities are performed by persons having relatively little knowledge about the test object and the project background

- Learning curve bring high costs, therefore unbiased party experts should be involved at the early stages of the project

–External expert have a high level of testing know how:

- An appropriate test design is ensured
- Methods and tools find optimal
- Designing test cases automatically

–Computer aided generation of test cases, e.g. based on the formal specification documents, is also independent

# Difficulties (I)

**Unable to understand each other**

- Developers should have basic knowledge of testing
- Tester should have basic knowledge of software development

**Especially in stress situations, discovering errors that someone has made often leads to conflicts.**

- The way of document defects and the way of the defects is described will decide how the situation will develop.
- Persons should not be criticized, the defects must be stated.
- Defect description should help the developers find the error
- Common objectives must always be the main issue.

# Difficulties (II)

**Communication between tester and developers missing or insufficient. This can make impossible to work together.**

- Tester seen as “only messenger of bed news ”
- Improvement: try to see yourself in the other person’s role. Did my message come through? Did the answer reach me?

**A solid test requires the appropriate distance to the test object**

- An independent and non-biased position is acquired through distance from the development.
- However, too large a distance between the test object and the development team will lead to more effort and time for testing