

Applying Agile Principles to Test Automation Development

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Not....

- Test automation principles
- Agile methodologies
- Testing in an agile dev environment

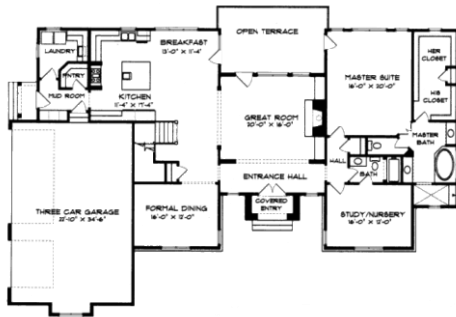
Definitely...

- Benefits of taking an agile approach to automation
- Mapping automation development tasks into agile processes
- What agile development assets look like for automation projects

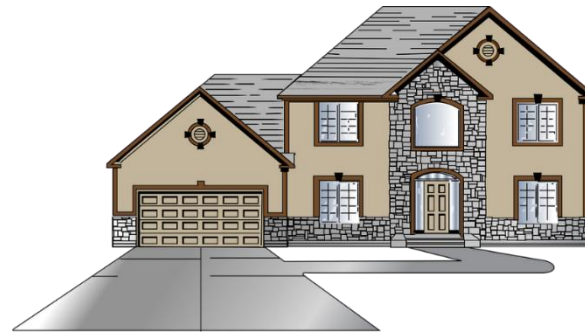
A quick story...

- Automation for ERP system
- All requirements gathered up front
- 3 month waterfall style implementation
- Success – reliable, maintainable and scalable automated test suite!

We agreed on this...



But things changed
over 3 months...



And built it on
time and within
budget!



The business
really wanted
this!

Stakeholder visibility and expectation management



- Visibility to the realities of automation
- Better understanding of what is required to succeed
- Retire their silver bullet expectations

Better Scope Management



- More frequent, shorter feedback loops
- Transparency on scope adjustments

Deliver value much sooner



- Creating data for other testing efforts
- Executing smoke tests
- Grow support for automation

Agile Automation will NOT give you...

- Automation strategy
- A reliable, maintainable, scalable solution
- Good test data management
- Integration of test automation with the application SDLC



All the things that factor into good automation practices still apply!

Diving In!



- The voice of the organization that will benefit from automation
- Typically the Test/QA Manager
- Must understand the realities of automation realities



Automation Lead/Architect can serve as Proxy Product Owner if availability becomes an issue

Personas

- Help bring focus where it should be – on users of the automation solution
- Vary across organizations / projects, but typically consist of...

Typical Automation Personas and Focus

App Dev Manager / Product Owner	<ul style="list-style-type: none">• Testing priorities• Insight into product quality
QA Manager	<ul style="list-style-type: none">• Impact on resources• Content and format of test results
Test Lead / Engineer	<ul style="list-style-type: none">• Creating and executing tests• Analyzing results
Test Data Owner	<ul style="list-style-type: none">• Test data requirements and management
Test Environment Owner	<ul style="list-style-type: none">• Requirements and constraints
Automation Engineer	<ul style="list-style-type: none">• Framework maintenance• Supporting test engineers

Vision

The automated test suite will significantly reduce the manual effort associated with common, repetitive and tedious testing activities, and allow our resources to focus on higher value tasks.

Roadmap

Sprint	0	1	2	3	...
Features	Configure base framework	<ul style="list-style-type: none">• Lead creation• Lead conversion• Account creation	<ul style="list-style-type: none">• Account management• Contact management	<ul style="list-style-type: none">• Opportunity management• Activity reporting• Pipeline reporting	...

Release Planning

Lead/account data creation for development

Regression scope priority 1

Regression scope priority 2

Avoid focusing on test cases...

As a tester

I want to automatically execute test case OM-0015

So that I can test can test order management functionality in less time

Instead, think about testing activity and automation capabilities...

As a tester

I want to quickly create new orders

So that I can efficiently satisfy requests for test data



Don't forget about the automation environment and operational processes !

As a tester

I want to flag automated actions as "negative" if I expect them to fail

So that they are marked with the correct pass / fail status in the test results

Prepare to Deliver Value

- Automation environment preparation
- Base framework configuration and training (if available)
- Initial high-level assignment of product backlog to sprints
- Education of stakeholders

Addition Benefits

- Get everyone in tune with the cadence of regular standups
- Intro to agile for those with no experience



Avoid the temptation to turn Sprint Zero into a waterfall style design session!

Sprint Goal

Sets the focus for sprint scope and prioritization. Answers the question “What value will automation provide by the end of the sprint”?

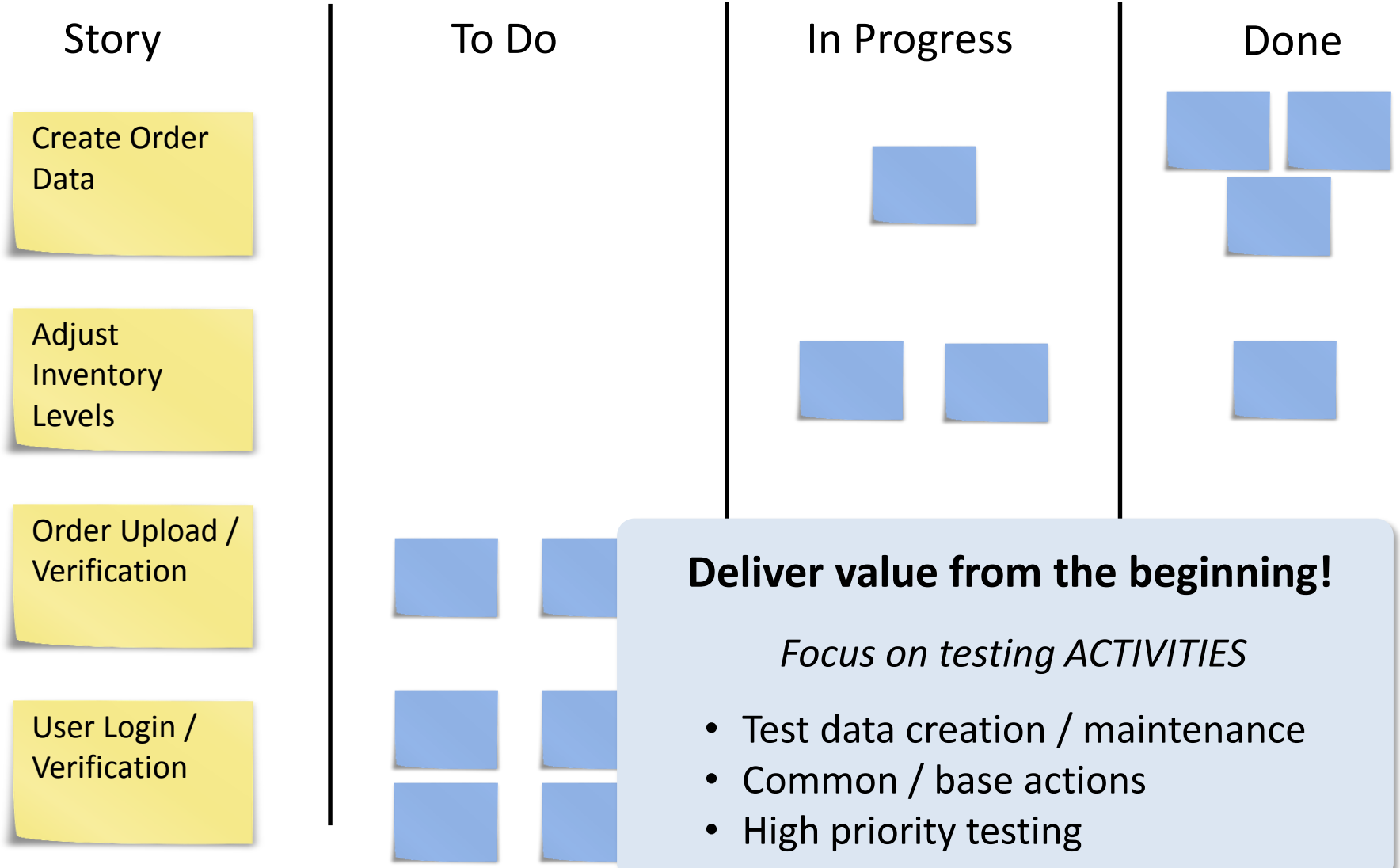
Sprint Backlog

Defines the automation deliverables from the product backlog that are to be completed during the sprint

Change is Constant

Keep abreast of application changes to ensure the automation backlog is current

- Sprint planning meeting
- Daily stand-ups
- Sprint review meeting



Deliver value from the beginning!

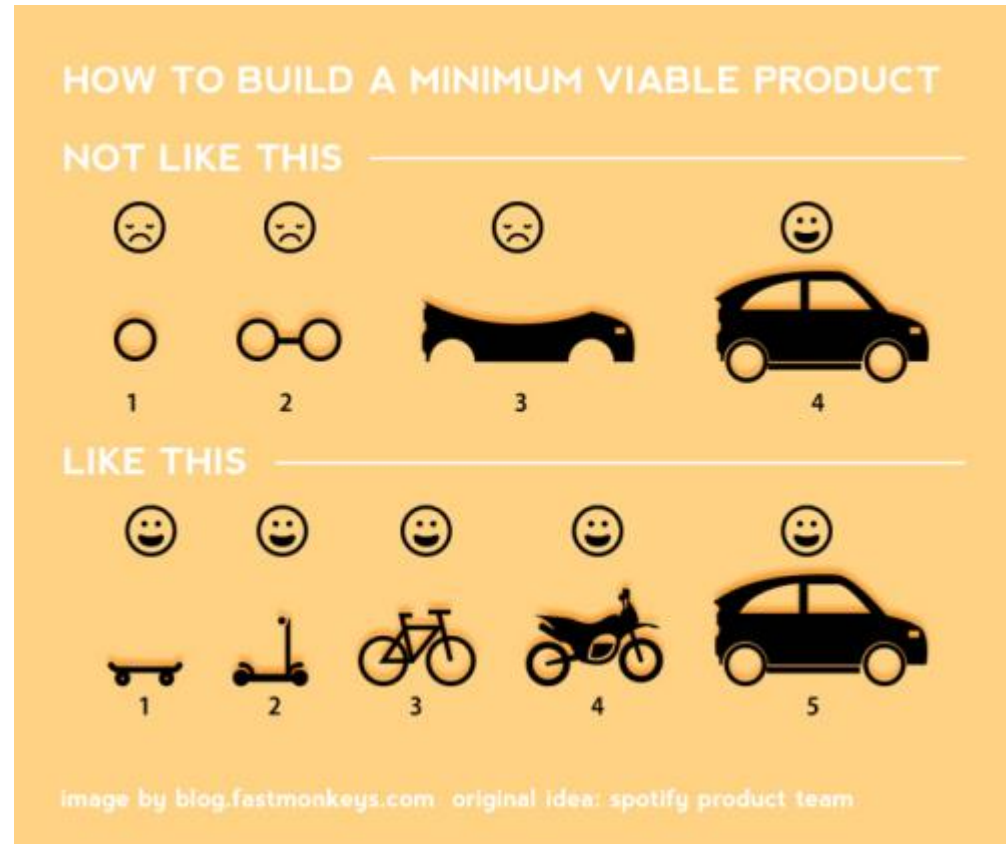
Focus on testing ACTIVITIES

- Test data creation / maintenance
- Common / base actions
- High priority testing

Avoid the “big bang” approach to implementing automation!

MVP characteristics...

- Provides enough value that people are willing to use it
- Demonstrates the future benefit of automation
- Starts the feedback loop to guide future automation scope



Why do we need a formal definition of “done”?

All the traditional “agile” reasons...

- Common understanding of task completion criteria
- Common understanding of team goals
- Communicate team’s commitment to quality

... and help automation stakeholders develop realistic expectations

- Test automation isn’t a tool
- Test automation is software development (typically)

“Done” ...

Story / Issue (Testing Component)

- Code checked in
- Code review completed
- Sample test created, executed, and verified for positive and negative outcome
- Results logging verified
- External output verified

Story / Issue (Core Component)

- Code checked in
- Code review completed
- Framework smoke test updated
- Framework smoke test passed

Sprint

- All stories DONE
- Testing component documentation updated
- Core component documentation updated
- All issues dispositioned (closed or deferred)
- Test suite smoke test updated
- Test suite smoke test passed
- Tester(s) successfully created and executed automated tests using new component(s)

Core Framework

Test harness focused on making sure the core framework isn't broken.

Typical tests focus on the following:

- Results reporting
- File parsing
- Test control flow
- Test data processing
- Environment components (e.g. execution machines, CI engine, etc.)

Test Suite

Test harness focused on making sure the testing components (i.e. components that perform AUT actions and verifications) aren't broken

- Ensures new testing components integrate with existing test suite
- Can be run in "upstream" environments to proactively identify impact of pending app changes

Get the Users Involved

Prove the deliverables meet expectations and can be used by the organization to deliver the promised value. Typical activities include:

- Testers creating/maintaining test cases
- Managers reviewing execution reports/metrics
- Creating and using test data

Be Diligent with Sign-offs / Definition of Done

Ensures the stakeholders stay engaged and the entire team is on the same page with the status of the automation effort

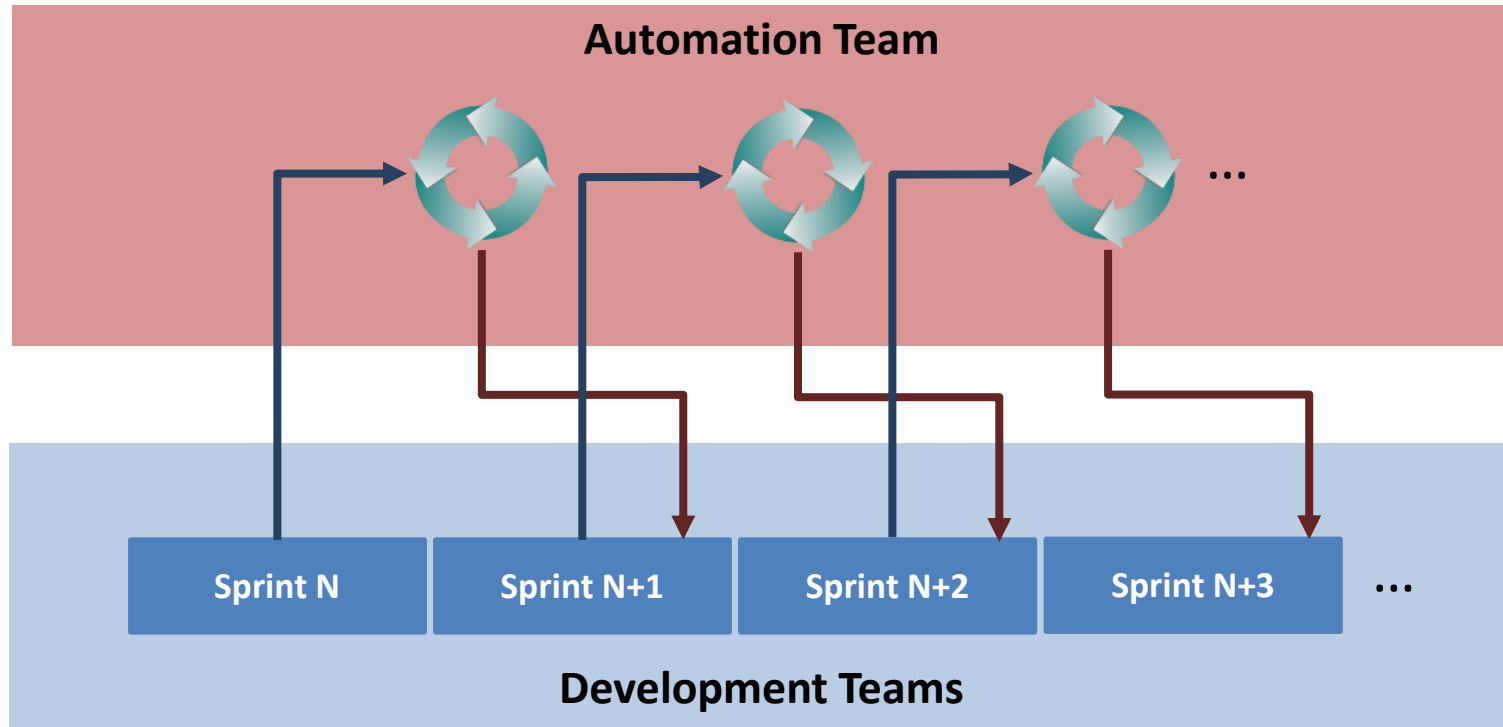


Don't skip the team retrospective!


Agile Manifesto Principles (Automation Remix)

Satisfy the customer through early and continuous delivery of value	Test automation must serve the organization. Automation for the sake of automation is a waste of time.
Welcome changing requirements	Be ready to accommodate changing test objectives and strive to proactively understand the impact of app changes.
Deliver working software frequently	Allow the organization to use the solution to automate test activities from the beginning – AVOID THE BIG BANG!
Business people and developers must work together daily	Test automation must not be implemented in a vacuum separate from the organization it serves.
Build projects around motivated individuals. Give them the environment, support, and trust they need to get the job done.	Have realistic expectations around what test automation is (and isn't) and trust the automation engineers to build the right solution.
Continuous attention to technical excellence and good design enhances agility	Don't cut corners (e.g. record / playback) and create technical debt.
Simplicity – the art of maximizing the amount of work not done – is essential	Don't set scope by focusing on automating manual test cases. Focus on the testing activities that can benefit the most from automation.

Agile Manifesto: <http://agilemanifesto.org/>



—> Automation Requirements
—> Regression Execution

 Automation Enhancement and Maintenance



Offset development and automation sprints



.... and Answers!

Direct future questions to:

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