



Predictable Quality through Independent Testing

Quality & Test Consulting - Testing Business Unit

How TCG brings it all together: Test Strategy



Business Goals & Quality Objectives

Directing

Risk Management

Change Management

Financial Management

Metrics & Reporting

Operational

Governance

Issue/Escalate

Delivery

Estimation

Planning

Configuration

Incident

Versioning

Metrics

Standards/
Guidelines

Test Strategy

Estimation & Planning

Environment

Test Management Tools

Automation Framework

Test Case Design & Development

Regression Approach

Test Reporting

Performance

Security

Usability



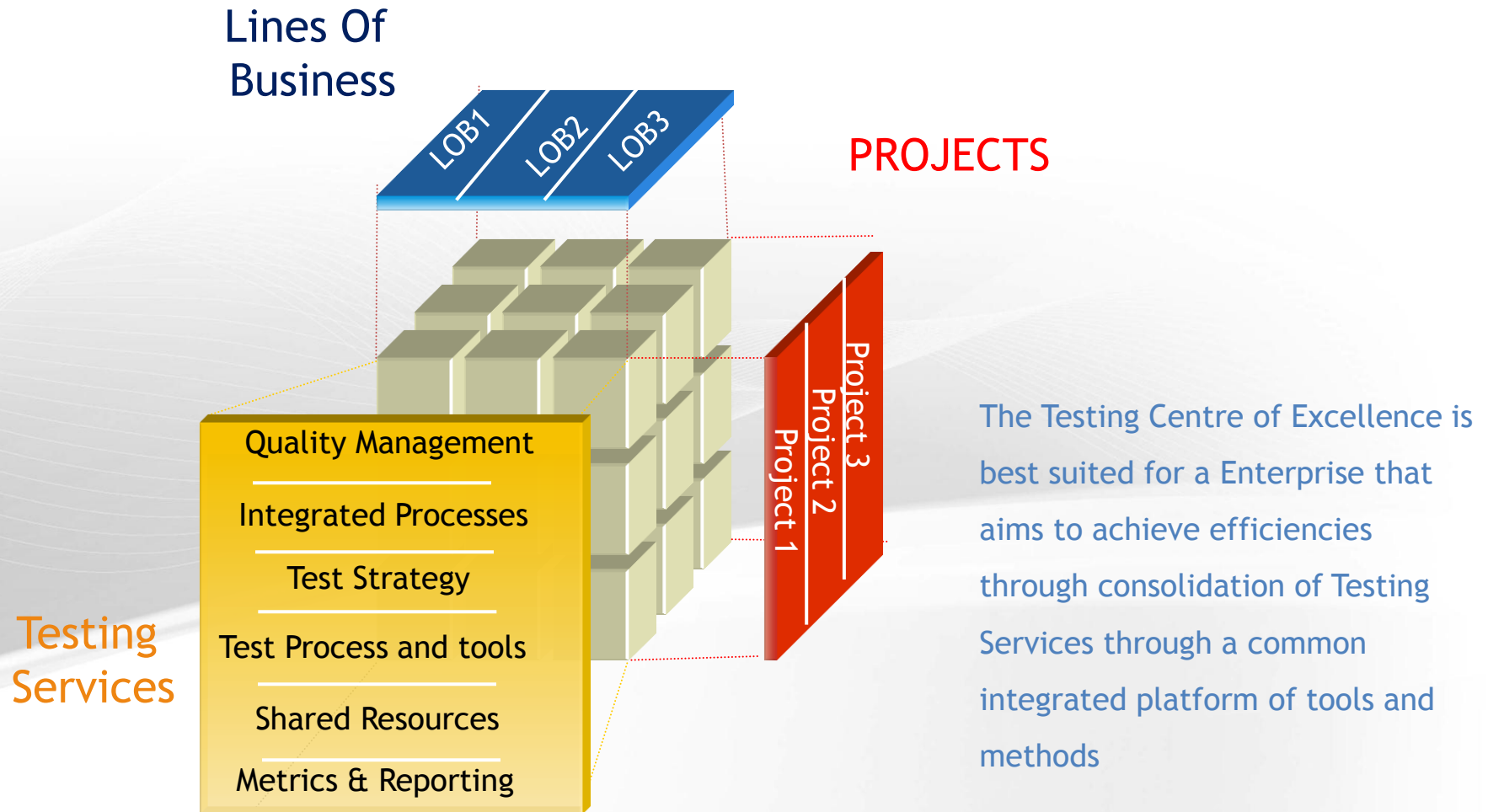
Objectives:

- Enable consistent execution to produce reliable, predictable level of quality
- Maximizing the value of investments in the delivery of software products
- Enable leadership to objectively measure the success and continuous benefits from the investments in quality
- Tailored incremental improvement plan to ensure continued realization of benefits

Benefits:

- Quantified risk & impacts to quality & testing
- Accelerated realization of efficiencies & optimized resources
- Quantified, measurable and actionable results

...for effective realization of business benefits for the IT





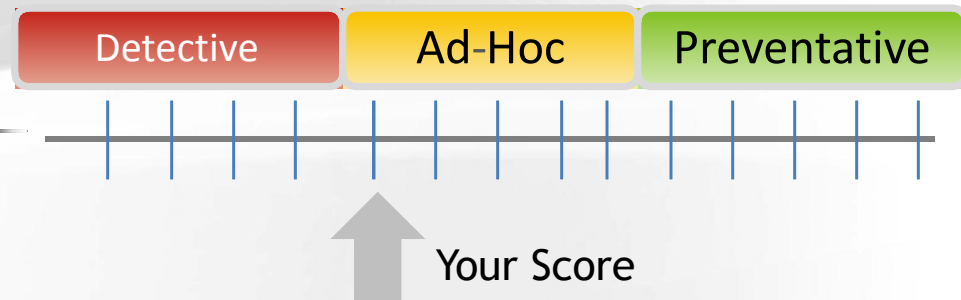
Requirements Analysis

Sample Questions:

- Do you capture as many highlevel statements that we can within a short period of time and then begin development?
- Do you employ user stories. Timebox the initial analysis work and then grow the story list while developing the solution?
- Do you develop a comprehensive list of requirements and as much detail as we possibly can before committing to development?

- Business Responsiveness
- Collaboration & Communication
- Project Management
- Governance
- Development Practices
- Build & Configuration Management
- Testing & Quality Control

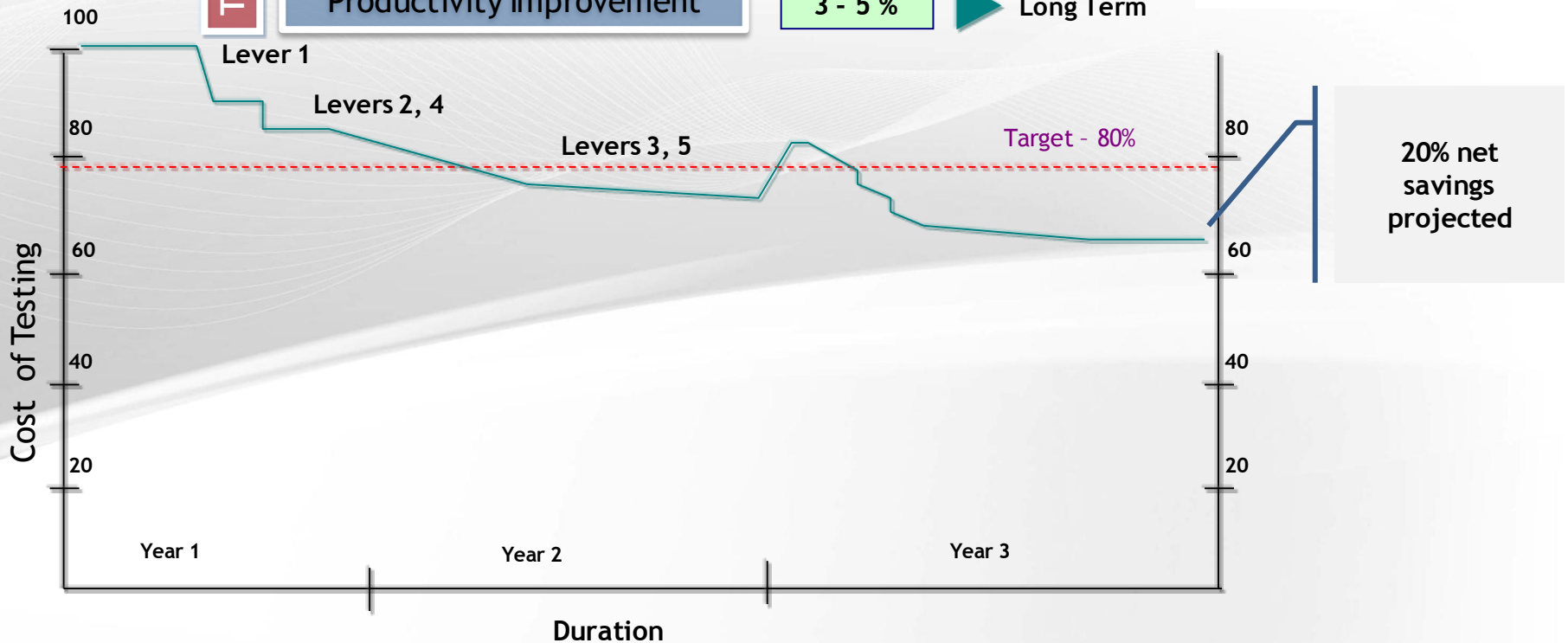
Assessment: Overall Profile



Incremental Improvement Plan: What levers to move



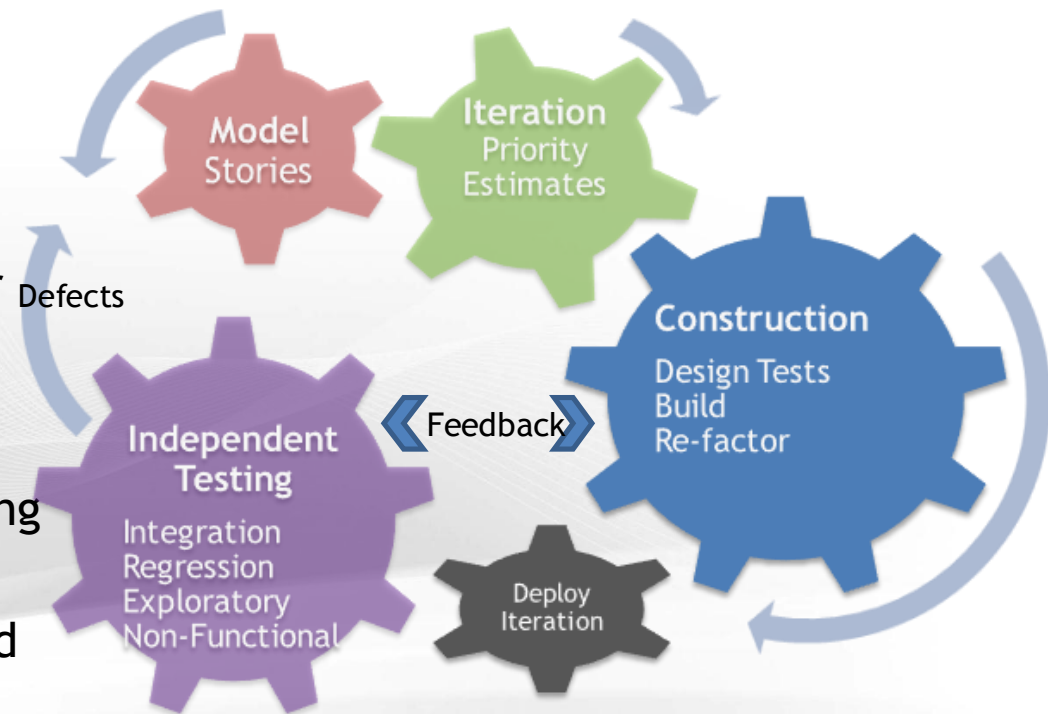
Transformation Lever	Impact	Timeline
Process Improvements	~10 - 15%	Short Term
Tools Rationalization	~5 - 6%	Short Term
Resource Optimization	8 - 10 %	Mid-Term
Test Automation	~20 - 30%	Mid Term
Productivity Improvement	3 - 5 %	Long Term

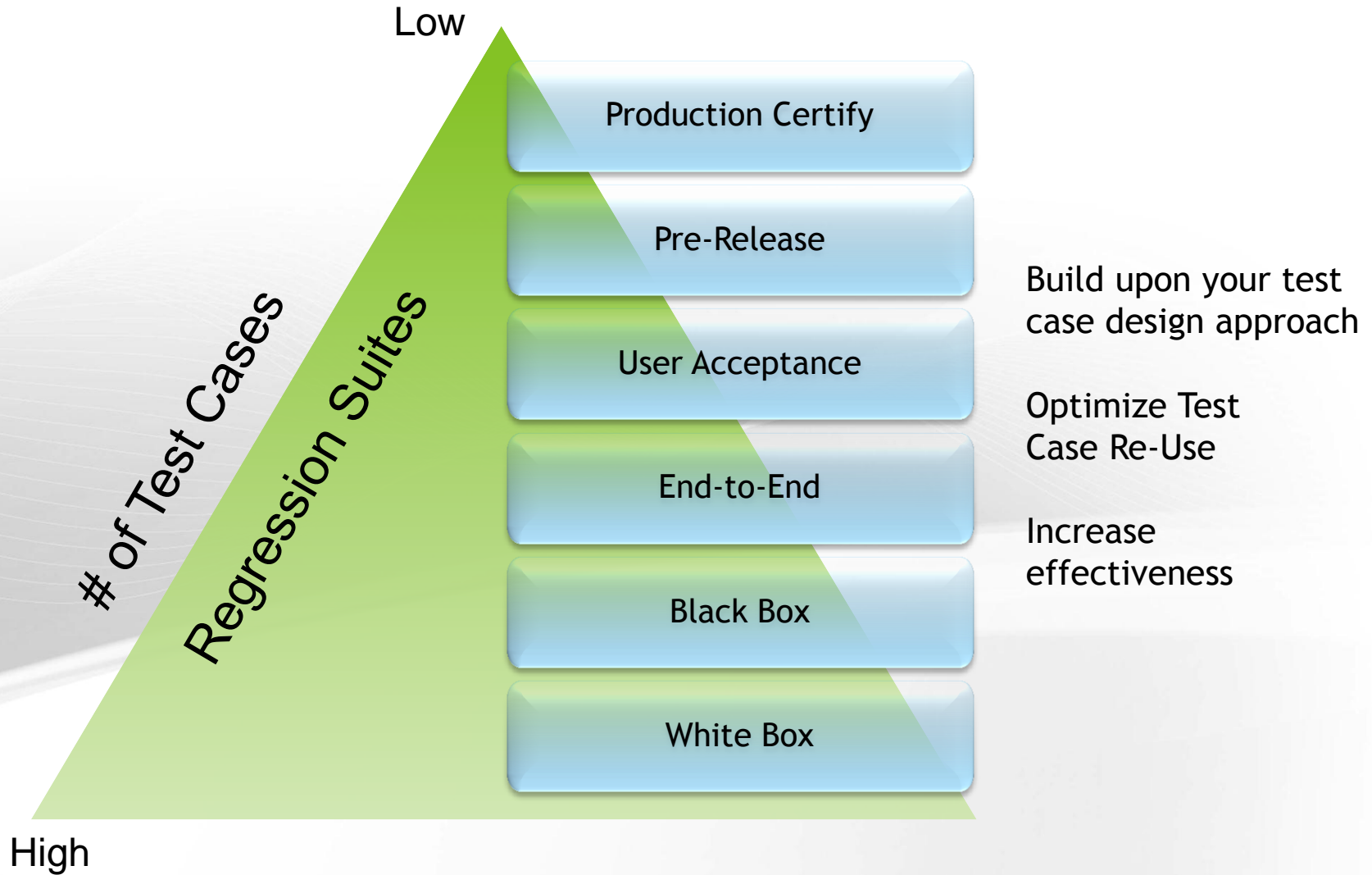


Good Practices for Agile Testing

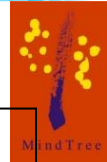


- Priority driven approach to testing will reduce waste and increase test effectiveness & efficiency
- Model stories with entire team
- Test Early & Integrate Often
- Encourage a test-first approach for development.
- Testing starts in construction
 - Testing the iteration and testing the specification(s)
 - Testing integration, end-to-end scenarios, regression, non-functional, exploratory, etc...
- Advance QA/Dev Interlock-pairing for critical business processes



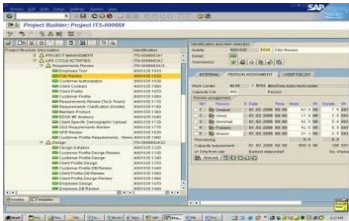


Delivery Enablers & Accelerators



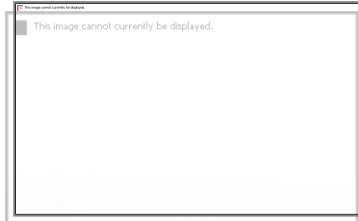
Tools used in Delivery Lifecycle

Project Planning Tools

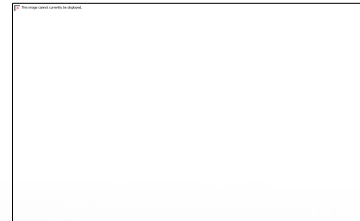


MPower - Project planning

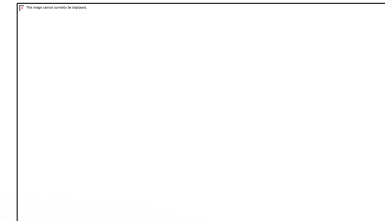
Project Tracking and Reporting



Monitoring Dashboard



MPower - Resource and effort tracking



ProTrack - Schedule tracking

Test Management and Defect Tracking



Testlink - Test management



RADAR

Code Quality - Analysis tool



CodeX Ray - Static code analysis

Tools used for Knowledge Management



ProcessNet



LearningBee



KnowledgeNet



Konnect - Documents Sharing





Business Situation

Project Estimation of Effort & Duration have low confidence

Requirements are not prioritized, ambiguous and with multiple objectives.

Inconsistent Test Management Processes and disparate tool usage

Limited deliverables review

Impacts to downstream systems not anticipated or recognized to late

Configuration issues delay test preparation & test bed creation

Weak Code/Source Management creates test delays and wasted effort

Formal QA start date rarely attained.

Controlled testing usually delayed by weeks

Performance issues usually found late in delivery process

Scope removed late in QA cycle due to defects

Business Impacts

Initial estimation techniques do not yield a valid representation of eventual effort.

Feature/Functions are removed late in the delivery process

Necessitates assumptions to made on the part of analysts. Missed business features due to ambiguity that yields low market adoption.

Poor designs requires increased on going maintenance costs and increases technical debt.

Testing resources are bottlenecked by decreased time and increased instability.

Promised but not delivered features reduces sales revenue

Product is not reliable in the marketplace and reduces positive image of company



MindTree Solutions

Verify effective Governance (project direction) is able to effectively mitigate business risks

Validate managing procedures are efficient and accurate in reporting status, risks, impacts and mitigation plans.

Check-Points Gate (entry/exit criteria) established to ensure success criterion can be attained against plan

Standardize project delivery methodologies

Standardize test management procedures and tools

Establish metrics (with thresholds & targets) to provide early warning indicators

Re-Use and build upon test case designs and user scenarios

Establish process and then automate

Design for application performance and verify throughout

Business Benefits

Objective, comprehensive, timely data on the developed software enabling you to:

- Know the real project progress
- Reveal problems (e.g., divergence from the schedule, budget, planned go-to-market time)
- Timely mitigation

Proper commitment of vendor's management and development team to your project

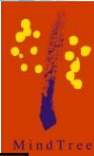
Strong motivation for the vendor to make realistic project estimations, follow proper project governance and controls

Substantial decrease of risks (e.g., unrealized cost reduction, unrealized quality promises) in outsourcing software development projects

Independent quality assessment in discussions and issues with vendors to document service agreement levels & objectives (if necessary)



Customer	Testing challenges	Solution
	<ul style="list-style-type: none"> •Regression Testing Challenges: <ul style="list-style-type: none"> •Inadequate test regression coverage of web services • Increasing rate of production issues 	<ul style="list-style-type: none"> •Re-designed test case meta data (e.g. priority, severity, category etc.).
	<ul style="list-style-type: none"> •Inadequate Traceability: <ul style="list-style-type: none"> •Lack of traceability between requirement and test cases/scenarios •Complete manual suite executed for every release/hot-fix/CMR 	<ul style="list-style-type: none"> •Created end to end traceability matrix for requirement mapping. •Designed “XSLT Dependency Tool” to provide granular code level dependency
	<ul style="list-style-type: none"> •Lack of Automation: <ul style="list-style-type: none"> •Overall test execution duration very high •Manual execution duration impacts release cycle 	<ul style="list-style-type: none"> •Implemented complete web-service regression testing automation harness using HP Service Test
	<ul style="list-style-type: none"> •Ineffective Governance and Change Management Process: <ul style="list-style-type: none"> •Inadequate Risk/Impact assessments and mitigation plans 	<ul style="list-style-type: none"> •Defined suitable SOA governance workflow to improve efficiency of change management •Created accelerators to aid in proactive risk / impact assessment



Customer	Testing challenges	Solution
	<ul style="list-style-type: none"> •Comprehensive Test Strategy: <ul style="list-style-type: none"> •Designing complete test strategy including integration testing, system testing and UAT •Mapping end-to-end test strategy to agile development process 	<ul style="list-style-type: none"> •Test strategy solution included Process, and Governance mechanisms derived from MindTest •Testing best practices devised to address the major challenges in agile mode of operation.
	<ul style="list-style-type: none"> •Multi-tiered Testing: <ul style="list-style-type: none"> •Front-end infrastructure testing included testing graphics display drivers (Involving solution at Ring 0,1 and 2 layers) •Server side testing complexity included distributed “cloud based” implementation involving complex handshaking protocol 	<ul style="list-style-type: none"> • Creation of innovative and non-conventional test techniques for display driver requirements • Detailed break down of business workflows created based on exhaustive discussion with business stakeholders. This enabled the design of effective server side testing approach
	<ul style="list-style-type: none"> •Complex non-functional Testing needs: <ul style="list-style-type: none"> •Specialized non-functional testing requirements and Automation Testing requirements 	<ul style="list-style-type: none"> •Detailed approach designed for Security/Penetration Tests, User Experience, Performance, Installation, Compatibility and Automation @ GUI graphic driver level



Customer	Testing challenges	Solution
	<ul style="list-style-type: none"> •High Regression Testing Efforts <ul style="list-style-type: none"> •Inadequate test case metadata and lack of end-to-end traceability •Increased administrative efforts in test management •Insufficient automation coverage resulting in thousands of hours in manual regression efforts 	<ul style="list-style-type: none"> •Re-designed test cases based on orthogonal array testing. •Enhanced test meta-data for easy test selection(e.g. priority, severity, category etc.)
	<ul style="list-style-type: none"> •Automation Problems: <ul style="list-style-type: none"> •Multiple automation frameworks spread across various applications •Automation maintenance efforts very high 	<ul style="list-style-type: none"> •Common Automation Framework leveraged across various titles •Externalizing test data and configuration to reduce maintenance efforts •Implementing detailed logging, error tracing and reporting to reduce defect analysis time
	<ul style="list-style-type: none"> •Process Related Challenges: <ul style="list-style-type: none"> •Existing test effort/test case estimation methodology ineffective. •Disparate tools and processes 	<ul style="list-style-type: none"> •Consolidating test management tools and creating test accelerators to manage tests •Refining overall test estimation model and creating automated estimation templates



Customers

Business Situation

Challenges

- Quicker response time needed for our products and services
- Profit margins are being squeezed
- Production outages impacting revenue and service level commitments
- Customers/End Users Satisfaction issues are negatively affecting brand image
- Need scalability with controlled costs
- Disparate testing methodologies, tools and processes

- Lack of skills and knowledge in new delivery
- Processes to manage agile are lagging
- Frequent change and design changes during release
- Testing did not how to effectively change for agile
- Bridging gaps of distributed teams
- Massive test case re -write and regression needed
Constrained budgets (resource, tools)



Proven

- Track record of Successful Consulting Engagements
- Customizable solutions
- Quantifiable Returns

Objective

- Focus on business and quality goals balanced by risk
- Assessments & GAPs will be objective
- Recommendations will be actionable

Measurable Benefits

- Increased Application Performance, Reliability and Predictability
- Increased Customer Satisfaction
- Reduced legal exposure



Our Mission

Successful Customers

Happy People

Innovative Solutions

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