

Quality for Success

From Requirements to Test

Presentation at Testnet

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SQS Group - Facts und Figures

- Founded 1982 Cologne
- Revenue in 2002
 - 52 Million Euro
- More than 20 years experience
- Specialised knowledge in various vertical markets
- 50% of DAX 30-companies are SQS-customers (major German stock index)
- European market leader for software testing and quality management
- Headquarters
 - Cologne, Germany
- Branch offices in Germany
 - Berlin, Hannover, München, Münster, Stuttgart, Frankfurt, Hamburg
- Subsidiaries
 - Austria (Vienna)
 - The Netherlands (s'Hertogenbosch)
 - Portugal (Lisbon)
 - Spain (Barcelona, Bilbao, Madrid)
 - Switzerland (Zug)
 - United Kingdom (London)

Risks for Software Development Projects

Quality

Bugs in Production!!!

Costs

Budget Overrun!!!

Missed Deadline!!!

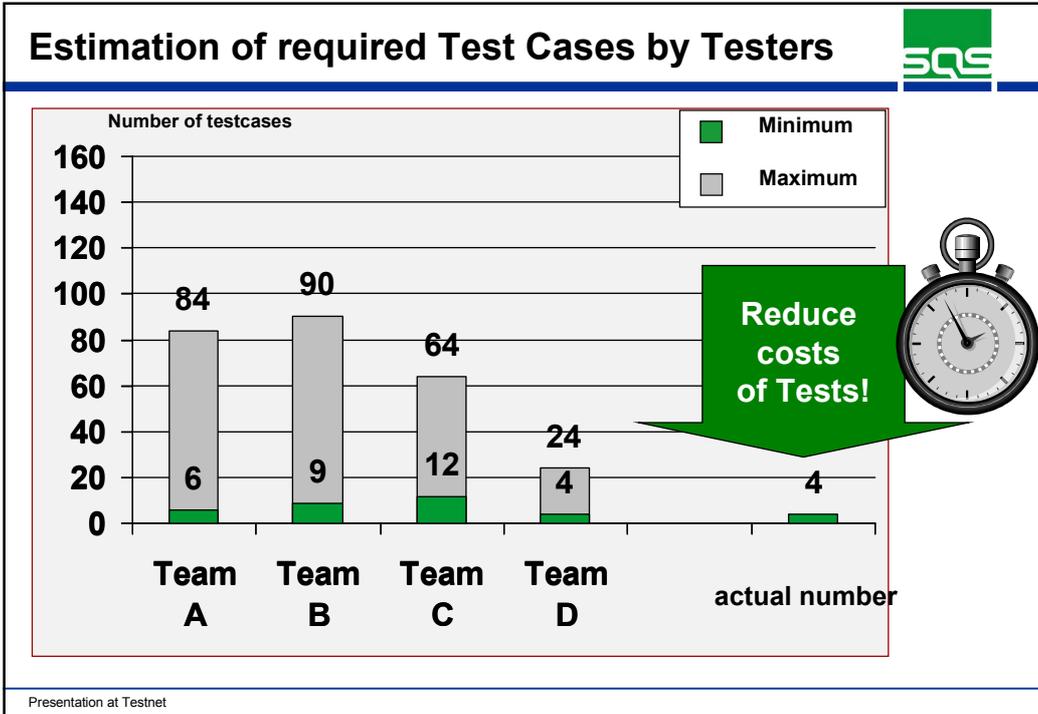
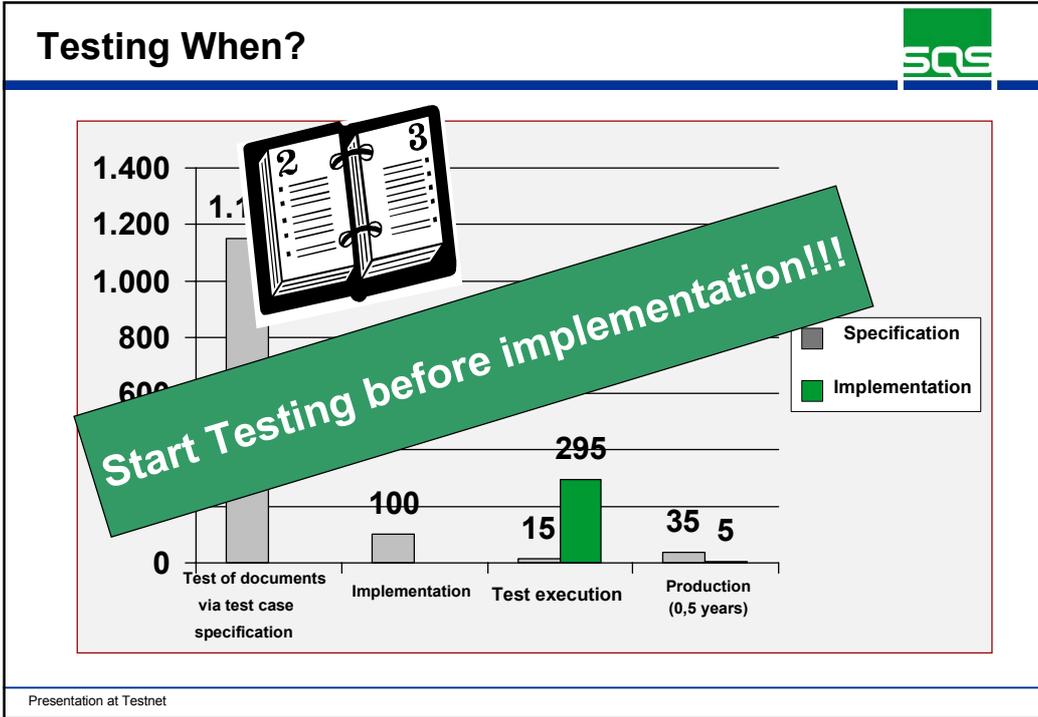
Milestone: Delivery

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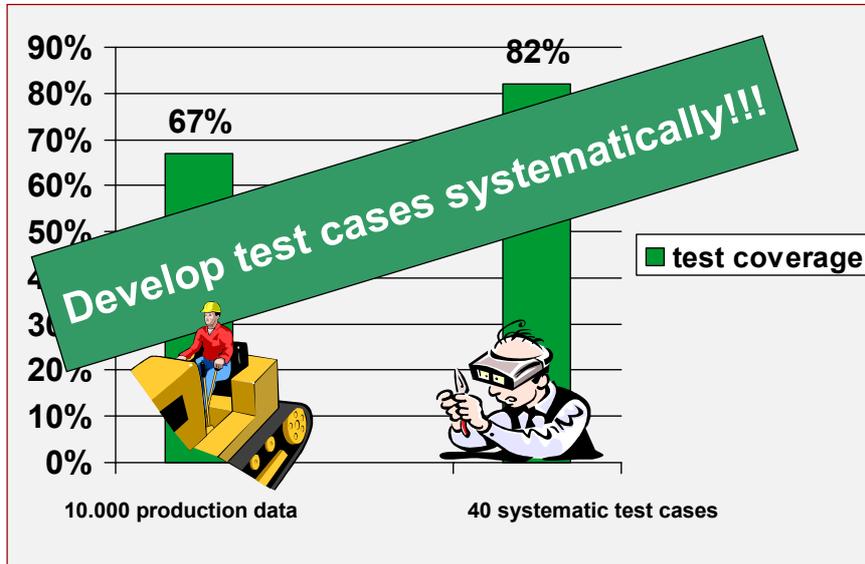
Focus today

- Test preparation: When?
- Test preparation : How?
- Management Dash Board: How?

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Migration of Customer Data within a Bank



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In the following we will sketch



■ Test Level Functional Testing

Task test preparation

- The challenge is to identify / specify the necessary test cases for a single user function



- Systematic test case specification

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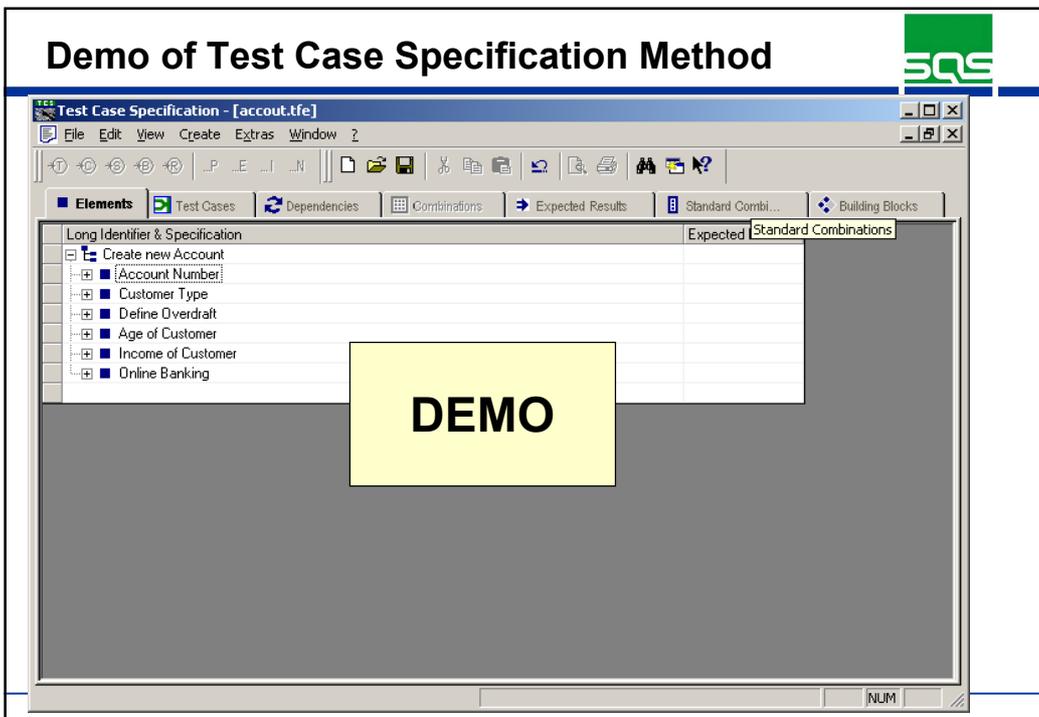
Initial list of requirements



- An Account with overdraft can be created for existing clients.
- Companies can be clients, too.
- The maximum overdraft is defined by the clerk.
- Children do not get an overdraft.
- Clients should have a minimal income in order to get an overdraft.
- The account can be accessed via internet on demand.

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Demo of Test Case Specification Method

The screenshot shows a software application window titled "Test Case Specification - [accout.tfe]". The interface includes a menu bar (File, Edit, View, Create, Extras, Window, ?), a toolbar with various icons, and a main workspace. The workspace is divided into several panes:

- Elements:** A tree view showing a hierarchy of test case elements:
 - Long Identifier & Specification
 - Create new Account
 - Account Number
 - Customer Type
 - Define Overdraft
 - Age of Customer
 - Income of Customer
 - Online Banking
- Expected Results:** A table with columns for "Expected" and "Standard Combinations".

A large yellow box with the text "DEMO" is overlaid on the main workspace area.

How to derive test cases from requirements



■ Scalable approach

- One test case per requirement
- Boundary values for inputs
- Boundary values plus average values for inputs
- Combinations for dependent inputs
- Systematic combinations for dependent inputs
- Full combinatorics for dependent inputs (generally too expensive)
- Boundary values, average values and systematic combinatorics for dependent values

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More precise requirements



After test case specification we have more precise requirements:

- **An Account with overdraft can be created for existing clients.**
- **Companies can be clients, too. (Age is not important here)**
- **The maximum overdraft is defined by the clerk.
(Overdraft is at maximum one income)**
- **Children do not get an overdraft. (Child is person < 18 years)**
- **Clients should have a minimal income in order to get an overdraft credit. (Minimal income is 1.000€)**
- **The account can be accessed via internet on demand.**

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Summary part 1: Requirements and Test



- To have requirements documented is a good idea!
- QA on requirements is a must!
 - Reviews is a very cheap way to do it!
 - Building test cases from the requirements is a very efficient way to do it!
 - Costs are reasonable, Cost benefit ratio is ex
 - Will lead to 98% functional coverage!
 - In any case: let testers do the QA for the requirements!
- If you do not have documented requirements ...
 - what the h... are the developers developing???
 - perhaps test case analysis can help the project!

START EARLY and CUT the COSTS!!!

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5th ICS TEST
INTERNATIONAL CONFERENCE
ON SOFTWARE TESTING

Dusseldorf
April 21-23, 2004



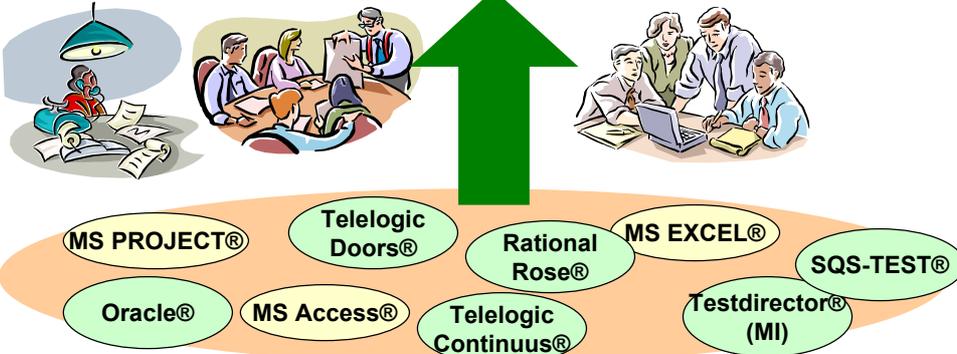
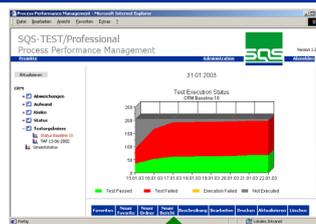
SQS Software Quality Systems



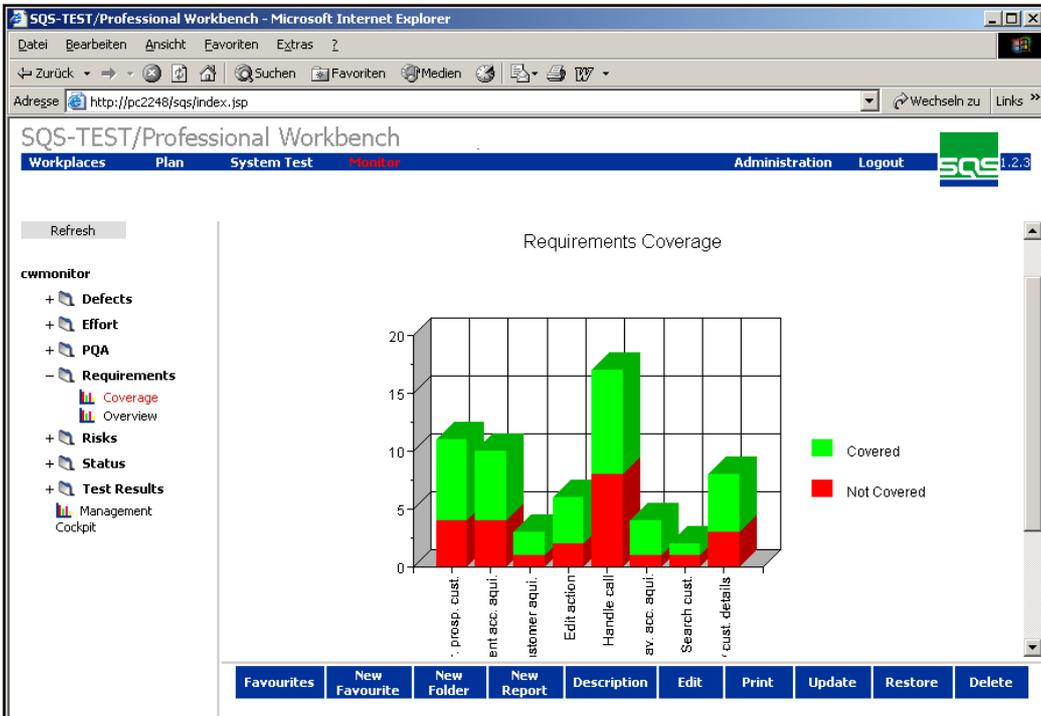
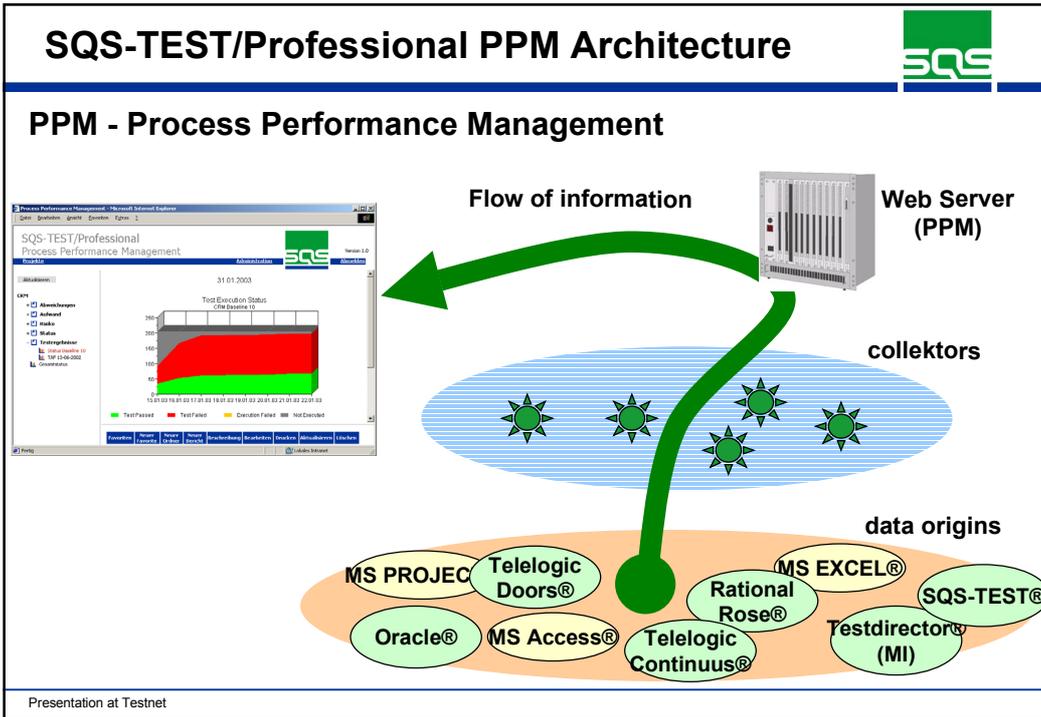
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PART 2: The Management View on Requirements and Test

The Management Dashboard



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Collectors and Chart types available today



■ Collectors

- Mercury Testdirector
- Microsoft Office (Access, Excel, Project)
- Oracle
- ODBC
- SAP
- SQS-TEST/Professional (TOP, BIT, TCS, TPA)
- (further collectors on request)

■ Chart types

- Bar charts
- Pie charts
- Column charts
- Line charts
- (further types on request)

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Technical Requirements



■ Server:

- a windows platform is recommended
 - many metrics are collected in Microsoft Office based tools
 - many test tools have comfortable interfaces on windows platforms
 - ppm can also be implemented on a unix platform

■ Client:

- Internet Explorer 6, Internet Explorer 5.5
- not supported: Internet Explorer 4.0/5.0, Netscape 5.7, Opera, ...

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Summary



- Test preparation: When?



- Test preparation : How?



- Management Dash Board: How?



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