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HIGH-TECH TRANSACTIONAL SERVICES

Belgian IT Club

How do you know when to Stop Testing

S. Freres

Atos Worldline – Test Competence Center

Agenda

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Part I

Test Competence Center

Mission Statement

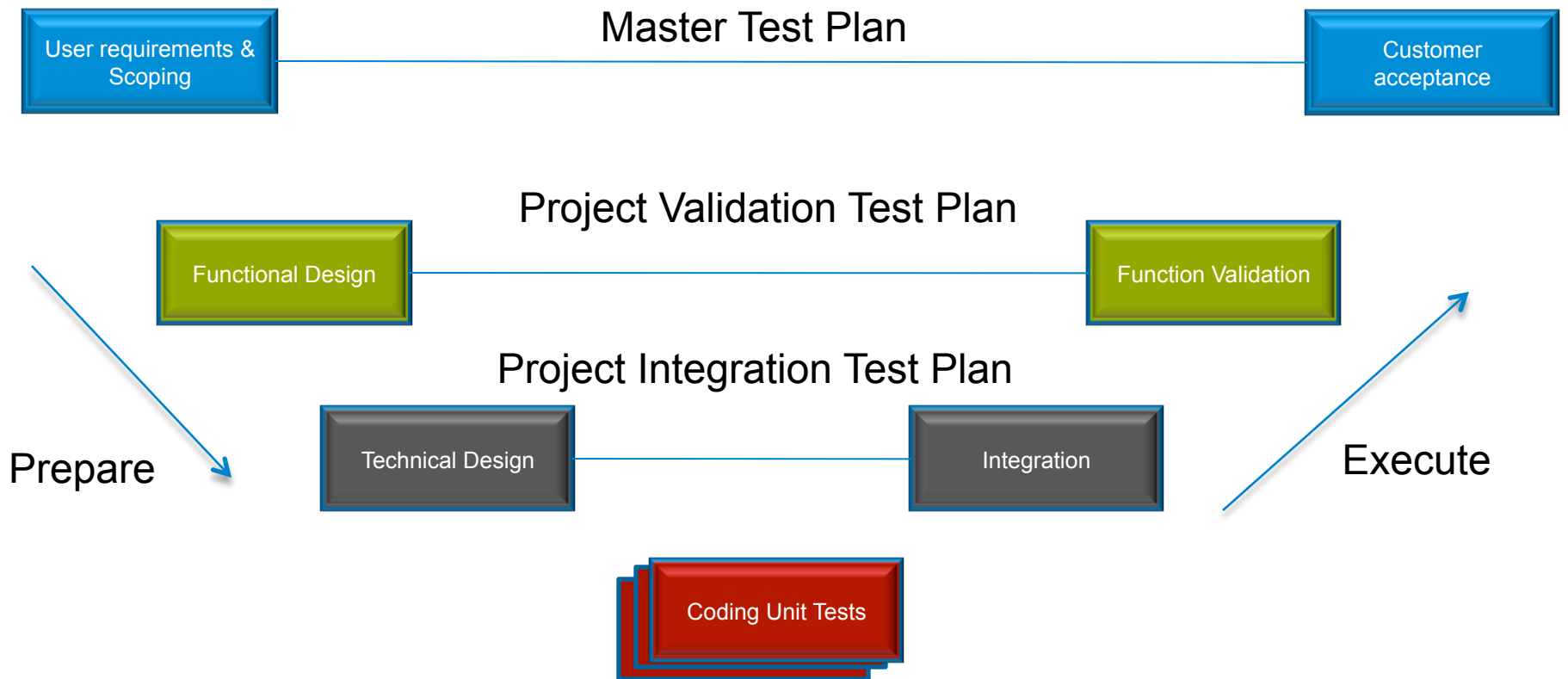
The Test Competence Center (TCC) is continuously striving to excel in the field of Testing, Test-methodology and Coaching/Recruitment of Testing-resources.



History - Timeline

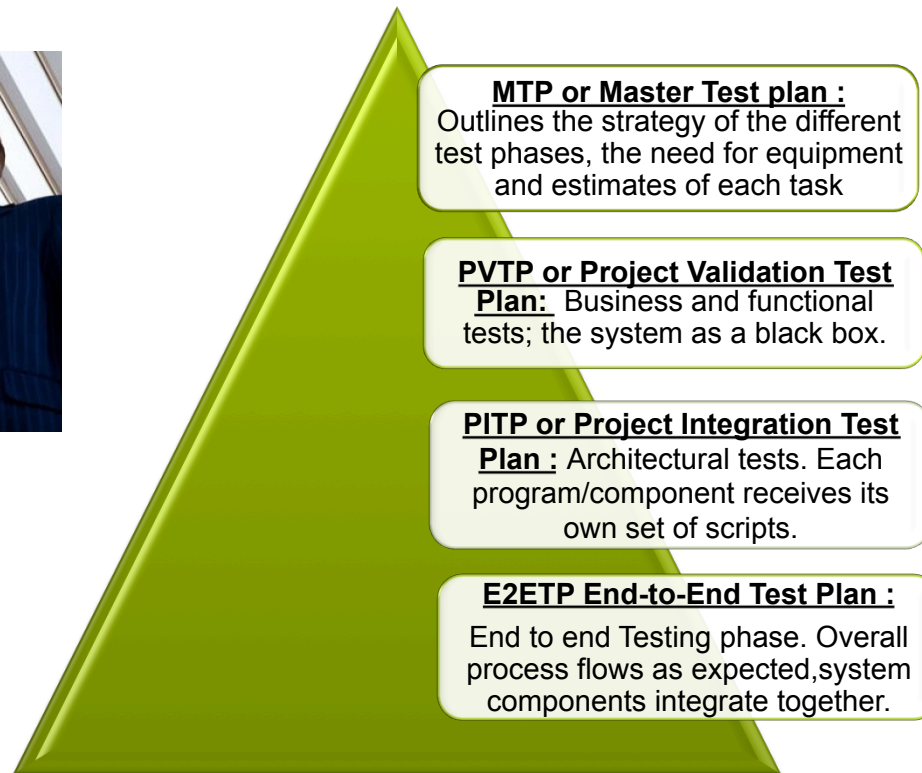


Test Methodology (1)



Test Methodology (2)

» TCC's Test Methodology is based upon 4 deliverables



Various Test Techniques

Risk based Testing	Exploratory Testing	Agile Testing	Automated Testing	Performance Testing
<ul style="list-style-type: none">• Risk assessment• Impact analysis	<ul style="list-style-type: none">• Simultaneous learning, design and execution of tests.	<ul style="list-style-type: none">• Short iterations• Continuous integration	<ul style="list-style-type: none">• Event driven testing (EDT)• Data driven testing (DDT)	<ul style="list-style-type: none">• Stress tests• Robustness• Availability



Tools & Automation



Defect Tracking and Test Management

(HP Quality Center)



Automated Test Tools

(Winrunner, Quicktest-pro, soapui, file-aid,...)



Simulator mgt (partnership with Integri)

- Emulate Terminals
- Emulate Cards
- Emulate Hosts



Roles and Responsibilities

Business Tester (BT)

- ✓ Business Expert
- ✓ Risk assessment
- ✓ Test strategies
- ✓ Skills requirements analysis
- ✓ Focus on Quality

Application Tester (AT)

- ✓ Application Expert
- ✓ Time Estimations
- ✓ Test scripting
- ✓ Test execution
- ✓ Automation
- ✓ Focus on Technical details

Test Delivery Manager (TDM)

- ✓ Filtering Demands
- ✓ Binding offers
- ✓ Bulk offers
- ✓ Operational Staffing & follow-up
- ✓ Reporting towards customer

Resource Manager (RM)

- ✓ Strategic & tactical sourcing
- ✓ Profile & competence mgmt
- ✓ Offshoring relation manager
- ✓ Staffing – Planning & Allocation

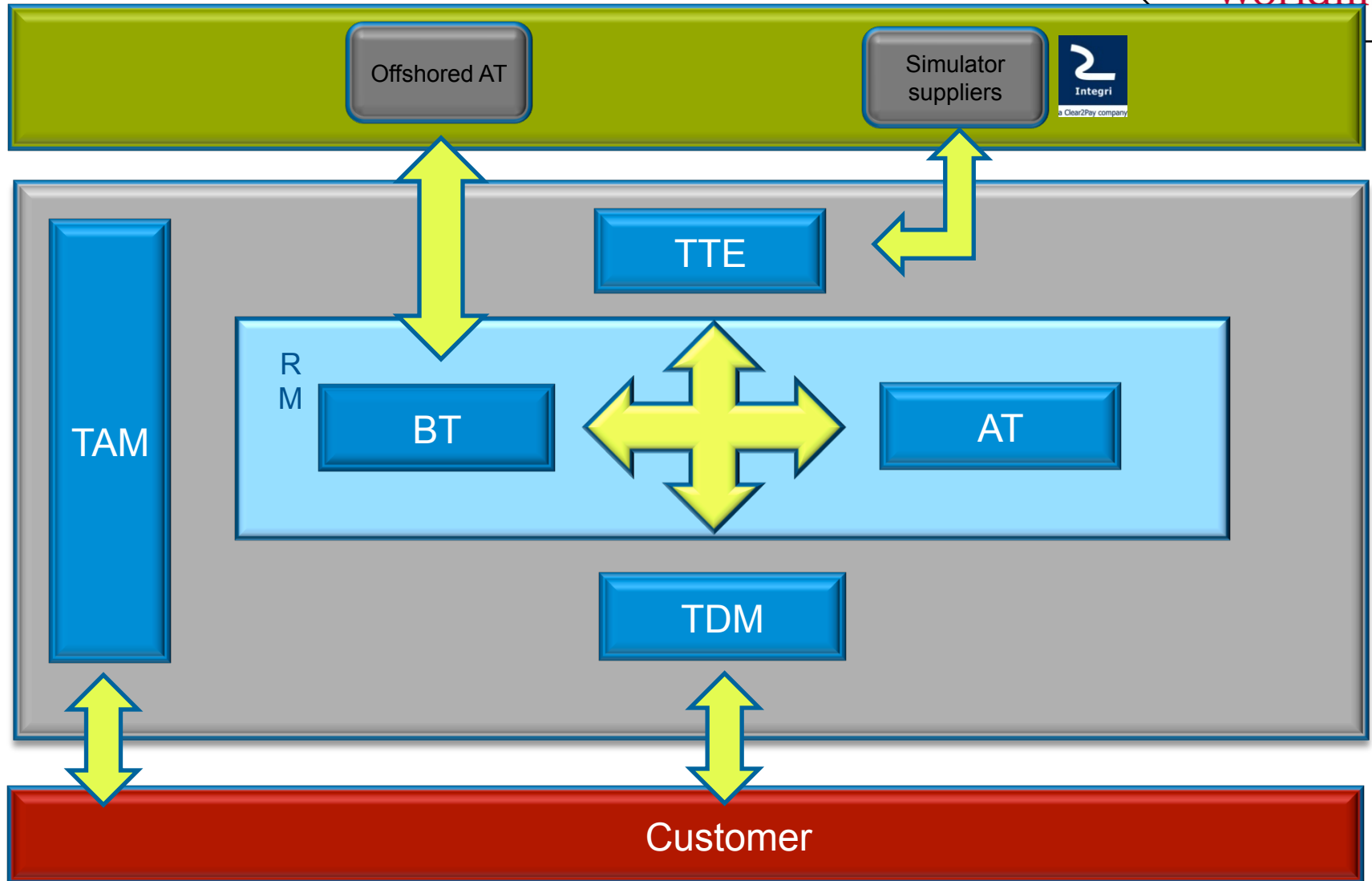
Test Tool Engineer (TTE)

- ✓ Support in tools & automation
- ✓ Expert in methodology
- ✓ Quality manager within TCC
- ✓ Vendor and supplier mgmt

Test Account Manager (TAM)

- ✓ New business opportunities
- ✓ Customer relation management
- ✓ Business models and strategies
- ✓ Benchmarking & Market watch

Operating Model



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Part II

When to stop testing – open discussion

When to stop testing – typical cases

- » Deadlines, e.g. release deadlines, testing deadlines
- » Critical or key test cases passed (less important test cases, even if they fail, may not be show stoppers)
- » Test budget has been depleted or testing cost does not justify the project cost
- » Coverage of code, functionality, or requirements reaches a specified point
- » Bug rate falls below a certain level (and high priority bugs are solved)

Test Priority

- » Represents the (business) importance of the test. This priority is defined by the Application Tester and reviewed by the Business Tester.
- » 3 possible values:
 - High
 - Medium
 - Low
- » Usage:
 - When the test plan is presented to the customer, the tests are ordered by priority. The customer might decide to suppress some test cases.
 - The reporting (test execution progress) towards the client is structured by priority
 - The tests with a “High” priority are the first one to be executed
 - Only the tests with priority “High” are executed during the non-regression test phase.
 - A review of the test priority is done after each non-regression testing phase depending on the execution status

Future improvements : open discussion (1)

- » When to stop testing depends mostly on the risk
- » Not only business importance is required. The failure probability (or likelihood) is missing!
- » Factors that can influence the failure probability:
 - Complexity
 - New development (level of re-uses)
 - Interrelationships (# interfaces)
 - Size
 - Technology
 - Inexperience (of development team)

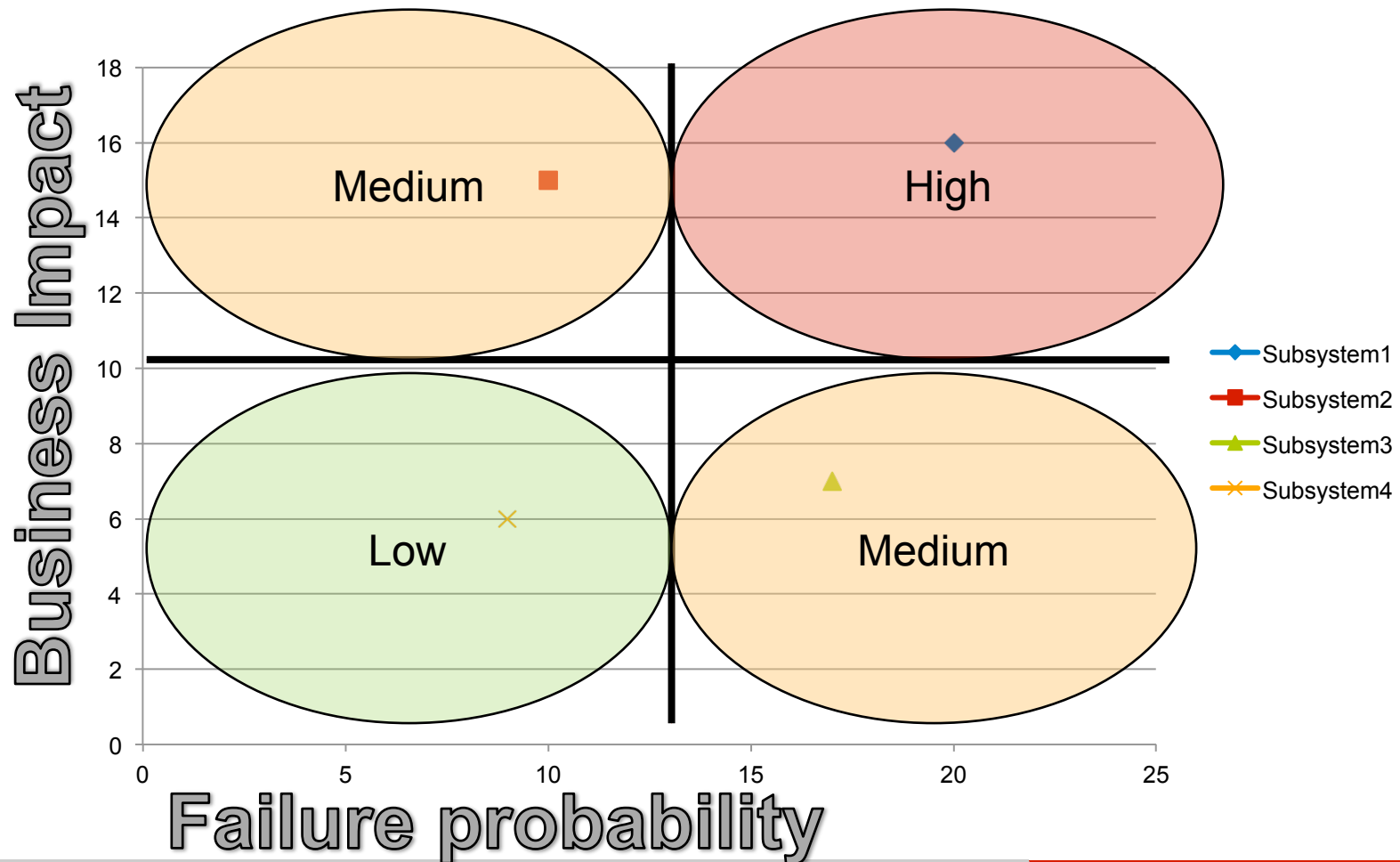
Future improvements : open discussion (2)

» First step: define business impact and failure probability per subsystem

	Failure Probability						Business impact				
	Complexity	New dev	Size	Technology	Experience level		Business imp	Financial Dmg	External visibility	Usage intensity	
Subsystem1	5	5	2	5	3	20	3	3	5	5	16
Subsystem2	2	3	1	1	3	10	3	4	3	5	15
Subsystem3	4	3	2	3	5	17	1	3	2	1	7
Subsystem4	2	1	3	2	1	9	1	2	2	1	6

Future improvements : open discussion (3)

» Second step: display result and categorize systems



Future improvements : open discussion (4)

- » Risk based testing = risk based reporting
- » Test effort depends on risk:
 - High: 90% of tests are executed
 - Medium: 70% of tests are executed
 - Low: 30% of tests are executed
- » Other possibilities:
 - Group the defects by subsystem
 - Trigger for attention points
 - Reassessment of the risk
 - Apply specific test techniques depending on risk (Equivalence, decision tables, exploratory testing, ...)

Questions

