

Test Organization Options *Structures, Skills, Lifecycles, and More*



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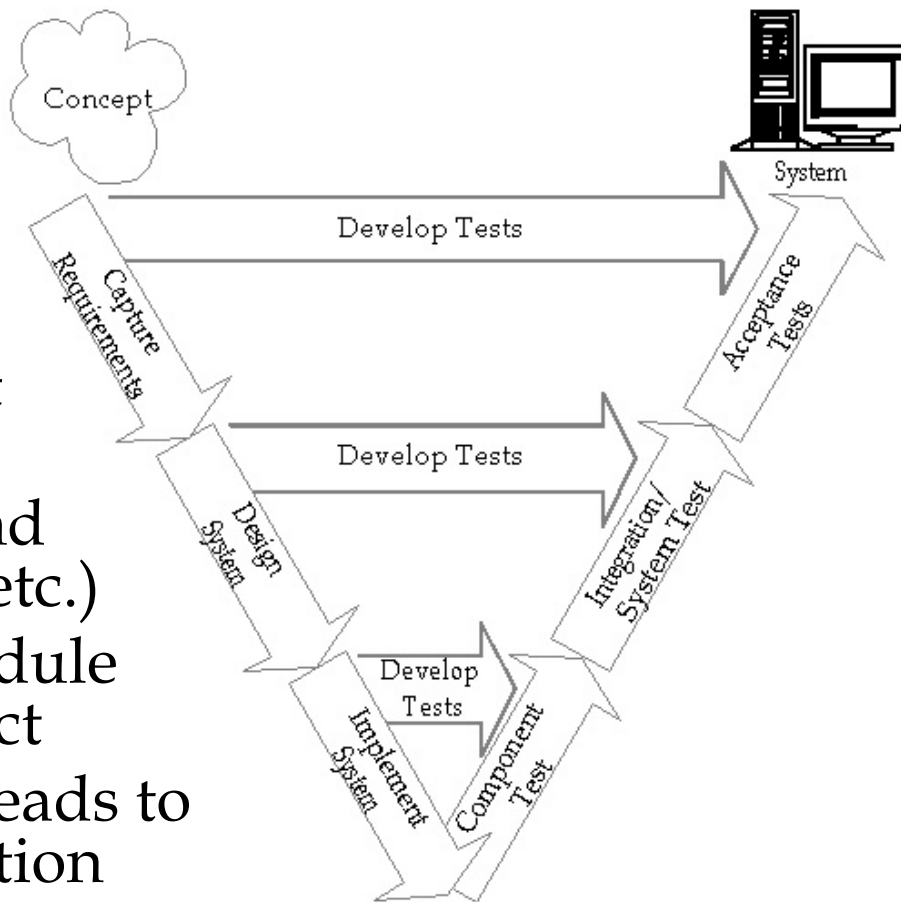
Test Organization Options

- Challenges and options
 - ❏ How do lifecycle options affect test teams?
 - ❏ What skills do we need for our test team?
 - ❏ How to use people outside the testing team?
 - ❏ Should we specialize the test team?
 - ❏ How can we use testing centers of excellence?
 - ❏ Can we successfully outsource to testing service providers?
- Let's see if we can find some answers...



“V” or Sequential Lifecycle

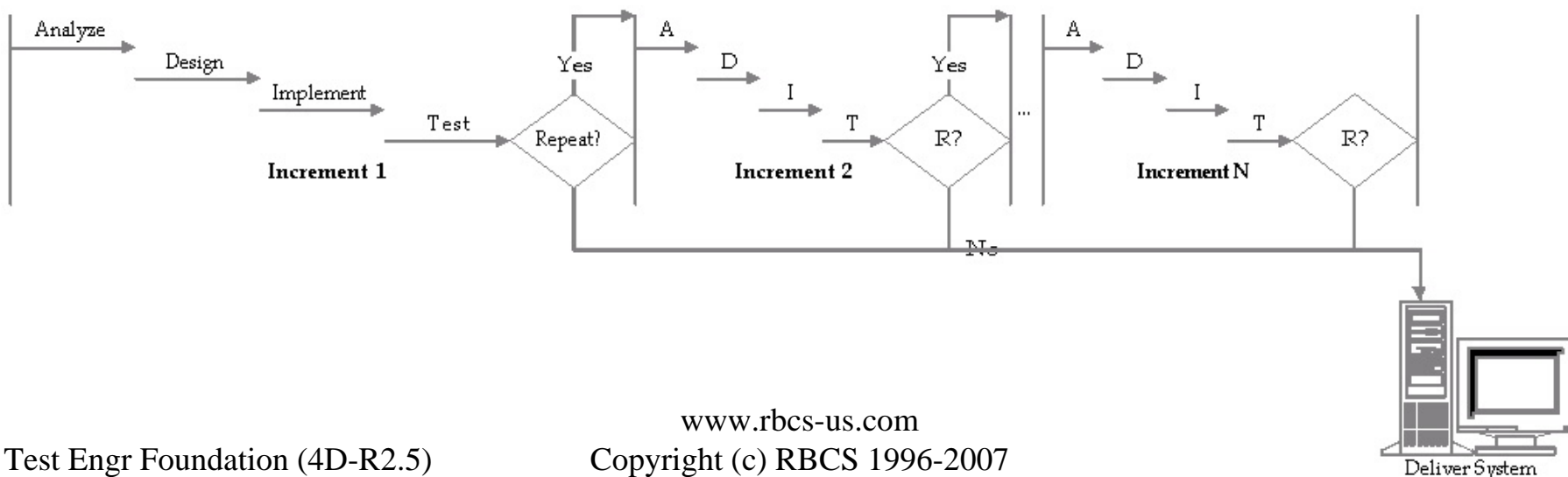
- Do ever-deeper levels of design, then build, then test
- Organizational challenges include:
 - ❑ Late engagement of test team
 - ❑ Inadequate early QA and test (reviews, unit test, etc.)
 - ❑ Long hours due to schedule slips earlier in the project
 - ❑ Large number of bugs leads to chaos during test execution





Incremental or Iterative Models

- Build the system in increments
- Organizational challenges include:
 - Increased need for regression testing
 - Overlap of increments double-books people
 - Long hours due to over-commitment
 - Late involvement of test team





Agile Models

- Faster form of iterative; lightweight, informal
- Organizational challenges include:
 - Testers stuck in “sprint silos” with no cross-functional view
 - Long hours due to over-commitment
 - Late involvement of test team
 - Limited time to invest in long-term test process improvements
 - Lack of perception of testing as a specialized role



System Integration

- Assembling components, some of which might be built by outside teams
- Organizational challenges include:
 - Lack of visibility into testing of components
 - Political issues due to test team discovery of problems in components
 - Long hours due to over-commitment
 - Late involvement of test team
 - Large number of bugs leads to chaos during test execution



Skills for a Test Team

- Regardless of lifecycle, any test team must have the proper skills
- Four general considerations
 - General professionalism
 - Technology
 - Business/application domain
 - Testing
- Skills should be assessed and managed
- This applies to in-house and outsourced teams



Skills Management

- Assess the test team to identify strengths and weaknesses
- To fill weaknesses, there are various options:
 - Grow the skills of existing people
 - Add new people who bring new skills
 - Identify testing service providers who can fill the gaps
- The last option is best for transient or highly specialized skill needs
- Select outsource vendors based on skills, not just price per hour



Evolving Skills Triangles

- Current trends often expand the base of the skills triangle, but not its height
- Measure the skills **objectively**, not subjectively
 - Measure skills relative to the profession, not peers
 - Understand the effect of regional variations
- Have a long term plan for skills management





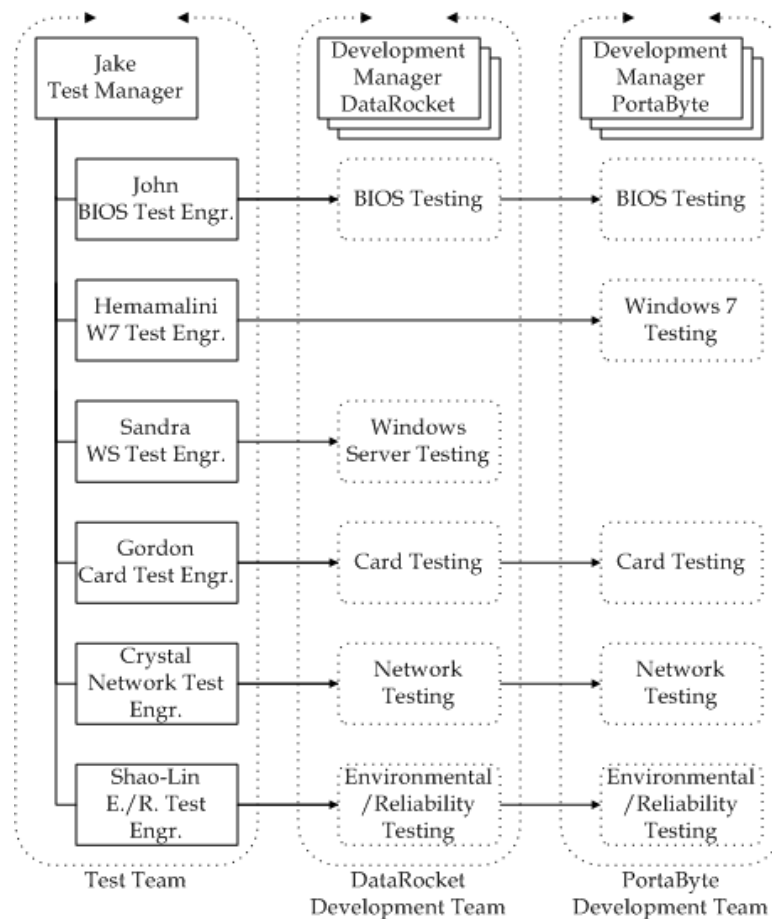
Non-Testers, Testing

- On many projects, non-testers participate in testing
- These can be project managers, quality managers, programmers, business and domain experts, or infrastructure or IT operators
- Such testers may possess strong skills in some areas (business domain or technology), but weak skills in others
- Such testers typically have limited skills or experience with testing



Specialized Teams

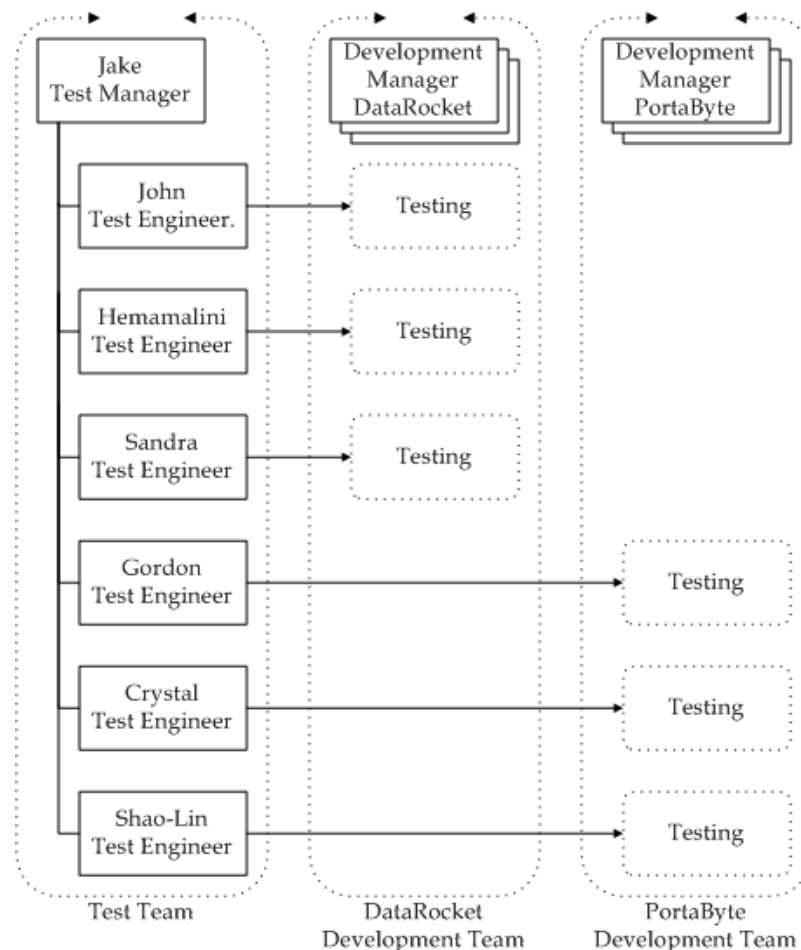
- Each tester has his own specialty
- Assigned to projects based on need
- May be on more than one project
- Provides maximum flexibility, deep expertise to test team
- Not always popular with other managers





Generalist Teams

- Each engineer assigned to a specific project
- Testers stay on the project until their role is complete
- Helps testers focus on one task at a time
- Testers can sometimes “go native” and identify more with development team than test team





Testing Centers of Excellence

- Dedicated facilities focused on testing
- Can be focused on particular skills
 - Test type (e.g., usability, performance)
 - Technology (e.g., Windows, Unix)
 - Application (e.g., by organization apps)
- Environments and tools – along with the expertise to use them – are often required
- Testing centers of excellence should live up to the name



Case Study: CA's TCOEs

- **Hyderabad, India**
 - Mature and fully operational in ITC
 - 45% of CA's test resources
 - Test execution for certain products
- **Beijing, China**
 - CTC has skills in network technologies, C, C++, Java, Windows and UNIX
 - Test execution for a few products
- **Prague, Czech Republic**
 - Mainframe focus and expertise
 - Automation expertise



Outsource Testing Service Providers

- Reasons for choosing outsource testing service providers
 - Leverage their skills
 - Leverage their infrastructure
 - Insulate politically delicate tests
 - Handle peak workloads
 - Put testers near (outsource) developers
 - Reduce cost
- Reasons should be well-understood before the provider is selected, and skills must be ensured



Success in Outsourced Testing

- Essential elements
 - Select the right testing service provider
 - Divide the testing work to be done
 - Plan and execute the logistics
 - Map, integrate, and standardize
 - Manage outsource-related project risks
 - Build effective working relationships
 - Maintain focus through the project
- Success in all of these elements is necessary



Conclusions

- Lifecycle choices can create organizational challenges
- The test team needs the right skills, properly managed
- Skills availabilities differ by regions
- Specialization or generalization
- Careful use of non-testers
- Testing centers of excellence provide more options
- Testing services providers provide even more options
- Consider all of your options when organizing your testing



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