5 Steps to More Effective QA Automation in a DevOps Environment

February 25, 2016

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Questions

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Daniel Gannon, President/CEO

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TurnKey – The Leader in Scriptless Test Automation

- Founded 1989 - Privately held, HQ in Denver, CO-USA with primary offshore operations in New Delhi, India
- Test Automation focused on functional testing for non-technical and technical users of custom and enterprise packaged applications
- Scriptless automated testing solutions currently built on the HP ALM technology stack
- TurnKey's scriptless test automation solution supports a broad range of applications - packaged, web, mobile and custom
- Pre-built Accelerator solutions for leading packaged apps – SAP, Salesforce, Oracle EBS, PeopleSoft, Guidewire and more

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Key Drivers Propelling Business Applications

Service

Sustainability

Running the Business

Profit

Product Introduction

Branding

Growing the Business

Transform-ing the Business

M&A

Differentiation

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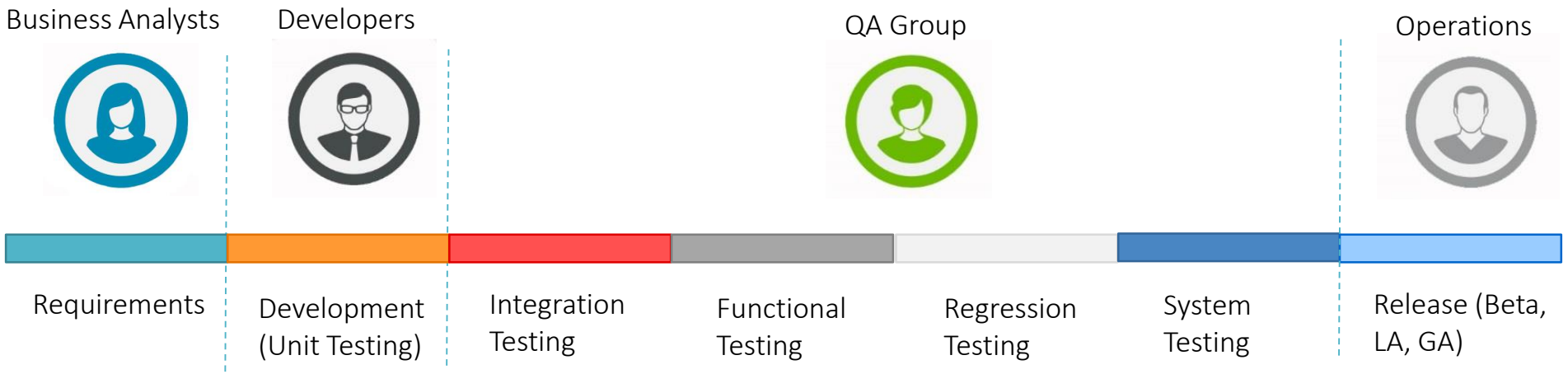
Question 1:

What is the biggest issue in software development that keeps you up at night?

- Delivering solutions to market faster
- Resource management (budget and personnel)
- Defects leaking into production
- Impact of new software on existing systems/applications
- Integration of QA and development

Software Development Lifecycle

Traditional Waterfall Model



Long development cycles

Individual silos (us vs. them)

Lack of visibility

Maintenance = 15 additional years

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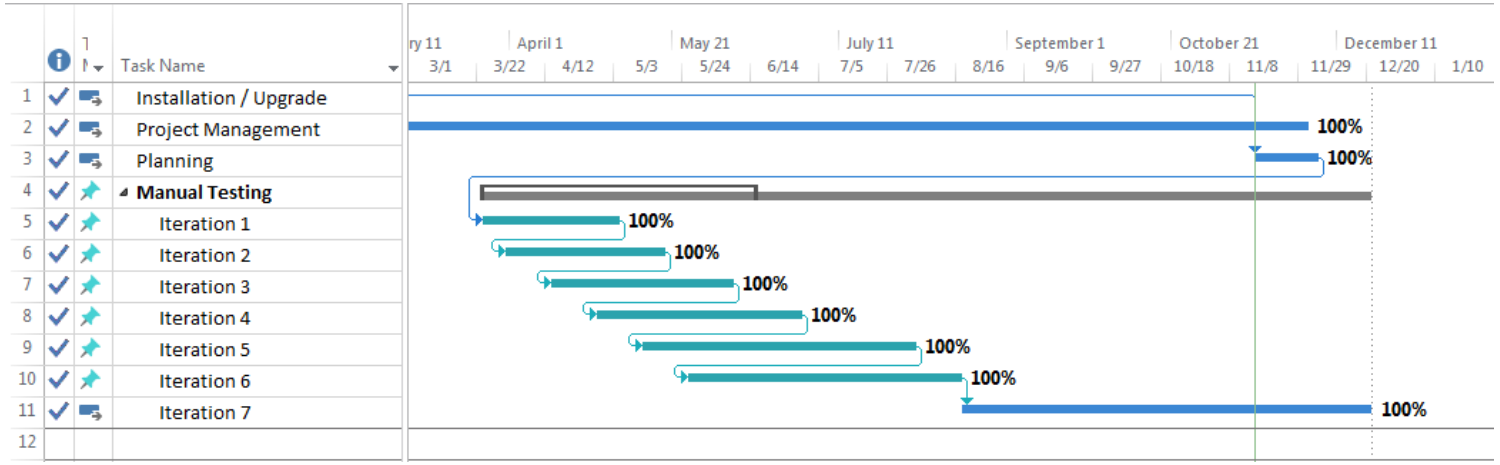
Customer Use Case – Enterprise Upgrade

- 9 month project
- 7 manual test cycles (4729 manual tests executed)
- Team 20 (comprised of Business Users & BA's)
- 12 week end-to-end UAT cycle



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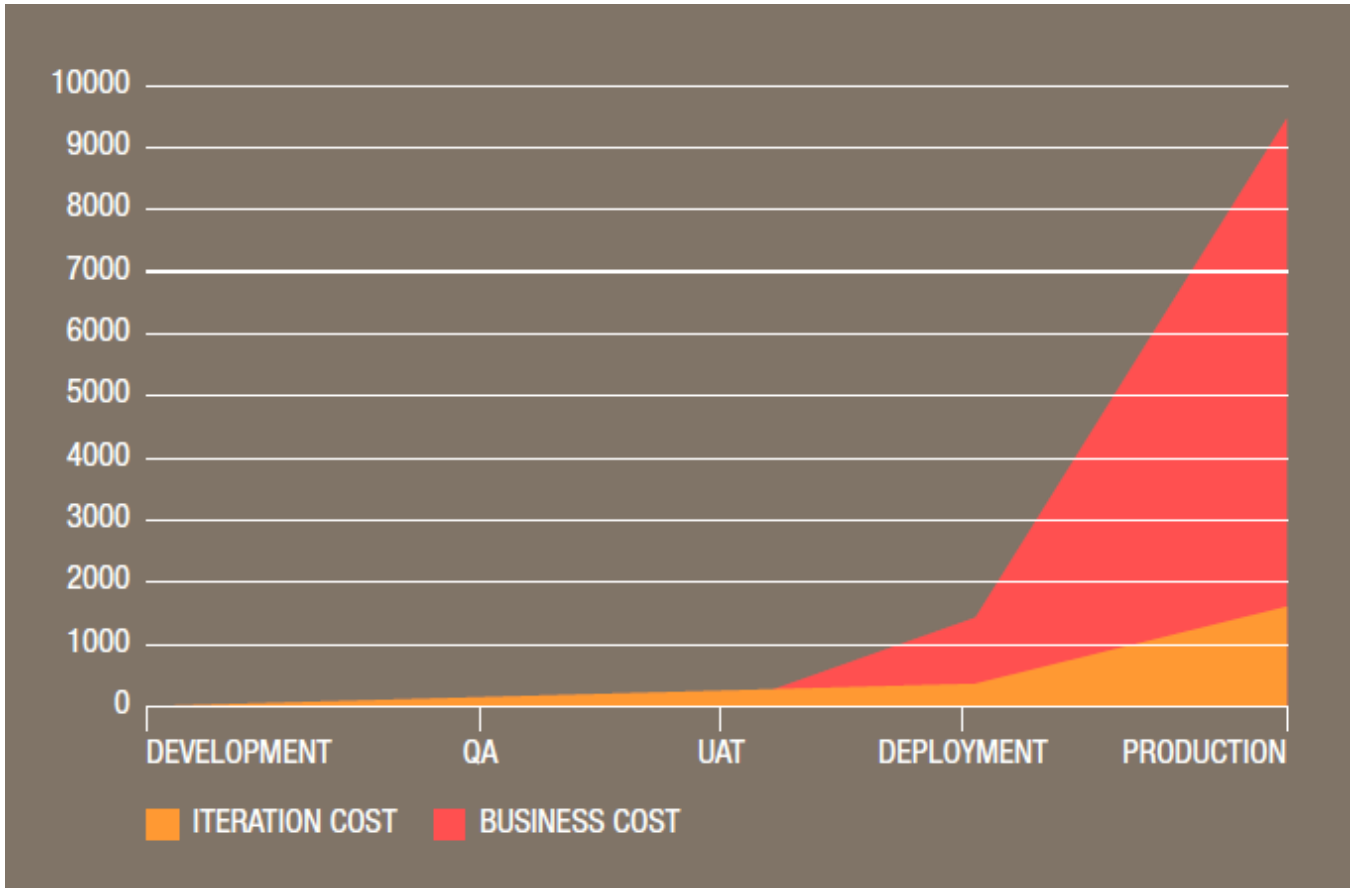
Software Development Costs – Post Release



In June of 2015, the Royal Bank of Scotland encountered a “glitch” where

- 600,000 payments, many of which were wage and benefits, were not processed as planned.
- Several days later the transactions were completed.
- In 2012, the same company was fined £65 million for a similar occurrence.

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The “Big Squeeze” on Quality Delivery

In addition to increased time, cost and complexity, defects hitting production and going viral now threaten your company Brand

The Big Question: how to increase velocity, reduce defects in production in increasingly complex apps, while lowering costs?

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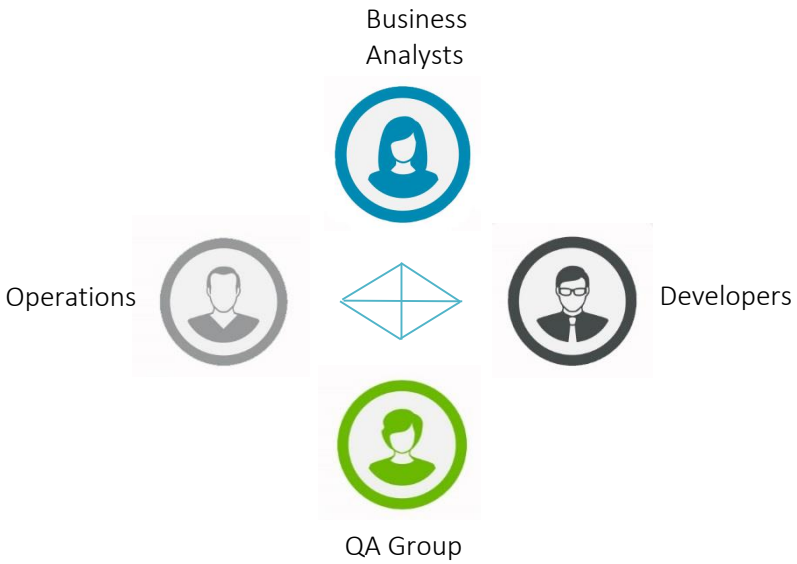
Software Development Lifecycle

A move to DevOps

Shifting Paradigm:

- Short development cycle
- Highly collaborative: planning to release
- Improved visibility across groups
- Improved quality



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What is DevOps

DevOps is the **tighter relationship between the developers of applications and the IT department** that tests and deploys them. DevOps is said to be the intersection of software engineering, quality assurance and operations.

Coined in Ghent, Belgium in 2009 at the Devopsdays 2009 conference around Agile development, Kanban and related subjects. *PCMagazine*. Since then the term has to evolved…

Today, it is "more about pursuing the implementation of technologies, processes and organizational styles and cultures that fit your business needs…**gives us a direction** but we own the roadmap to get there which may be different from every other IT organization."
Cameron Haight, Research VP, IT Operations, Gartner

More than just the ability to deploy changes quickly into production, DevOps becomes the **nucleus to deliver business capabilities when they are required** as quickly as possible and with minimal business impact

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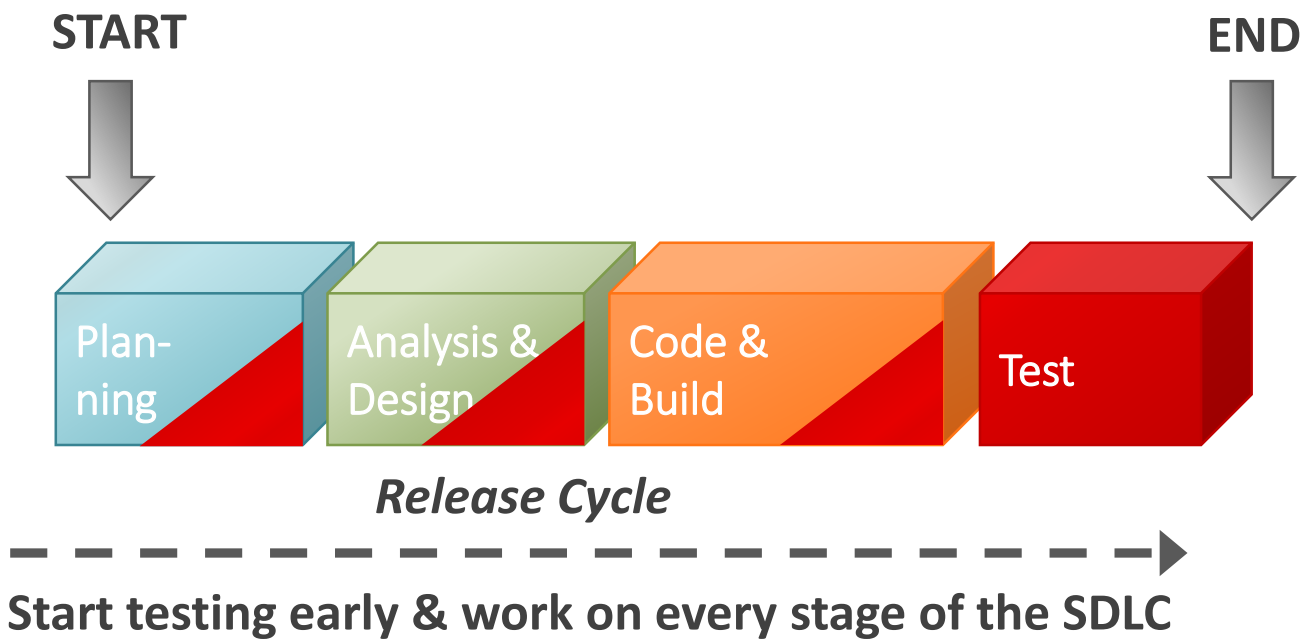
Find and Fix Early



Quality is Built-In:

- Testing involved in all phases of SDLC.
- Test planning started at the beginning of project.
- Testing becomes part of the full development process.

*IDC

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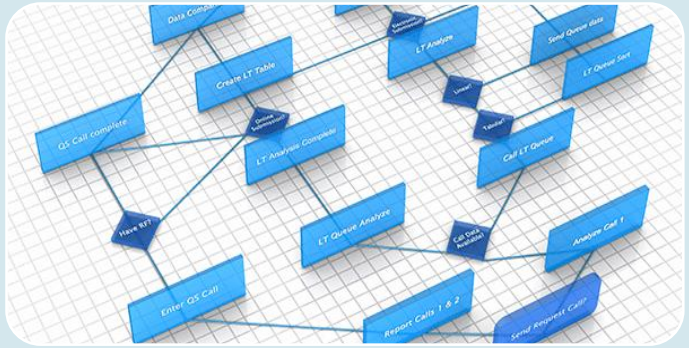
Framework to Support DevOps



Collaboration

- Comprehensive teams
- Thorough review of requirements
- Frequent communication

Integrated Processes

- One platform
- Including end-to-end meaningful use tests
- Testing as early as possible

Automation Tools

- Simplify test creation & maintenance
- Reusability
- Data-driven to support multiple scenarios

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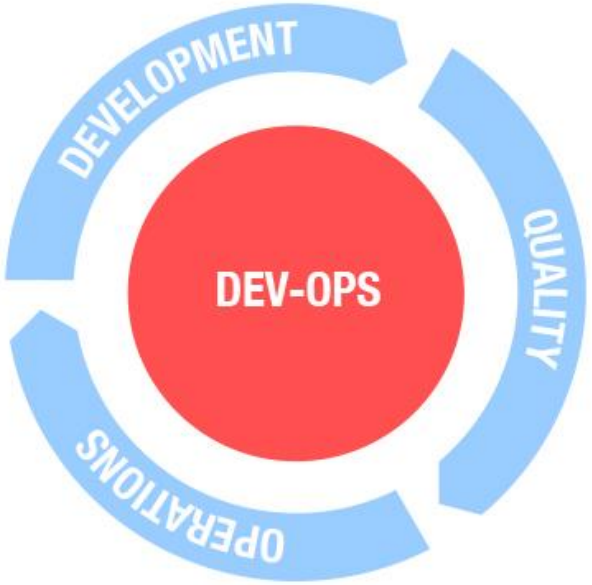
Question 2:

What percent of your software development uses DevOps?

- 0% - 10%
- 11% - 25%
- 26% - 50%
- 51% - 75%
- 76% - 100%

5 Steps to More Effective QA in DevOps



Getting Started

Automated Testing

Faster App Delivery

Shift Left: Quality + Development

Greater Collaboration

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Step 1: Achieve Greater Collaboration

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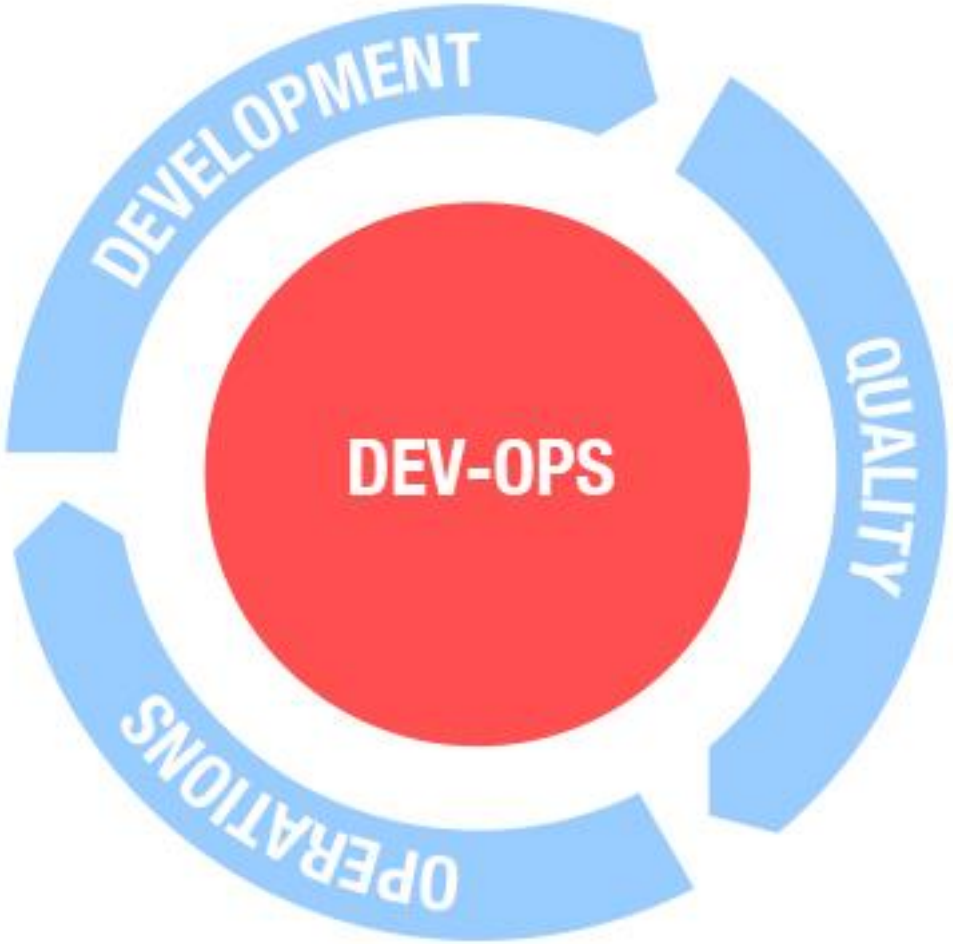
Traditional Roles of Software Development

Development – focuses on change, improvement



Quality – ensures changes are stable and bug free

Operations – centers around stability

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Team Collaboration

Quality is a Focus of the Entire Team

- Everyone must be familiar with the release and part of initial planning
- Constant communication, including daily direct information exchange
- Leverage ALM management tool for effective communication, review and planning

Planning → Requirements → Development → Design → System Integration & Test → Maintenance

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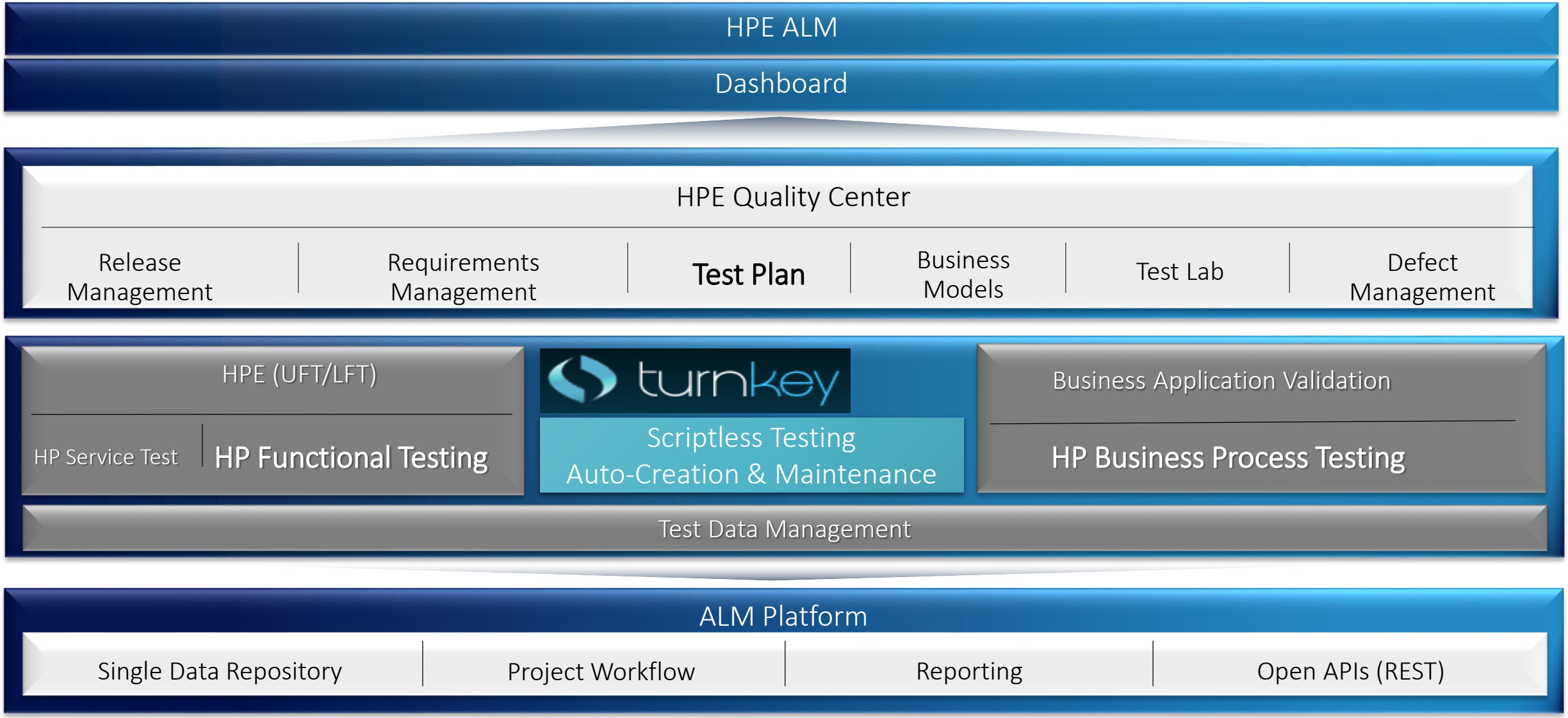
Visibility Across the Team



Step 2: Shift Left – Integrate Quality into Development

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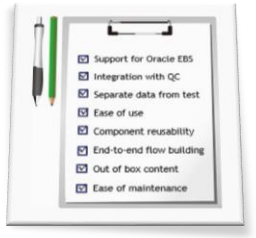
Develop the Plan – Focus the Scope



Preparation is key

- What tests do you need to meet your quality goal(s)?
  - Scope and Approach
- What needs to be automated vs. run manually?

Setting up the environment

- Test Data
- Roles, Responsibilities & Credentials
- Documentation

As the application matures and business logic/functionality becomes available, focus on forming the building blocks for QA

- cFactory and BPT supports this well

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What Should You Test?

Regarding the application(s) under test, answer these questions:

- What would cause the company to lose money?
- What would cause the company to lose business?
- What is the environment in which I need to run my tests?
- What types of issues are “escaping” the testing process?
- What are the high-risk end-to-end business processes?
- What are the processes that your business runs every day?

Your tests should reflect
a “Meaningful Use” of your System

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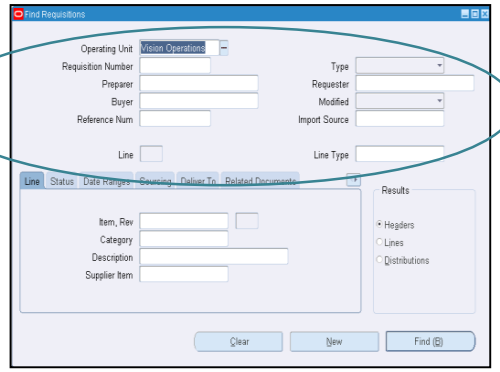
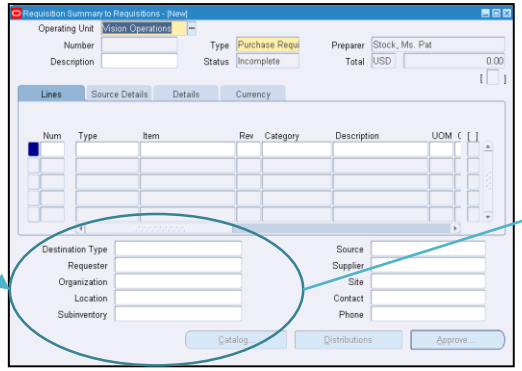
Building End-to-End “Meaningful Use” Tests

Requisition



Requisition Summary



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Step 3: Accelerate Application Delivery

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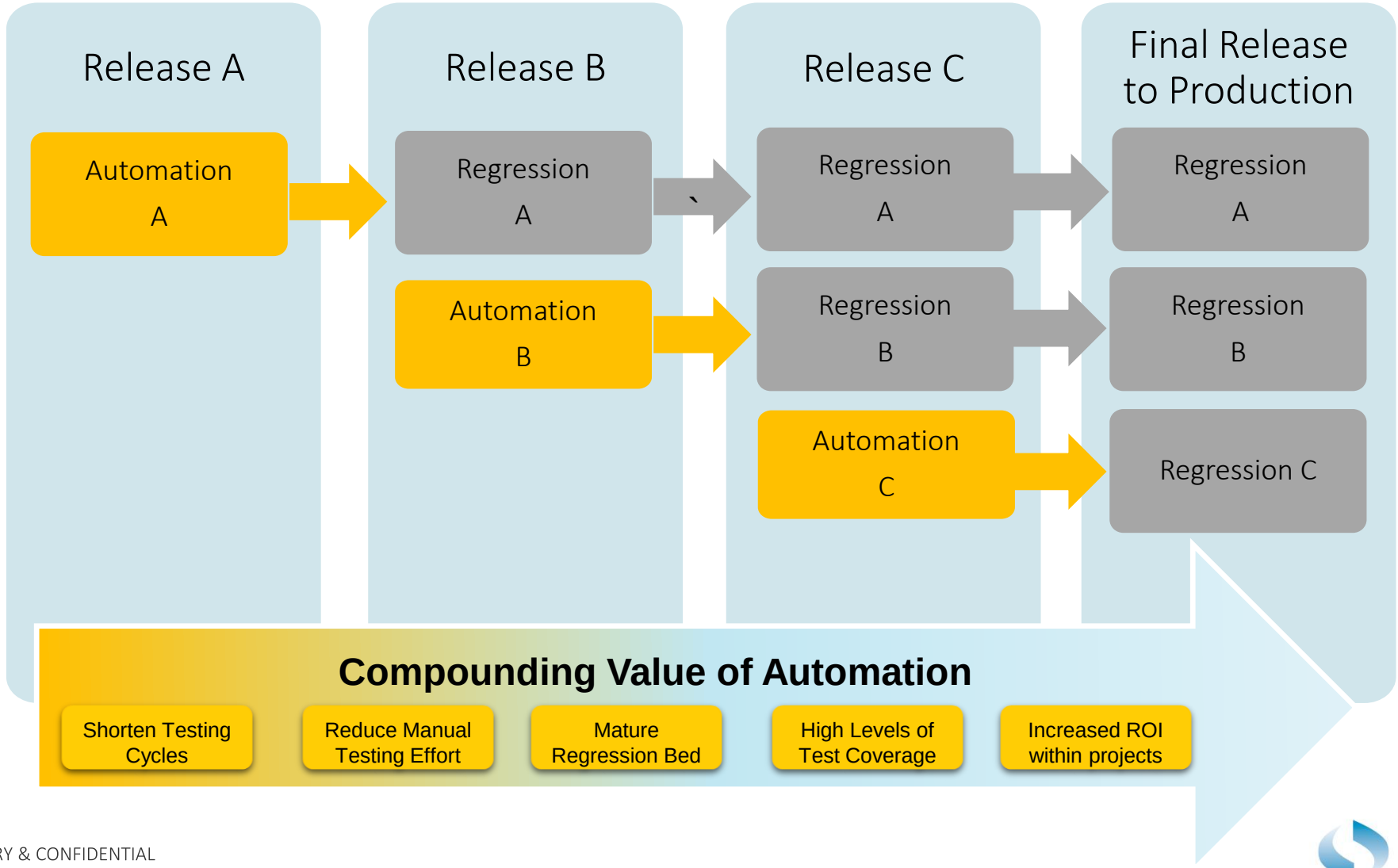
Building the Regression Suites



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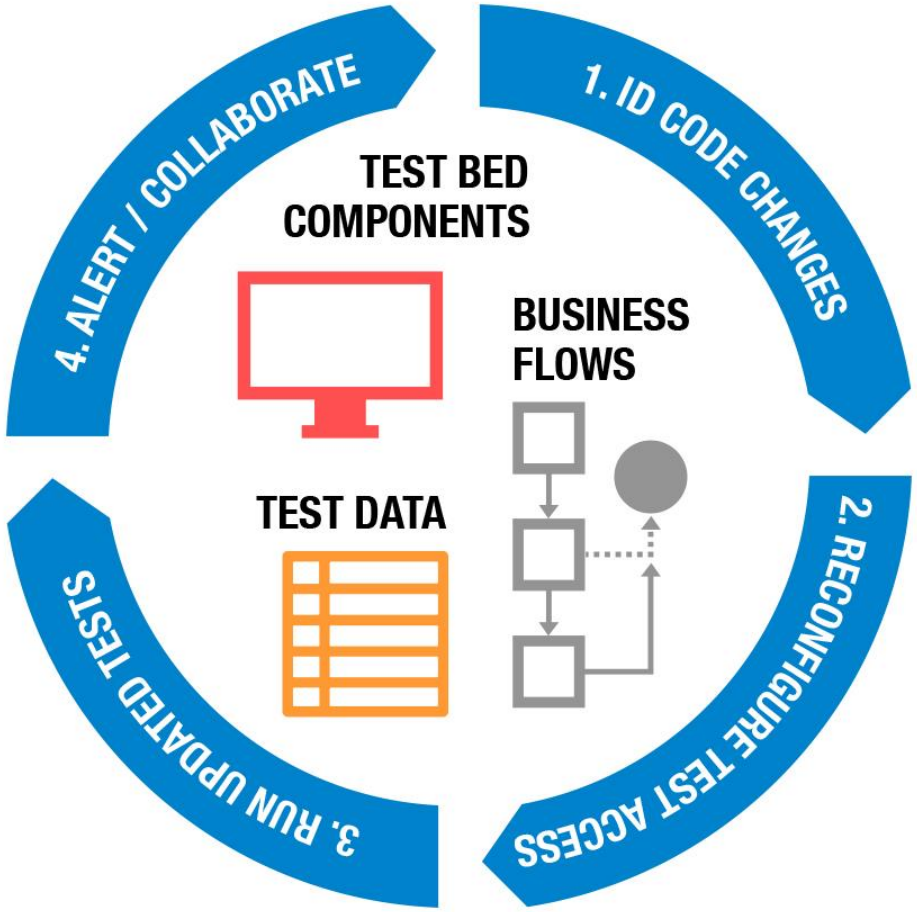
DevOps and QA Working Together



Find and Fix Early:

- Defining testable requirements
- Identify what is changing code-to-code, build-to-build
- Update existing test cases
- Identify data requirements

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Step 4: Add Scriptless Testing to Your QA Stack

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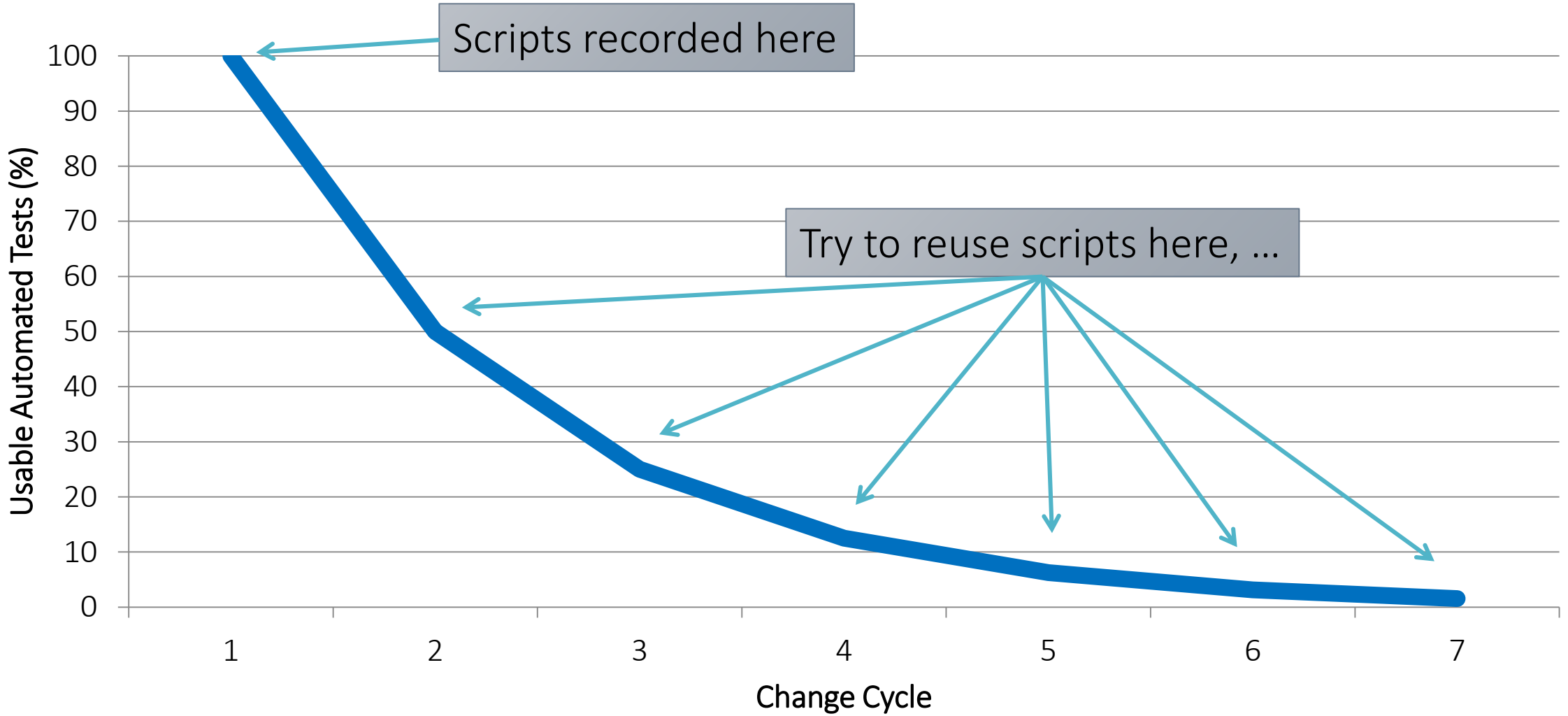
Keeping Test Cases Relevant



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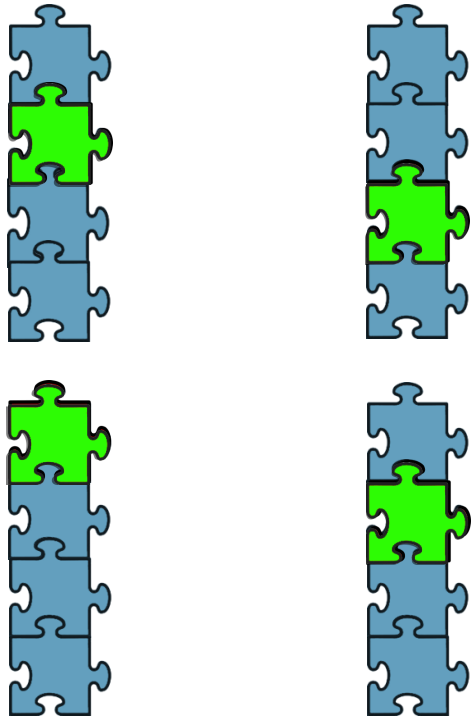
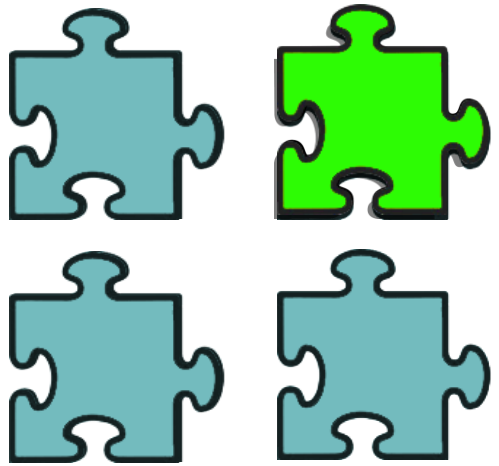
Application Aware + Scriptless Test Automation

Dramatically Reduced Test Case Maintenance Effort





Software Certified Integration

Software Certified Content

Software Global Business Partner

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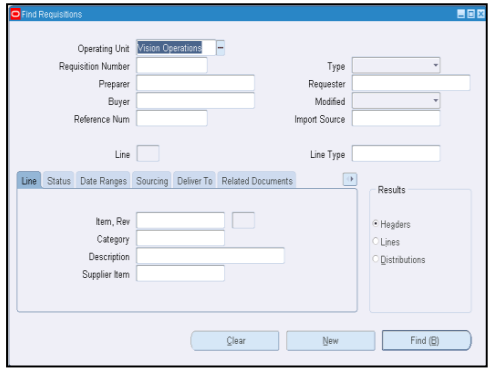
Data Driven Automated Solution

Requisition



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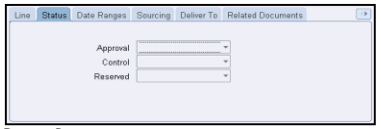

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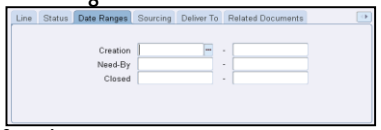
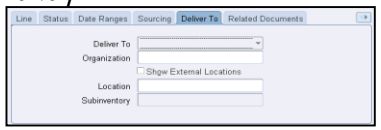


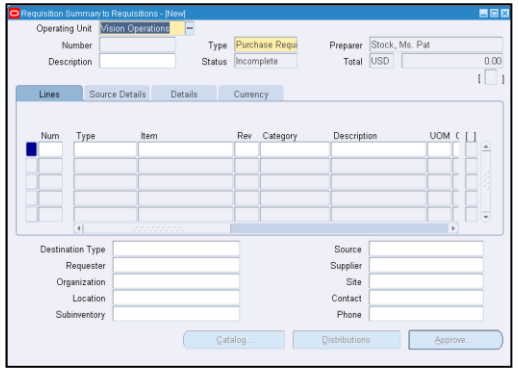
Sourcing

Delivery



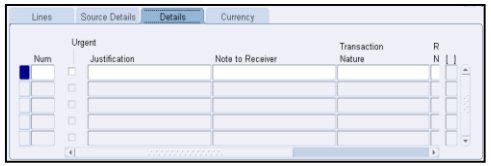
Related Docs

Requisition Summary



Source

Details



Currency

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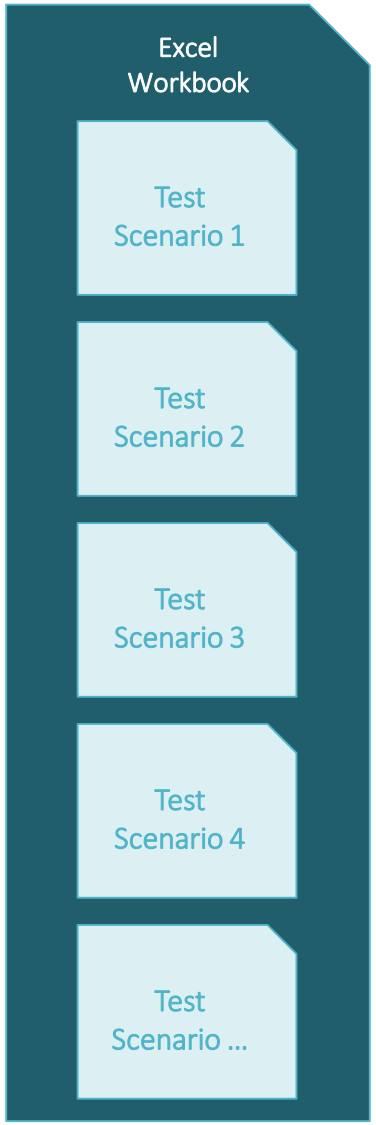

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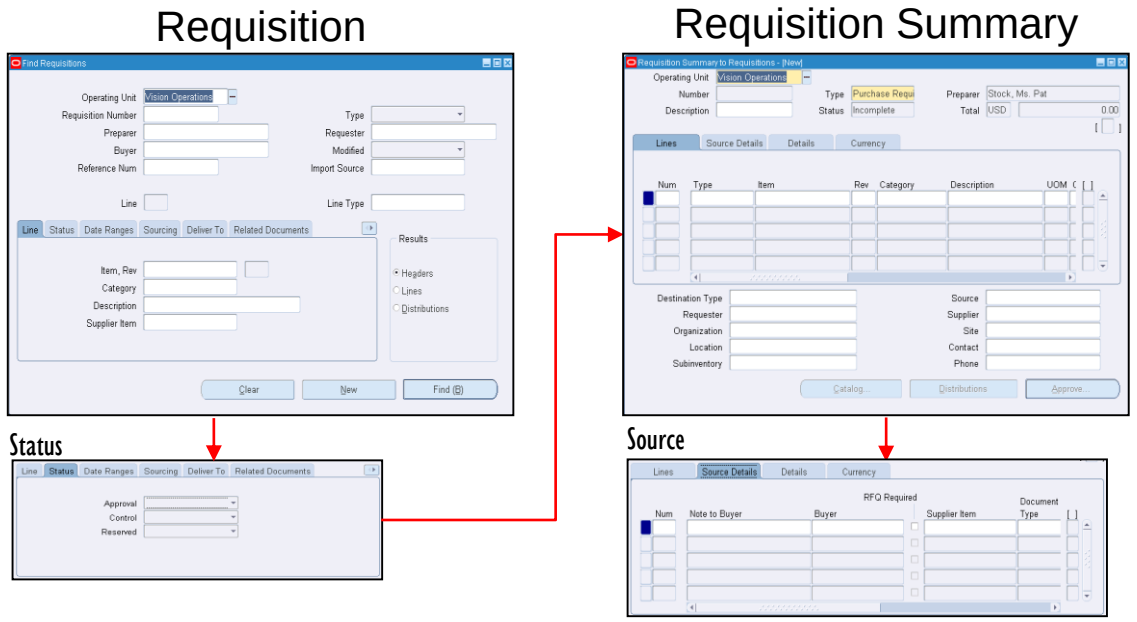
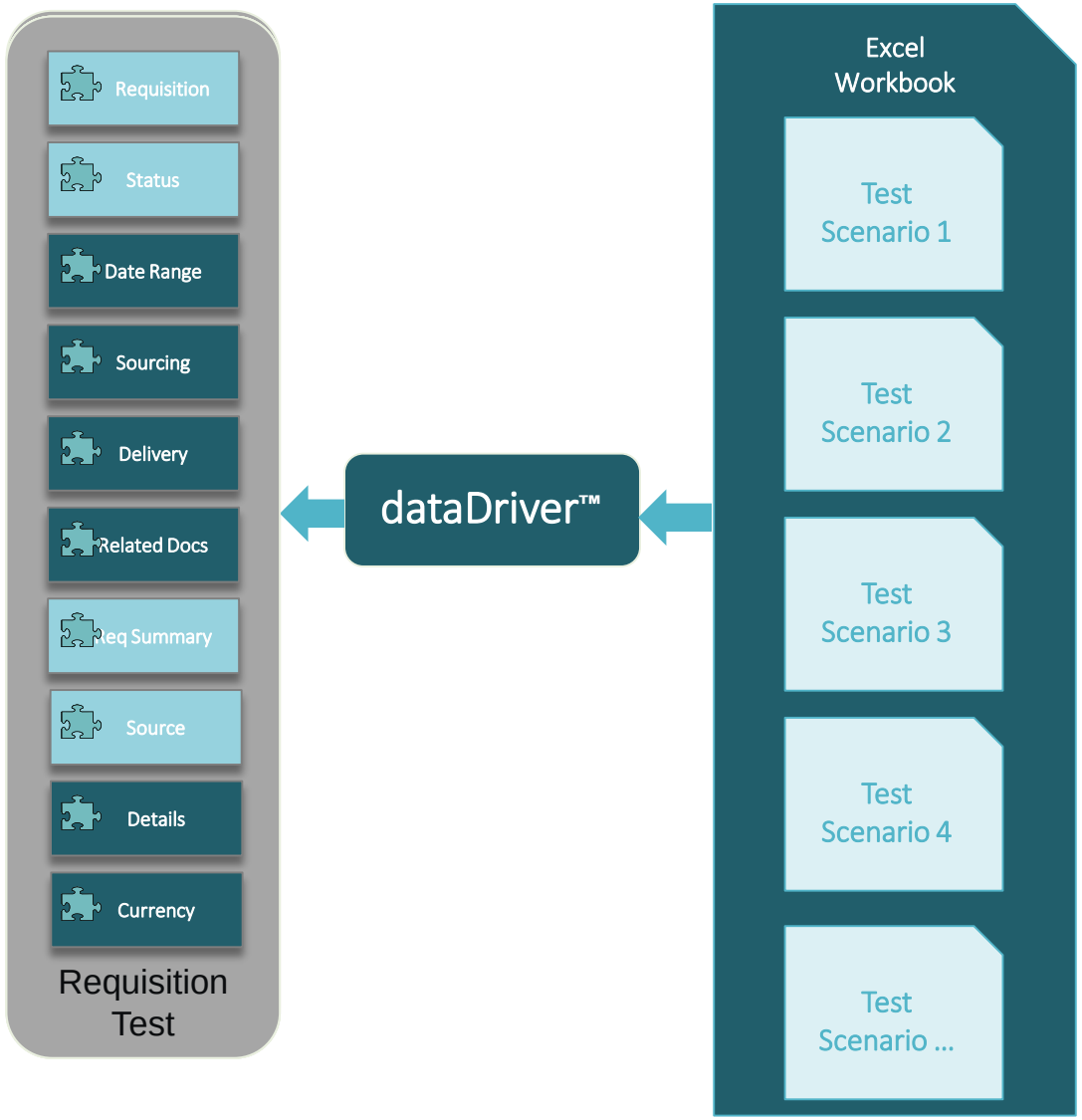
Data Driven Automated Solution





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Visibility and Control in the QA Process

	Tests Planned	Tests Executed	Percent Tests Executed	Tests Passed	Percent of Executed Tests Passed	Percent of Executed Tests Failed	Percent of Planned Tests Passed
TOTAL	5514	5306	96.23%	5222	98.42%	1.58%	94.70%

- Automating “Meaningful Use” gives confidence in product quality
- Regression test sets build over each sprint and release
- With test automation you can measure the time to release savings
- Measure efficiency of QA teams by their velocity and defect backlog

Step 5: Identify the Business Case

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Cost Justification

Accelerate Time to Value

- Faster Time to Test

- Faster Mean Time to Repair

- Quicker Time to Market

Reduce Costs

- Fewer Resources

- Minimize Missed Market Opportunity

- Leverage Current Tools and Team

Ensure Higher Quality

- Reduce issues "escaped" into production

- Maintain broader test coverage to minimize risk

- Higher Customer Retention

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Customer Testimonial

"Regression testing took a team of almost 20 people over 12 weeks to run manual tests. Perhaps even more damaging was the need for significant business support, which pulled high-value employees away from their daily roles and responsibilities."

"Tests that took us 12 weeks using manual methods are now estimated to run end-to-end in 2 to 3 days, and that's with a 2-person team. "

Global Pharmaceutical and Biotech manufacturing and development organization

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Customer Testimonial

"We have measured a 35% time savings when developing tests with 25% reuse of components."

"It was a very fast transition from training to the point where we were implementing tests on our own with TurnKey."

Fortune 500 Health Care Services Company

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Questions

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