TESTING CENTER OF EXCELLENCE (TCoE) OVERVIEW

At XTIVIA, we partner with clients to achieve excellence through the synergy of people, processes, and technology. Our strategies and solutions have enabled clients for the Agile Enterprise.

Our customers recognize the quality of our deliverables and solutions. To help XTIVIA achieve a consistently high level of excellence, our team of qualified professionals has implemented a Testing Center of Excellence (TCoE). The creation of our TCoE evolved through streamlining and enforcing sound testing strategies and best practices executed by highly experienced individuals.

What is a TCoE?

TCoE is a competency center we have built by standardizing test processes, implementing best practices, and using innovative tools to ensure cost-effective and high-quality delivery with a highly skilled and experienced team of professionals.
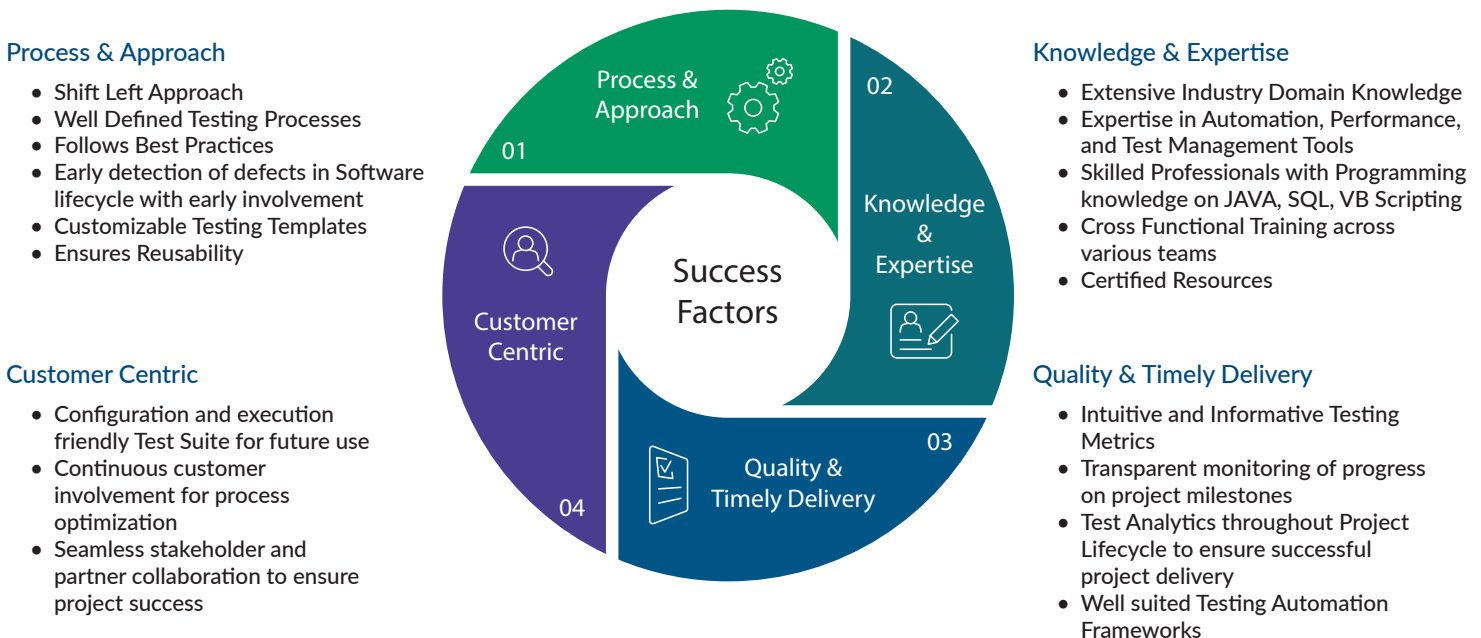
Why is a TCoE important?

A TCoE delivers several benefits as follows.

- **Optimize Delivery**: automating repetitive tasks and the use of templates to help reduce test execution time
- **Help Increase Quality**: use of metrics to measure efficiency and guidelines for our team members to follow
- **Reduce Expenses**: project cost reduction occurs due to task optimization

SUCCESS FACTORS

XTIVIA's TCoE focuses on a set of tried and true success factors that have helped us make our client initiatives not only successful but exceed their desired goals. We have a strategic focus for continuous improvement on four key aspects: Process, Knowledge, Quality, and Customer Relationship.

Process & Approach

- Shift Left Approach
- Well Defined Testing Processes
- Follows Best Practices
- Early detection of defects in Software lifecycle with early involvement
- Customizable Testing Templates
- Ensures Reusability

Customer Centric

- Configuration and execution friendly Test Suite for future use
- Continuous customer involvement for process optimization
- Seamless stakeholder and partner collaboration to ensure project success

Success Factors

- 01 Process & Approach
- 02 Knowledge & Expertise
- 03 Quality & Timely Delivery
- 04 Customer Centric

Knowledge & Expertise

- Extensive Industry Domain Knowledge
- Expertise in Automation, Performance, and Test Management Tools
- Skilled Professionals with Programming knowledge on JAVA, SQL, VB Scripting
- Cross Functional Training across various teams
- Certified Resources

Quality & Timely Delivery

- Intuitive and Informative Testing Metrics
- Transparent monitoring of progress on project milestones
- Test Analytics throughout Project Lifecycle to ensure successful project delivery
- Well suited Testing Automation Frameworks

SERVICE OFFERINGS & EXPERTISE

XTIVIA's Test Center of Excellence has extensive industry experience in providing Testing solutions to various partners. The testing team's expertise spans multiple technologies through different tiers of software architecture. XTIVIA's TCoE combines a deep understanding of industry best practices with knowledge in providing various software testing services to offer an end-to-end solution.

SERVICE OFFERING				
Performance Testing	Integration Testing	Security Testing	System Testing	Unit Testing
Compatibility & Configuration	Interface Testing	Acceptance Testing	DWH Testing	SOA/Web Services Testing
Post Production Support	Functional Testing	BPT Testing	Usability Testing	Regression Testing

EXPERTISE

- SOA & Middleware Testing
- BPM Solutions
- Data Warehousing & ETL
- Business Intelligence
- Master Data Management
- Composite Solutions
- Multi-Channel Solutions
- Performance Testing
- API Testing

TEAM MEMBERS AND CERTIFICATIONS

XTIVIA's valued team members form our TCoE. Our professional team is well-versed in many areas of testing, certified in various tools, and has deep experience gained from working on projects following different methodologies.

- Average years of experience: 8+ years
- Experience in various SDLC models, with extensive experience on Waterfall and Agile
- Well-versed in testing different software solutions
- Certifications: QA resources have certifications in various domains, testing tools, and methodologies
- Experience in various industry domains: Insurance, Retail, Banking, Rental, Telecom, and Finance
- Expertise in a wide range of open source and commercial Automation and Test Management tools

ENGAGEMENT MODEL

XTIVIA offers flexible engagement models that are customizable to suit any business needs. Companies face many challenges on business priorities, team dynamics, and budgetary constraints. To ensure successful project delivery, they need a personalized engagement approach that meets the requirements on various levels. Clients can choose from the different engagement models described below or take a tailored hybrid approach:

XTIVIA Test Center of Excellence Engagement Model			
	Project Based	**Managed**	**Consulting/Staffing**
Model	Project-based testing with agreed deliverables or resources.	Partnership model, where XTIVIA is responsible for deliverables working in collaboration with the client	XTIVIA Resources work under client direction and supervision
Applicability	Immediate project testing requirements to be satisfied	Requires large volume of regularly testing where there are advantages to the client to reduce monthly spend on QA or overall quality cost.	Immediate resources are needed to expand the testing team or to deliver a project
Location & Work Timings	The client coordination team works on-site/client business hours and the remaining team works remotely/partial overlap hours	The client coordination team works on-site/client hours and the remaining team works remotely/partial overlap hours	On-site, Off-site, and Offshore (work timings dependent on engagement needs)
Client Governance	Low to Medium	Low	High
Benefits	Predictable and continuity of a dedicated team	Efficient and cost-effective solution for complex, large projects	Flexible for changes in project scope and transparency in deliverables. Highly flexible to ramp up or ramp down resources
Pricing Structure	Fixed Bid or Time & Material based on scope and project plan clarity	Fixed Bid and/or Time & Material	Time & Material
Best suited for	Projects with good clarity and precision on what needs to be accomplished	Complex Testing components and involves various several stakeholders, resources, and expertise the customer may not have	Long term projects with less vision on final requirements

TESTING PHASES

The Testing Lifecycle has various activities to identify and perform for Testing. They are carried out systematically in four different phases to achieve specific goals and deliverables planned for each stage.

Analysis	Test Design	Test Execution	Closure

1. Analysis

- Understand Business-/Technical-level Requirements of an end-to-end system through interaction and documents
- Analyze the systems involved (GUI, API, Messaging layer, Database, Data Warehouse) and identify the required types of testing
- Understand non-functional requirements
- Strategize and plan the Testing with selection and adaptation of Testing techniques
- Identify and coordinate to develop Stubs/Drivers
- *Deliverables: Test Plan, Test Strategy*

2. Test Design

- Author the Test Scenarios and Test Cases (Standards, Functionality, Data, Workflow)
- Prepare test cases for Integration Testing, End-to-End testing
- Prepare the non-functional test cases (performance, security, interoperability)
- Tool evaluation and Setup the Tool [Selenium, UFT, RPA UiPath, SOATest, SoapUI, JMeter]
- Setup Automation Framework and Prepare Test Suite
- *Deliverables: Test Specification Document, Test Cases, Configuration*
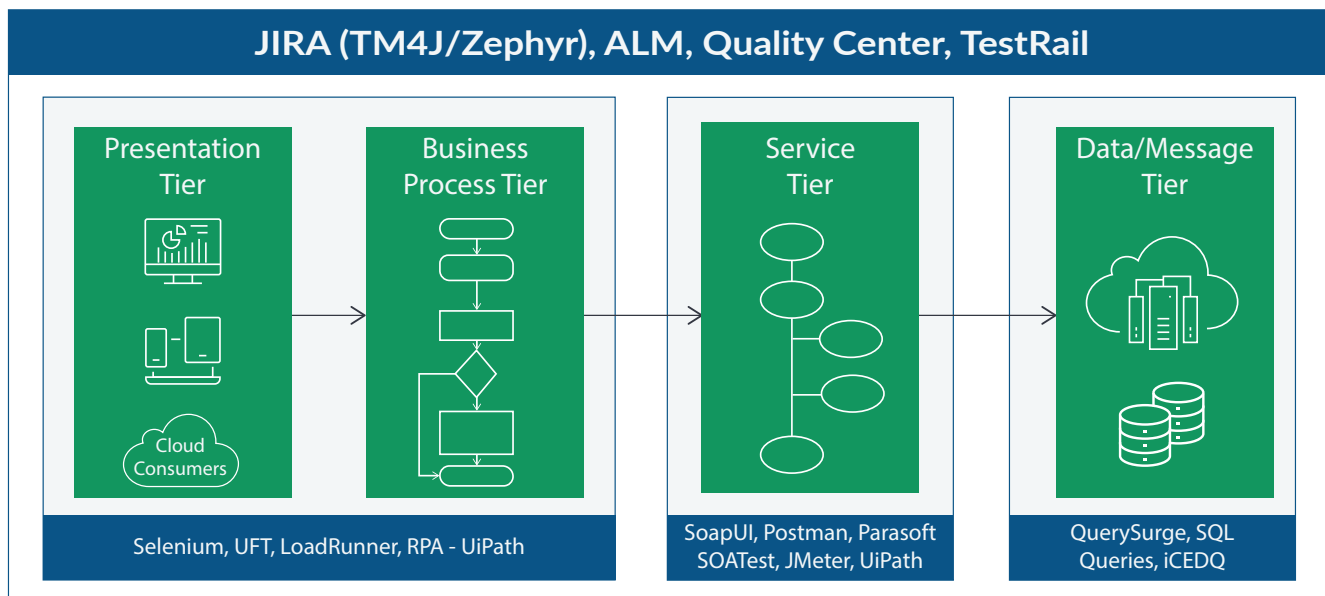
3. Test Execution

- Functional Testing is performed using both the manual and automation suites
- Non-functional testing is performed to test the Load and Operability requirements
- Integration Testing with Stubs or Drivers (in case consumers are not available)
- End-to-End Testing to ensure the data flow is smooth from source to target and to test the end-to-end functionality.
- Regression Testing to ensure the existing functionalities are not affected
- Defect Triage for root-cause and impact analysis
- Continuous Test Execution metrics
- *Deliverables: Weekly Status Reports, Defect Reports*

4. Closure

- Share Test Deliverables with client
- Confirm and document Acceptance
- Configuration and Training of Automation Test Suite for future Test execution
- Test Summary Report/Test Closure Report
- Document the lessons learned and best practices
- Support UAT activities
- Post-production support
- *Deliverables: Test Summary Report/ Test Closure Report, Testing Artifacts*

XTIVIA

END-TO-END TESTING APPROACH

XTIVIA's TCoE focus on end-to-end testing helps improve the quality of the software under test. The right tools and skills combined with a practical and optimized testing suite for different application layers result in an efficient testing solution. Functional and non-functional end-to-end testing is performed on Graphical User Interface, APIs, Messaging Layer, and Database based on the requirements of the application under test.

JIRA (TM4J/Zephyr), ALM, Quality Center, TestRail

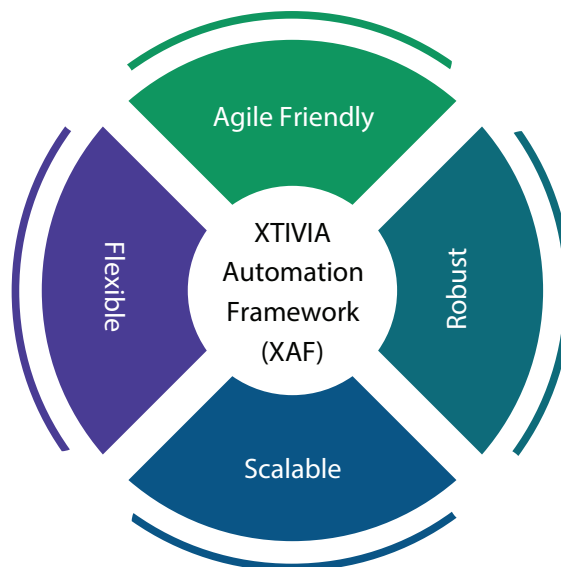| Presentation Tier	Business Process Tier	Service Tier	Data/Message Tier
Cloud Consumers			
Selenium, UFT, LoadRunner, RPA - UiPath		SoapUI, Postman, Parasoft SOATest, JMeter, UiPath	QuerySurge, SQL Queries, iCEDQ

XTIVIA AUTOMATION FRAMEWORK

XTIVIA Automation Framework (XAF) is a customized Automation Framework that aligns with most of the automation projects irrespective of the tool. XAF consists of processes and automation scripts that help achieve Test Automation easily and effectively, ensuring maximum reusability and optimization of code, resulting in reduced time and effort.

XTIVIA Automation Framework (XAF):

- Agile-Friendly – XAF allows quick feedback of automation scenarios for continuous Integration and Deployment
- Robust – It is a very reliable and fool-proof Framework with successful Testing Processes being followed
- Flexible and Scalable – The Framework is flexible and easily scalable to match every project's needs

  XAF is a one-time setup for any automation tool and has been successfully set up for widely-used automation tools like:

    - UFT
    - RPA - UiPath
    - Selenium

Further, XAF eases testing bottlenecks and delivers faster time-to-market applications, as well as reduces overall testing effort and expense.

Agile Friendly
Flexible
XTIVIA Automation Framework (XAF)
Robust
Scalable
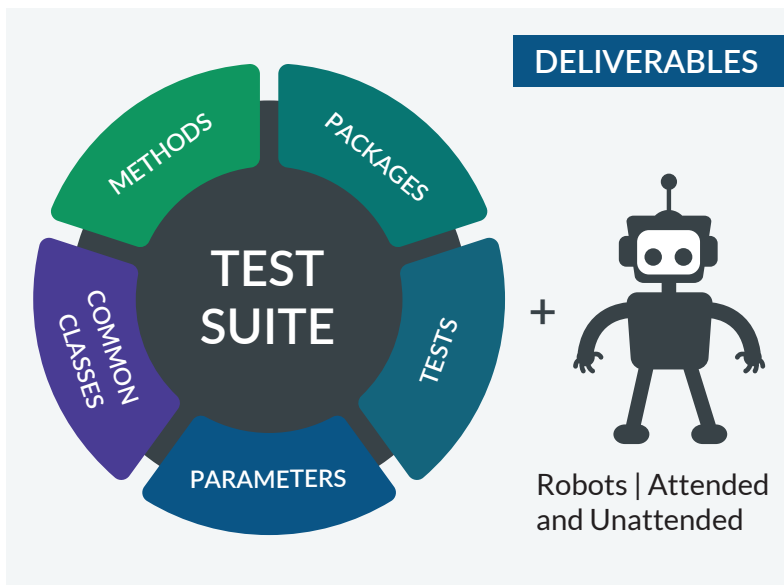
ROBOTIC PROCESS AUTOMATION CAPABILITIES

Robotic Process Automation (RPA) is an emerging business technology and is a complete solution for application integration, automating third-party applications, administrative IT tasks, and business IT processes. XTIVIA's in-house experts have strong expertise in the Robotic Process Automation – the UiPath tool. The XTIVIA Automation Framework has also been established for the UiPath tool as well.

RAPID ROI	ENHANCED PROCESSES	BETTER CUSTOMER EXPERIENCE	ELIMINATE REPEAT TIME WORK	IMPROVED SERVICE DELIVERY	ENHANCED ABILITY TO MANAGE

COST REDUCTION	INSIGHTS & ANALYTICS	NON-INVASIVE TECHNOLOGY	INCREASED COMPLIANCE	SCALABILITY & FLEXIBILITY

XTIVIA's TCoE builds Test Suites as well as Robots that can help the clients achieve faster results with the best customer experience.

Benefits of RPA to Clients:

- Accurate and Reliable
  - Less prone to errors with uniformity and consistency
  - Increase compliance
- Increased Productivity
  - Execution time is faster than manual approach
  - No coding required
- Cost-Cutting Technology
  - Increased turn-around time for reduced operational cost
  - Easy to configure, deploy, and maintain

DELIVERABLES

TEST SUITE

METHODS · PACKAGES · TESTS · PARAMETERS · COMMON CLASSES

+

Robots | Attended and Unattended

TESTING PRACTICE IMPLEMENTATION CAPABILITY

With XTIVIA's vast experience in testing and establishing a formal Testing Center of Excellence, we have gained the experience and knowledge necessary to help our clients optimize their existing testing practice or establish a brand-new testing practice. We are here to help, whether to institute processes, implement best practices, or train QA team members on QA standards and tools; we are here to help create a Testing Practice ideal for each client.

Gameplan

- Understand our client's Test Practice Goals
- Analyze the current state of the Testing Practice (if applicable)
- Analyze the current state of the development practice
- Provide recommendations and implementation roadmap for achieving Test Practice Goals
- Help establish Testing Practice

Deliverables

- Formal write-up with observations, recommendations, an executable plan for implementing Testing Practice
- Repository of Testing Templates
- Executable plans for creating a Testing Practice
- QA Processes that best fit the client
- QA Best Practices and guidelines for an efficient Testing Practice
- Create a Team Structure for the client to implement
- Recommendations on Testing Tools including Test Management and Automation Tools
- Any additional deliverables as required for the client

ABOUT XTIVIA

XTIVIA is a proven technology integration and innovation company known for delivering leading-edge technology solutions to our clients' specific requirements, regardless of project complexity. We bring next-level business operations to reality through Application Development, Business Intelligence, Data Warehousing, Database Support & Management, Enterprise Information Management, Digital Experience Solutions, and Enterprise Resource Planning. Our success stems from a demonstrated ability to deliver deep expertise via professional services, empowering clients to leverage their chosen technology successfully, competitively and profitably. XTIVIA has offices in Colorado, New York, New Jersey, Missouri, Texas, Virginia, and India.