QUALITY IS JOB ONE!
(WAIT-CAN WE SAY THAT?)

Nathan Bonner
OST
OST Overview

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What guides our behavior?

SIMPLE.

honor our people and their families first, clients second, and the rest will fall into place.

delight our clients.

serve with humility.

embrace entrepreneurship and innovation.

learn through curiosity and empathy.
Who am I?

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Background in ERP with an emphasis on manufacturing operations and accounting/finance
Industry experience in office furniture, automotive, medical device, distribution and financial services
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OST Configuration Services
Quality Assurance in our Project Model

“If it’s worth building, it’s worth testing. If it’s not worth testing, why are you wasting your time working on it?” – agiledata.org

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What is Quality in Software Development?

1. The degree to which the software meets the requirements of the customer
2. The reliability of the software

“The more effort I put into testing the product conceptually at the start of the process, the less effort I had to put into manually testing the product at the end because less bugs would emerge as a result.” — Trish Khoo
How is Quality Achieved?

Quality by Design (QbD) in Software Development

1. Establish design targets and goals
2. Define the customer
3. Discover customer needs
4. Define the features that will meet the needs
5. Plan the processes to produce the features
6. Develop measurement standards and controls to test and confirm the features

“Quality is never an accident. It is always the result of intelligent effort.” — John Ruskin
Why do software projects sometimes fail to meet expectations? Isn’t it just bad programmers?

1. Design complexity
2. Requirements understanding
3. Programmer capability

*Software Estimation* – Steve McConnell (Microsoft Press, 2006)

“A good plan can help with risk analyses but it will never guarantee the smooth running of the project.” — Bently and Borman
How do we reduce design complexity?

From Waterfall to Agile
- Small projects are easier than large projects

From Agile to Practical Agile (Linear)
- Not every project can be a “small” project

“The art of simplicity is a puzzle of complexity.” — Douglas Horton
How do we improve requirements understanding? Isn’t that what Agile iterations are supposed to do?

Poorly defined projects are underscoped, understaffed and undermanaged. They run longer than expected and take more budget than expected. Taking the time to define requirements is critical even though it can sometimes feel like this...

“Peace cannot be kept by force; it can only be achieved by understanding.” — Albert Einstein
How do we improve requirements understanding? (CET Designer Extension specific)

Define the product (please don’t just throw me the spec book)
Define the process
Define “typicals” or Business Scenarios
Define the detailed process steps (inputs, variables, expected results, etc.)
Define data sources
Define output requirements
From all of the above define acceptance criteria and test scripts
Defining the Product

The spec book and price guide are great but take the time to educate team members in the same way you’d educate your sales team. Product knowledge is critical but team members also need to understand process and rules...
"If you can’t describe what you are doing as a process, you don’t know what you’re doing." — W. Edwards Deming
Defining “Typicals” or Business Scenarios

What are the most common (or expected) configurations for the product?

Well defined “typicals” provide a target for development and testing.

“Customers don’t measure you on how hard you tried. They measure you on what you deliver.” — Steve Jobs
Defining “Typicals” or Business Scenarios

How are these configurations defined and what is the expected output?

“How are these configurations defined and what is the expected output?” — Joe Strummer
Defining “Typicals” or Business Scenarios

What are the expected behaviors, limitations and requirements?

“The only limitations you will ever have are the ones you put on yourself.” — Kristinna Habashy
Defining detailed process steps

<table>
<thead>
<tr>
<th>#</th>
<th>Process Description</th>
<th>Key Points</th>
<th>Visual Aids</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0.03</td>
<td>1) Navigate to the Publish tab</td>
<td>Note the location selected as you will need to refer to it in an upcoming step</td>
<td>![Visual Aid 1]  ![Visual Aid 2]  ![Visual Aid 3]</td>
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<tr>
<td></td>
<td>2) Click the List available Portfolios button</td>
<td>Note that it is recommended that old local copies of the DB3 file be deleted prior to downloading the current version</td>
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<tr>
<td></td>
<td>3) Select the desired portfolio from the Select Portfolio dropdown menu</td>
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<td>4) In the Server Files pane check the db3 checkbox</td>
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<td>![Visual Aid 10]  ![Visual Aid 11]  ![Visual Aid 12]</td>
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<td>5) Click the ... button to the right of the Download To field</td>
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<td>![Visual Aid 13]  ![Visual Aid 14]  ![Visual Aid 15]</td>
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<td>6) From the Browse For Folder dialog box search for and select the target folder (or use the Make New Folder button to create a new location) and click OK</td>
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<td></td>
<td>7) Click the Download selected file(s) button</td>
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<td>![Visual Aid 19]  ![Visual Aid 20]  ![Visual Aid 21]</td>
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</tbody>
</table>

“...The difference between something good and something great is the attention to detail.” — Charles R. Swindoll
Defining acceptance criteria and test scripts

<table>
<thead>
<tr>
<th>Process Step</th>
<th>Description</th>
<th>Expected Results</th>
<th>Observed Results</th>
<th>Pass/Fail</th>
<th>Tester</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>5.03.1</td>
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<td>5.03.2</td>
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<td>5.03.3</td>
<td>Select the desired portfolio from the Select Portfolio dropdown menu</td>
<td>Description and other related fields should populate</td>
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<tr>
<td>5.03.4</td>
<td>In the Server Files pane check the db3 checkbox</td>
<td>Checkbox should appear as checked</td>
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<td>5.03.5</td>
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<td>Browse For Folder dialog box should appear</td>
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<tr>
<td>5.03.6</td>
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<td>Browse For Folder dialog box should close and the Download To field should be populated with the selected path</td>
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<td>5.03.7</td>
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<tr>
<td>5.04.1</td>
<td>Select Open...</td>
<td>Open file dialog box should appear</td>
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<td>From the Open dialog box navigate to the db3 file downloaded in the previous section and click Open</td>
<td>The Open file dialog box should close and the selected DB3 file should open and</td>
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</tbody>
</table>

“It is not enough to do your best; you must know what to do, and then do your best.” — W. Edwards Deming
Using acceptance criteria and test scripts helps ensure:
• Understanding of functional context for feature development
• Completeness of testing
• Consistency of testing (between developers and testers, from tester to tester and time over time)
• Documentation that testing occurred
• Timeline of new features and bugs (e.g. “when did that break?”)
When should acceptance criteria and test scripts be used?

- Sprint Planning
- Feature or Ticket Level Testing
- Regression Testing
- Smoke Testing
- Automated Testing
- Beta Testing
- Release Candidate Testing
- Go/No-Go
- Retrospective/Milestone Review
- Conference Room Pilots/Business Simulations
- End user training

"Without data you're just another person with an opinion." — W. Edwards Deming
Where does QA belong in the Software Development Cycle?

- Written tests for each Story before the first Sprint begins (facilitates Test Driven Development)
- Development accountable to QA
- QA accountable to Product Owner
- QA as part of the development team (not its own team)

“Quality is everyone’s responsibility.” — W. Edwards Deming
How close is testing to development?

“Quality is pride of workmanship.” — W. Edwards Deming
What is the value of a Test Sprint?

“The emphasis should be on why we do a job.” — W. Edwards Deming
Developers and Testers should:
• Think like users
• Be impatient
• Follow test scripts
• Go beyond test scripts
• Push to find the limits of the code

“Learning is not compulsory... neither is survival.” — W. Edwards Deming
Questions
Thank you!