Challenges related to Test Management

High Impact Global Product Engineering Solutions

Ideal Test management process

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<th>Requirement &amp; Strategy</th>
<th>Test Planning</th>
<th>Test Design</th>
<th>Test Automation</th>
<th>Test Execution</th>
<th>Process Analysis</th>
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<td>Test sufficiency</td>
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Test sufficiency – Strategy and planning

BM: Nothing short of **Zero defect please** .... Test it thoroughly to ensure zero defect
QM: Impractical, utopian
BM: Ok, can it at least be as close to Zero as possible?
QM: How close do we want it to be? There is a cost to making it close to zero. There is no free lunch you see..
BM: Ok .. Ok .. can I fix field defects at low-cost-to-fix, least discomfort to customer and can afford the warranty costs?
QM: Here is my plan (something like the process in the previous slide)
BM: **Looks great** … go ahead
QM: Great .. And here is my budget and time plan
BM: **Cut your budget by half ... Not in business plan; BTW make in half the time**
QM: I will need to compromise on the quality of people; the licenses and the lab set up and that will affect the deliverables
BM: **I am not sure if you are being realistic** . What about the open source tools and the brilliant people we have? can we train and motivate them to a higher job? I know you are innovative and let us do a good job. Bye ..
QM: **Aye Aye Sir !!! ( Hain sadoo ver ?.)**

A few weeks later – Progress Review

BM: How is the delivery? Are we on schedule and how is the quality?
QM: We might slip on the delivery; Testing is only half way through and we are unearthing very obvious defects which should not have been in the first place
BM: Never mind that; your job is to test, How long will it take? Can we release it this month end?
QM: We may require two more rounds of unit and integration and may be at least one round of regression though I would have preferred two .. All these may take at least 4-6 weeks more.
BM: We cant hold the customer that long. Why don't we skip the regression and concentrate on P1 defects; we can later have a full cycle in parallel – post release
QM: I am not comfortable with your decision; but then we need to be practical;
I will ensure that we have

- Zero P1 (priority1 defects – show stoppers);
- Not more than a dozen P2 (functional defects);
- We will leave P3 (cosmetic) for later;

Conclusion: We will achieve our goal of having **Zero defects (but applied for P1 only)**
A few more weeks later ... post delivery

**BM:** How was the delivery? Any customer complaints?

**QM:** No complaints; only some observations feedback and 80 defects. But then we have not significantly slipped on the “delivered defects” and “defect density”.

**BM:** What is the nature of defects did we get back to fix?

**QM:** Zero P1, 20 P2 and some 60 others.

**BM:** That is not bad; that is really cool...

**QM:** Not exactly; We had a tough time convincing the customer on the categorization; many of the defects that got reported where actually not defects but change requests and a good number of them where neither P1 nor P2.

**BM:** We must target Zero defects at least for the next release

**QM:** Aye Aye Sir !!!

**Conclusion:** The customer is in the game too but is happy that we are not slipping.

And then the business story of testing goes on and grows on ....

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**Typical Drivers in Test management**

- Test strategy and planning is strongly influenced by
  - availability to user / time to market
  - budgets / costs

Not on zero defect goal; strangely though

Significant warranty cost can be the only driver for moving towards Zero defects

- Test execution is strongly influenced by
  - Expediency
  - The best foot forward approach
  - Attitude to “manage” customer satisfaction

Not always on commitment to declared quality

Self esteem and pride can be the only drivers for execution excellence
### Some Operational Challenges in testing

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<tr>
<th>Challenges</th>
<th>Root Causes</th>
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<tr>
<td>Changing and creeping Requirements until the system testing phase</td>
<td>Inadequate project management; Focus being on costs, time and customer satisfaction than on Quality</td>
</tr>
<tr>
<td>Delivering within budgets</td>
<td>Universal and reliable estimation models for testing yet to emerge</td>
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<tr>
<td>Right staffing the work with befitting skill set and experience</td>
<td>Compromises on job-employee KSA match; particularly on the domain side</td>
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<tr>
<td>Inadequate Test coverage and inability to assess the coverage</td>
<td>Under estimating the knowledge need on domain, application and architecture; black box and internal</td>
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<td>Achieving a higher degree of automation</td>
<td>Due to continuous change in technology as well as lack of strategy in automation, results in less % of automation yield. Also, third party software integration causes more issues in automation</td>
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<tr>
<td>Ensuring that full scale regression is done</td>
<td>Keeping the regression suite updated and realizing the importance</td>
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### Challenges related to people management

- **Scale of operations**
  - Building expertise while maintaining the growth
- **Market influence**
  - Demand vs Supply of experts
- **Career management**
  - Technical and managerial growth opportunity
  - Enabling people to see a career in testing
  - Clarity in roles, responsibilities, skill sets and experience
Challenges related to technology (eg. SOA/WS testing)

- Scope of end-to-end system testing is difficult since most of the SOA/WS applications are composite in nature
- Test infrastructure planning is difficult since it is distributed and many interdependencies have to be considered
- Finding the root causes of problems across the middle tiers of SOA applications is difficult
- Functional testers have more business skills, but not the technical skills to deal with the Web services environment.
- The architecture is enterprise in scope encompassing dispersed and heterogeneous systems
- The infrastructure is distributed requiring high availability and scalability

Infrastructure related challenges

- Managing and releasing multiple product releases simultaneously
- Infrastructure to support different types of testing
- Optimizing the hardware, software and people resources
- Maintain the environment w.r.t latest patches, upgrading hardware, etc.
- Environment close to customer deployments to reproduce the problems
- Test infrastructure to support compliance, standards and custom requirements
Thank you!

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