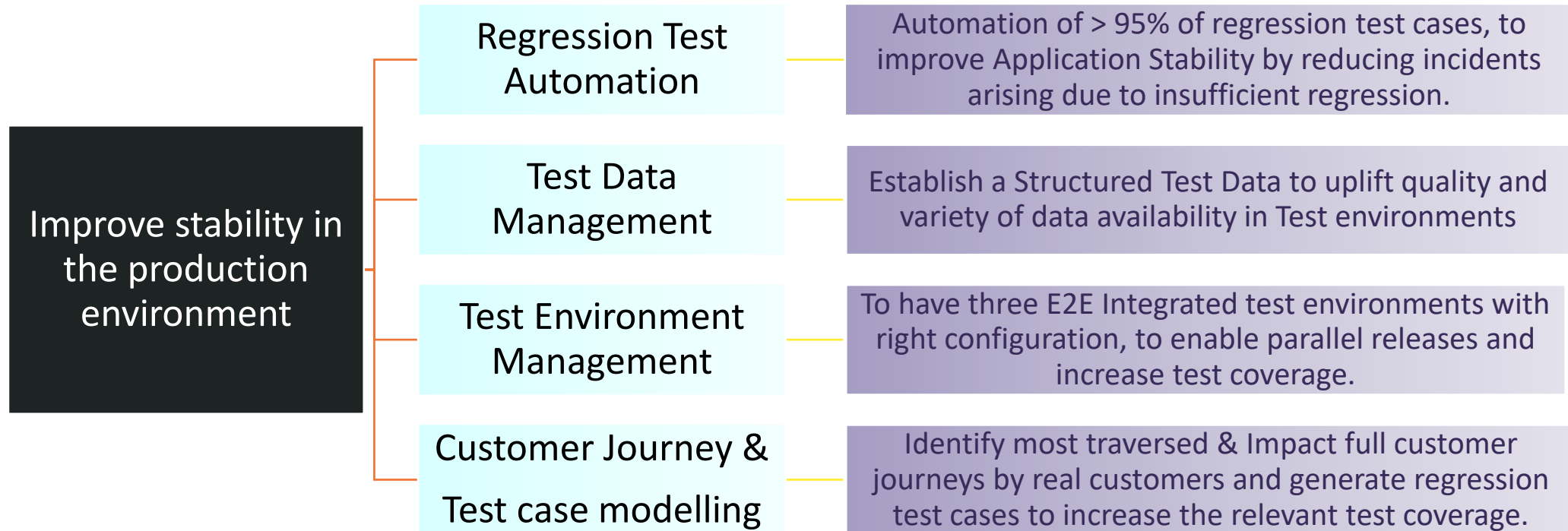# TDC Energize Regression Test Automation Case study

Program Context

TCS has been a strategic QA partner to TDC for past 10 Years and has traversed the path along with TDC in providing end to end Enterprise test services to multiple programs executed by TDC.

Improve stability in the production environment

Regression Test Automation	Automation of > 95% of regression test cases, to improve Application Stability by reducing incidents arising due to insufficient regression.
Test Data Management	Establish a Structured Test Data to uplift quality and variety of data availability in Test environments
Test Environment Management	To have three E2E Integrated test environments with right configuration, to enable parallel releases and increase test coverage.
Customer Journey & Test case modelling	Identify most traversed & Impact full customer journeys by real customers and generate regression test cases to increase the relevant test coverage.

✓ RTA program focused on automating **47 critical applications** covering **3000+ test cases** and **350+ E2E scenarios** to achieve enhanced test coverage , productivity and efficiency

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Problem Statement

✓ High production incident and Less regression cycle in each release

✓ Based on TCS analysis , 48 Applications contribute to 93% of the production application Incidents and 99% of Pre-Prod Defects . 10 Applications contribute 40% of the production incidents out of which 20% is code, configuration and test data related.
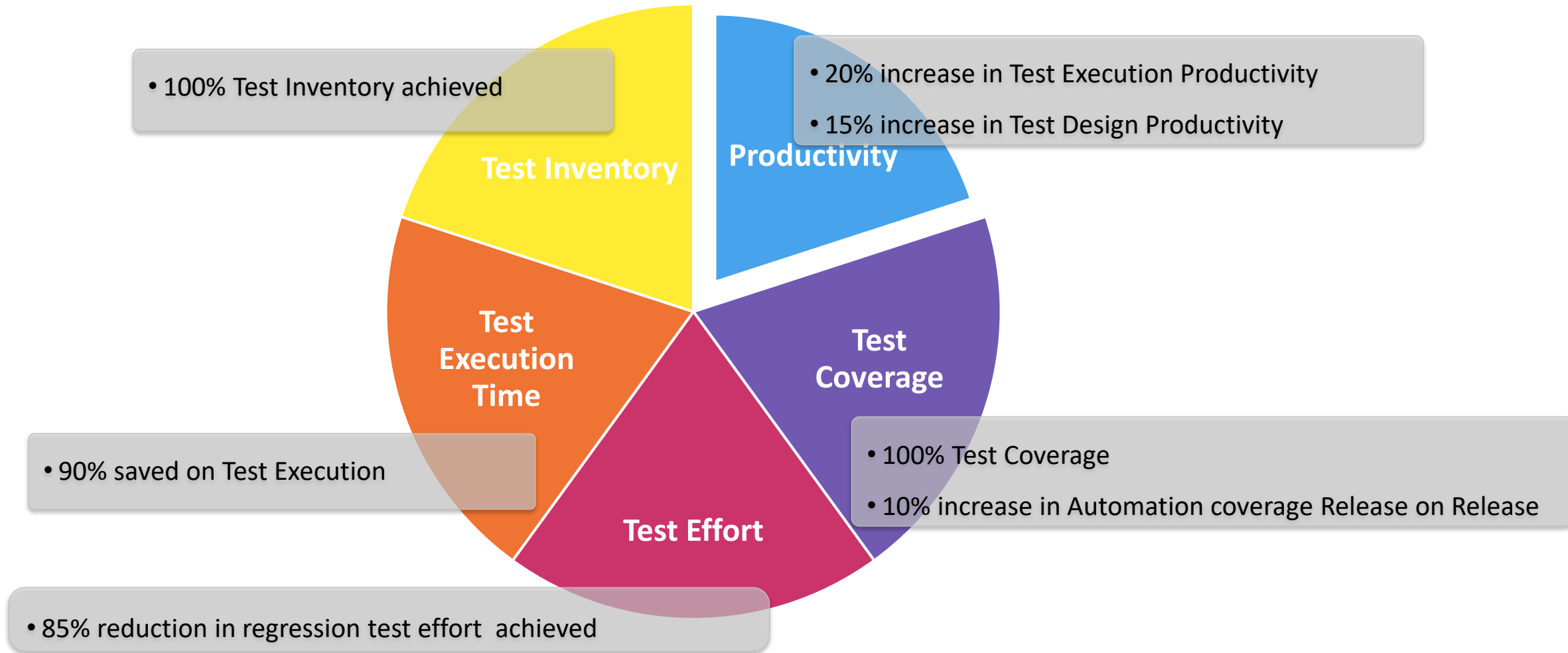
TCS Proposition : Automation of Regression and End-End Test Cases for 47 Applications

Outcome : Improvement in Application Stability by potential reduction of Code/Config incidents arising due to regression coverage
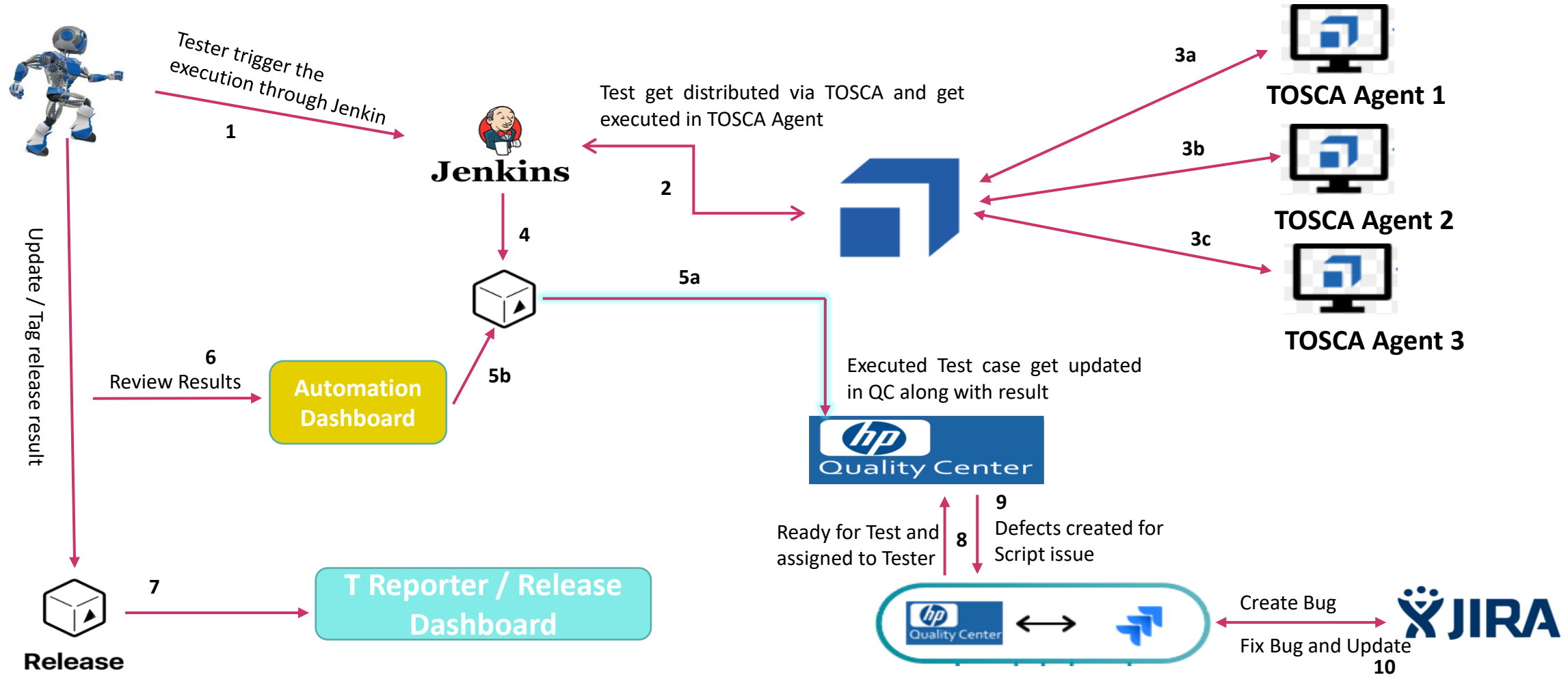
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TCS Approach

- ✓ As part of engagement 3 step activities were planned – Test Inventory Build & Refactoring, Maximize Regression Test Automation, Test Data Quality Uplift

- ✓ 47 critical applications contributing to the maximum number of production incidents are selected for the program and they are categorized into 10 sprints. Applications within sprints is selected in a manner that each sprint has similar volume and complexity

- ✓ Based on customer agreement script less tool **TOSCA** was used for automation

- ✓ **Test Inventory Build & Refactoring**
  - For applications having test inventory perform refactoring to improve test coverage and build for those applications without test inventory
  - Test Inventory will be built with the end-to-end value chain driven approach
- ✓ **Maximize Regression Test Automation**
  - Build/Enhance automation scripts for all 48 applications using existing automation frameworks with end to end value chain view
- ✓ **Test Data Quality Uplift**
  - Build test data to support the automation scripting and execution

- ✓ Program will be delivered in an iterative manner using Agile methodology in 10 sprints

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Result Achieved

- 100% Test Inventory achieved

Test Inventory

Productivity
- 20% increase in Test Execution Productivity
- 15% increase in Test Design Productivity

Test Execution Time

Test Coverage
- 100% Test Coverage
- 10% increase in Automation coverage Release on Release

- 90% saved on Test Execution

Test Effort

- 85% reduction in regression test effort achieved

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Best Practices

E2E Automation Setup was build to achieve 100% automation and parallel test execution

Tester trigger the execution through Jenkin

1

Jenkins

Test get distributed via TOSCA and get executed in TOSCA Agent

2

3a TOSCA Agent 1

3b TOSCA Agent 2

3c TOSCA Agent 3

4

5a

5b

Update / Tag release result

6 Review Results

Automation Dashboard

Executed Test case get updated in QC along with result

hp Quality Center

9 Defects created for Script issue

Ready for Test and assigned to Tester

8

7 **T Reporter / Release Dashboard**

Release

hp Quality Center ↔

Create Bug

Fix Bug and Update

10

JIRA

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Key Differentiators

Faster Delivery with Quality

- ✓ TCS presence in Domain teams and QA department helped to align automation deliveries to Release Calendar thereby aiming at optimal benefit realization
- ✓ TCS experience in tools like TOSCA ,JIRA and ALM

TCS E2E Presence

- ✓ TCS to leverage its incumbent knowledge across various IT and Operations team to do this analysis and perform course correction, if any, during the engagement

TCS Experience in TDM

- ✓ With its end to end application knowledge TCS Test Center have been catering to test data needs for all critical projects, release regression
- ✓ Several tools have been created to manage test data like SIM Reservation tool, Copper address management

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Thank you

Video Testimonial from Quality Head of Nuuday published on TCS.com

External Reviews provided by Customer on TCS QA Capabilities

5/5 Customer Rating which helped TCS to boost overall Score and jump a quadrant above in gartner ratings

Assesment Score received for TCS Nuuday QA team on TOSCA Implementation

8/10 Assesment score for TCS Nuuday QA team

Nuuday Powers Ahead in the Quality Stakes

Lars Burmann, Director, Head of Department (Test & Release), Nuuday, a subsidiary of TDC, talks about how TCS helped modernize their QE programs, helping the Danish telecom giant ace its quality journey.

LARS BURMANN
DIRECTOR, HEAD OF DEPARTMENT (TEST & RELEASE) NUUDAY

Customer Video Testimonial Reference to TCS partnership :
https://www.tcs.com/nuuday-tdc-denmark-transformational-qe-programs

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