

# What's next for traditional Functional QA Managers?

Author: Jim Trentadue

Email Address: [Jim.Trentadue@outlook.com](mailto:Jim.Trentadue@outlook.com)

## **Abstract**

With the rapid implementation of Agile development in most IT environments, the traditional roles of functional QA managers are changing. Testing is now the responsibility of the product owner; day-to-day testing tasks and accountabilities are largely owned by the product team and defect status is discussed on a quick daily meeting. But yet all of the testing personnel report into the QA Manager from an organizational viewpoint. What are the new responsibilities of the QA Manager if they are not responsible for any of the above?

There are avenues for the traditional, functional QA manager and they involve owning the quality, the release management principles, the technical solutions, a smaller testing operational team and advancement of new testing areas within the Agile lifecycle.

This is different from how QA Managers have functioned before, but it is a transformation of their career putting them right in the middle, and even ahead of the curve in some cases, as opposed to being left behind.

## **Biography**

Jim Trentadue has more than eighteen years of experience as a leader in the software testing field. Jim has focused on test execution, automation, management, environment management, standards deployment, and test tool implementation. Jim is a regular speaker at software testing events, like STAR, BS/AD, STP and QAI Conferences.

Recently, Jim has worked on the vendor side for test automation solution companies engaging customer and prospects. Currently, Jim has started his own Test Automation Foundations & Principles workshop aimed at helping manual testers get started with automation as well as working as a consultant to restart stalled automation efforts.

# 1 Introduction

For traditional QA Managers, we continue to see the world dramatically change all around us. With the advent of Agile, it's said that the product teams own the quality, not just the QA team as we once knew. This has been a game changer for us. If we think of the traditional roles from Waterfall with Project Managers, Business Analysts, Developers, Quality Assurance and Test Analysts, there were managers that typically supported each one of the functions.

Each team owned their specialty for their project and to their craft. But how has this changed for testing within Agile projects? Consider this transformation, typical in most organizations:

<b>Role</b>	<b>Waterfall Role</b>	<b>Agile Role</b>	<b>Agile Testing role</b>
Project Manager / Project Coordinator	Project Manager, owner of the scope, time & cost for project	Many have converted to Scrum Masters	Contributes to the testing scope definition
Business Analysts / BA Managers	Business Analyst, owner of the requirements definition for project	Many have converted to Scrum Masters or Product Owners; define the epics and stories	Contributes to the testing scope definition
Developers / Development Managers	Development, owner of the development delivery for project	Developers & Dev Managers still own the technologies used; define development activities for project	Contributes to the testing scope definition
Testers / Testing Managers	Testing, owner of the testing and quality assurance definition & delivery for project	Varies, but role is very different. Some managers have gone the way of Scrum Masters, others still own quality, but not readily enforceable	Contributes to the testing scope definition

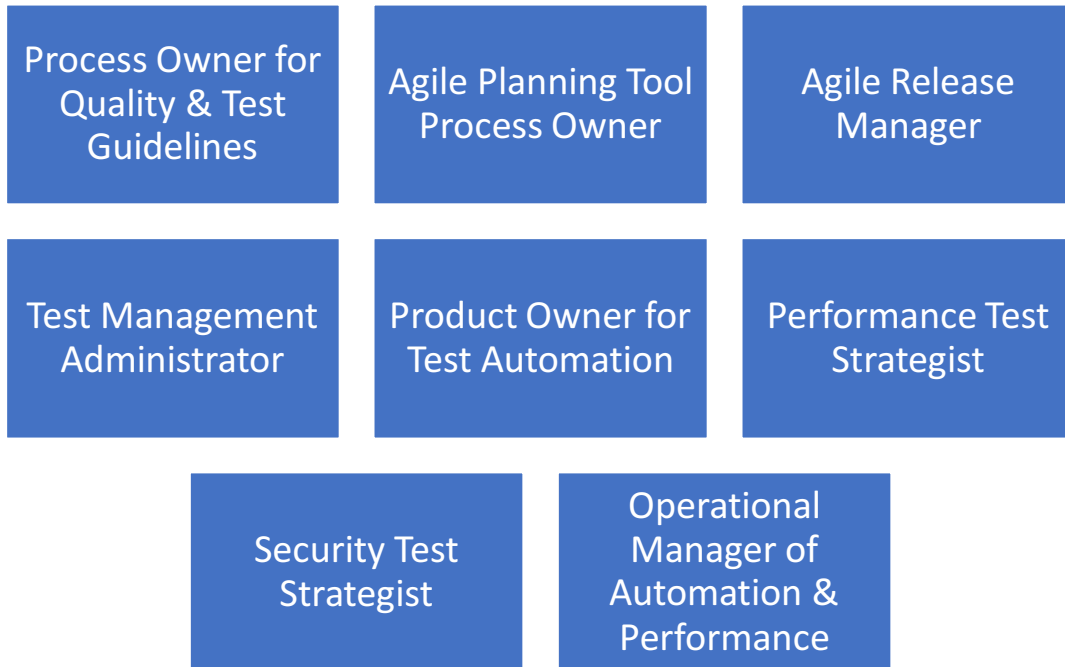
It seems as if the full Agile team wants to contribute to what is being tested and to have input to the testing scope – what QA / Testing Managers used to do. This does not appear to be as prevalent on the Product Owner side, Scrum Master or Development side. Sure, the team contributes to this, but in my experience, I have not witnessed team members being as influential as they are to what they believe is the right approach to testing. This is a great approach to testing collaboration, sorely needed to increase the quality.

There has no mention yet for those associates & managers that were always a step behind in the project lifecycle, such as: Database Administrators & Managers, System Administrators and Infrastructure Managers. The inception of DevOps changed the world for them for the better and the IT industry continues to forge ahead strongly in this direction.

Where does this leave traditional QA Managers? I've heard some crazy transitions, even one change where the QA Manager at a previous employer transitioned to being HR Manager for IT! There is hope, and excitement ahead for QA Leaders, being creative and innovative.

## 2 High-Level focused areas

Here are some areas I have seen QA Leaders morph into and some that are still untapped by and large within the industry. Consider the options below. I have broken the roles into more process-oriented roles and technical-oriented roles:



Here is a brief description of each and will be elaborated on more in the upcoming sections:

### Process-Oriented

#### *Process Owner for Quality & Test Guidelines:*

Helping set the standard of what each test should have included minimally, factoring in regression, negative, boundary, equalized class testing just to name a few testing types.

#### *Agile Planning Tool Process Owner:*

Great for process-oriented QA Managers focusing on the overall quality of the Agile process. Quality reviews for how epics, stories, defects and test results are written and reported.

#### *Agile Release Manager:*

Bringing good release management practices back into the fold to ensure all criteria has been satisfied for a successful deployment to each promotion stage.

## Technical-Oriented

### *Test Management Administrator:*

By owning the administration of the test management solution, the QA Manager can ensure releases are on schedule and the defect burn is trending the right way to list two simple metrics.

### *Product Owner for Test Automation:*

As some test automation specialists are used to fulfill operational requests and not dedicated to the specified product team, the QA Manager is the product owner for overall products requests.

### *Performance Test Strategist:*

Incorporating performance testing into each sprint is more theory than practice currently, but a great chance for a QA Manager to influence this direction as opposed to waiting until the end.

### *Security Test Strategist:*

Similar to that of performance test strategist, fusing security testing into each sprint is rarely done in most cases. Another great opportunity for a QA Manager to include these into the culture.

### *Operational Manager for Automation & Performance:*

With automation & performance specialists deployed on to product teams, there should be a good balance for operational personnel as well looking at the maintenance of the solution(s).

These eight areas may or may not be a full-time role in and of itself, but two or three collectively are certainly secure ways where QA Managers can ensure they are embedded not only to each of the Agile teams, but also to the overall Agile process.

QA Managers have shown skillset in some of the following areas: holding to the quality process, negotiating on testing breath vs. depth, collaborating with other stakeholders, coordinating with peers, investigating new testing approaches, implementing testing solutions. The definition in each of these areas maps very well to the skillset most QA Managers already possess.

### 3 Section breakout

#### Process-Oriented

##### *Process Owner for Quality & Test Guidelines:*

QA Managers have long been known to be the owners of quality in the IT industry. In this section, we'll examine the make-up of quality of tests vs. the test types used. This is where QA / Test Management can shine and has great potential to do so. This responsibility would require with getting more intimate with the test cases (primarily manual test cases for now), than might have been done previously.

What are components of high-quality test cases? Here are some criteria the industry has thrown around for quite some time:

- ✓ Tests must be written with clear starting and end points
- ✓ Tests need to be written in such a manner that anyone can execute them
- ✓ Tests must be written using a modular approach (even if grouped in one test case). Automation specialists will be able to automate this much easier if so
- ✓ Test author provides an appendix spelling out any and all acronyms used in test case
- ✓ Test data is not hard-coded. New tests are not generated just for testing a different set of data with the same steps and procedures

That's a good enough checklist to start for QA / Test Management to use for all tests across product teams. Lean criteria verification makes this Agile-friendly to Product Owners, but compliant for those working in regulatory environment or have to undergo audits.

With regards to the test types used, QA Management can help define the structure within the test management solution (regardless of how formal or not formal a solution is for this). As testers are creating tests for the assigned stories, it's in my experience that the test follows the straight path primarily. I won't refer to just the "happy path", but many are not expanding to the various test types that are recognized by the testing community.

There is opportunity to define each test type that should be included within each story, with the understanding that the scope of the testing type is resident with that story only. The testing types can be any or all of the combination below to give a sample listing:

Negative	Boundary
Equivalent Class	Security
Component	Exploratory

Notice that regression testing was not listed. That is imperative for every release and may or may not be included within the sprint. Product teams are dedicating sprints for regression testing, making the testing type listing above even more critical to ensure the tests are of high-caliber.

*Agile Tool(s) Process Owner:*

There is a growing trend among the QA / Test Management community and that's pursuing their Scrum Master certification. This is not typically where the skillset lies for test leadership, but they are broadening their horizons, as well as going for their PMP (Project Management Professional) certification to increase their marketability.

The Agile planning tool is at the heart of Agile development, but it certainly does not stop there. Let's examine this a little deeper:

Epic	What is the criteria that needs to be said about the quality of this high-level requirement in essence? Who regulates and governs that for the rest of the team? The Product Owners own this yes, but quality leaders can assist greatly.
Stories	<p>Are there defined guidelines that state how a story should be written and what details need to be included within this? Is there anyone measuring the story-effectiveness?</p> <p>For example: When a story has been given initially to the development and testing team, how many times does this have to go back and forth? How many hours or days were impacted because of this. Granted this is a key principle of Agile, but the goal is not just to accumulate technical debt right out of the gate.</p> <p>It would be nice if there someone was helping measure this across teams to identify training gaps and areas of improvement of the overall Agile process.</p>
Defects	<p>This should not have changed greatly, but is anyone doing a quality-defect review for defects reported?</p> <p>The report should ensure the defect is addressing a singular point, clearly states the problem, lists the software build and environment tested, and finally, sequentially states the step-by-step details to reproduce.</p> <p>By having base criteria documented and knowing these are under review from QA Management for adherence, the developer is better equipped to analyze / fix the issue quickly, the tester (original or new tester) to retest with a solid understanding of the problem and fix, and for the Product Owner to accept the story as complete because of the quality put in throughout the process.</p>
Test Results	<p>Much like the defect portion of this section, the standards for reporting test results should not have varied much at all. Depending on what you need from the execution run, you may have to capture a bit more or less.</p> <p>For example, do you need accompanying screen shots for the validation points in your test or do you need to show a pass / fail on each corresponding step? This part is well drawn out for QA Leadership to assist and consult each of the Product Owners during the testing time of the sprint.</p>

*Agile Release Manager:*

Following along the lines of ensuring the quality of tests and the test types used, QA Managers are in a strong position to help govern the acceptance criteria process for the overall release. Each sprint should account for this, but who is watching the overall release plan for adherence to the agreements made? Test Leadership can be the Product Owner's best friend in this capacity.

The key Agile solution to govern is the Continuous Integration process. Most IT organizations are utilizing a Continuous Integration (CI) solution for integrating the builds with the speed of the Agile process. Becoming an administrator for this can help ensure the right pieces are going into the right build, with the right adherence followed.

With this type of solution being used in almost every Agile development process, there may be struggles to find one person take ownership of the solution itself and the guidelines that all should follow. Another great opportunity for QA Leadership to manage and own.

Technical-Oriented

*Test Management Administrator:*

Of all areas that are the best fit for QA Leadership, this should be the most natural. There may be managers that need to learn the technical aspect of making configuration changes within the solution or how to integrate into other systems, but here are system elements that need to be defined, configured and connected into your Test Management or Application Lifecycle System.

<b>Defined</b>	<b>Configured</b>	<b>Connected</b>
Requirement records	Requirement → Test Case workflow	Agile Planning
Test Plan entities	Test Case → Defect workflow	Continuous Integration
Test Design template	Defect → Test Case workflow	Test Automation
Test Case forms	Test Case → Requirement workflow	Performance Test
Test Execution records	Defect → Requirement workflow	Configuration Management
Defect forms		
Defect reports		

If all of these elements are defined properly, this can be a very smooth & streamline process that allows for QA management oversight to ensure proper testing regardless of the SDLC used.

Testing leadership is in a strong position with Product Owners & Testers to ensure the right amount of information is listed within the story. Ideally this would be tracking at the scenario-level as the detailed information is in the Test Management solution itself.

QA Managers are the best to facilitate this process by first implementing the technical constructs as listed above.

### *Product Owner for Test Automation:*

Many of the items listed until this point are not full-time positions themselves. A collection of a few of the areas of interest for QA Leadership will add value to the organization. However, this area would be a full-time role being a Product Owner for Test Automation.

Test Automation could encompass both Functional Test Automation and Performance Testing. Not that this needs the extra work for prioritizing Performance Tests because Functional Test Automation is enough! The focus should be on component-level automation that can apply for any type of testing. This also applies for API / Web Service Testing as much as UI automation.

Think of the responsibilities that Product Owners have & see how an automation team functions:

#### Solution

#### Ownership of the Automation solution

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- Stays on top of product updates, upgrades, new libraries, licensing and solution alignment with the systems being tested

#### Program

#### Total ownership of the program

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- Defines the vision of what automation will test and what it will not, manages the backlog and implements in sprint or regression cycles, and prioritizes all items often and as appropriate

#### Stories

#### Writes the epic or story

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- After the epic is defined, drafts each automation story, understanding the technical dependency on how each outweigh the manual testing effort

#### Acceptance

#### Define criteria

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- The automation module should execute without failure, work with the module that flows before and after logically, and meet the standards of the overall framework

If Test Leadership follows this guideline, this can be a great position as they are responsible for the success of automation, and ultimately test success. More organizations are leveraging automation as a service & the QA Manager is in prime position to be the Product Owner for this.

The area of caution here is not to attempt to replace all testing with automation. If working in a service capacity, the criteria of how the request comes in is just as critical. It will be QA / Test Leadership to negotiate and work with the requestor as to what they need to have defined and documented prior to a story making it into the queue.

The good news is that this expands beyond just the QA world. This applies for anyone who has an automation request, not just a functional test automation request from the QA team. This will be new for QA Management, but exciting nonetheless.



### *Performance Test Strategist:*

Performance testing has been organized as a separate team and has been done typically at the end of the release cycles regardless of SDLC used in many organizations. There is a large push to integrate performance testing into sprints, but that has proven to be more theory than practice. This is still an unknown entity on how to loop this in for each sprint.

A hands-on QA Manager can help define the performance testing objectives per sprint and for the overall release. This person would also be the owner & champion of the solution being used. Having a test strategist apply this approach early, here is what can be achieved and how the role can be positioned to stakeholders:

- ✓ Bottlenecks identified and remediated early
- ✓ Continuous performance tests run like functional automated tests
- ✓ Additional infrastructure needs identified
- ✓ Code modifications made early as opposed to the very end, usually crashing schedules

Coupled within the process, QA Leaders can integrate this strategy nicely with a Product Owner.

### *Security Test Strategist:*

Security testing can get even more ambiguous on defining what to do than performance testing. These are two of the biggest elements of non-functional testing and have gone largely unapplied into the actual Agile sprint cycles. This goes well beyond penetration testing that the security, infrastructure or network team may do. A QA Manager may not know all of the security tests to run immediately, but can work closely with the teams mentioned for penetration testing to form a solid test strategy. It may be an array of tests that get run per sprint or determines at which sprint it's best to be run in. Solid technical testing knowledge required, but also coordinating with others.

### *Operational Manager for Automation & Performance:*

This is another area that lines up closely with the Product Owner role of Test Automation. Assuming the QA Manager is the Product Owner for this team, the work that is being done is usually part of an operational team. This means non-sprints, no dedicated resource to a product team if you are part of the operational team. Functional automation as part of the sprints is truly an effective team member, but let's paint the following scenario:

- Sprint 1 has automation work and is completed in sprint 1
- Sprint 2 has automation work built on sprint 1 and is completed in sprint 2
- Sprint 3 has automation work built on sprints 1 & 2 and is completed in sprint 3
  
- Sprint 4 has automation work built on sprints 1-3, but is broken due to an element change

This can either accumulate as technical debt or given to the operational team to help repair and get the sprint teams back on pace. Managing an Operational Test Automation team will not only get this resolved, but will also manage and grow the overall automation regression strategy.

## 4 Conclusion

The Agile world seems to have one of the largest impacts on the role and function of the traditional QA & Test Manager. As the Product Teams own the day-to-day direction of testing and the quality of the release, QA Leadership is not always included in this mix. But we know there is value add for them in the organization, but where is the right fit?

It's time for QA Leaders to redefine themselves and jump into areas of focus. Leaders will gravitate either towards the process-oriented path, or the technical-oriented path. Both are needed. The sections outlined in this paper will get managers back on the career path they have chosen, and most likely, with more enthusiasm as they can expand in areas of interest.

This will be evident to the individual and to the organization, which should lead to a successful and stable future ahead!