

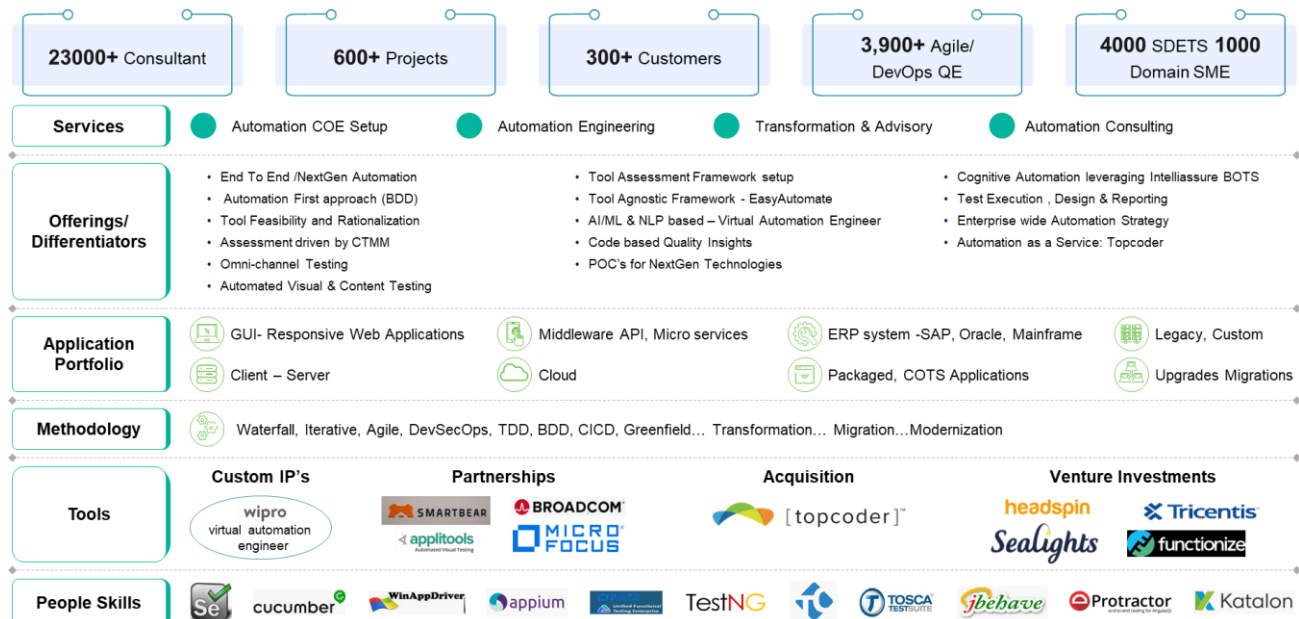


G-Cloud 14

Service Definition - Wipro Omni channel testing



Wipro's Test Automation Practice Overview



'Virtual Automation Engineer' is Wipro's proprietary next-gen IT Wellness platform consisting of persona based solution integrated with commercial tools to establish a smart quality ecosystem for our customers and accelerate testing across the quality lifecycle. Intelliassure is designed to improve predictability in application quality, accelerate releases and build a self-healing quality process leveraging Artificial intelligence and is built on Wipro's Cognitive Automation platform – Wipro HOLMES. Our proprietary platform is available in container based architecture and we have adopted hybrid deployment approach where some components are installed in customer environment and some remains in Cloud to achieve economies of scale while meeting security requirements.

Alliance, Partnerships & Venture investments

Wipro has well established relationships and alliances with leading QA tool vendors. In this regard, Wipro will be able to leverage these relationships to provide best value to Customers. Wipro also has an as-a-service model offering where tool licenses are bundled with services so that Customers does not have to spend time on additional negotiations with tool vendors and its tool investment can be converted into Opex.

Additionally, Wipro's venture fund has invested in next generation companies bringing niche and disruptive capabilities in Quality Assurance leveraging AI/ML. These include Tricentis, Headspin, Sealights and Functionize. All these can be integrated to establish an integrated IT Wellness platform for our customers which enable them in achieving Quality @ Speed improving efficiency of the testing process by 25-40% across customers. Wipro is open to usage of its proprietary tools by other service providers subject to appropriate contractual agreements to ensure its IP rights are protected.

Wipro's approach to automation

Customers often want to automate long-running, complex test cases which are time consuming to execute manually and often involve interaction with databases, APIs, mock data, communicate with third-party services and more. Maintenance of automation scripts accounts for a resource intensive activity and hampers achieving ROI as expected. Wipro's automation first approach involves setting up a framework that promotes a high level of modularity and reusability of functions with senior automation architects. This helps reduce maintenance efforts and promotes easier refactoring of scripts in case of changes to the application under test.

Wipro recommends an integrated automation framework which will cater to UI, API and DB test automation requirements at Customers. The framework layer will be tool agnostic so that any new tools in future can be easily integrated (plugNplay). The Automation framework will follow multi-layered approach - Core Framework Layer, Controller layer, Scripting, Integration and Reporting layers. Core framework layer will include Automation wrappers around selected tools, custom utilities to cover specific actions & validations and containerization for easy scalability. Controller layer will include orchestration, repository management, Log monitoring etc. The proposed automation framework will cater to different methodologies such as keyword driven, BDD, NLP. Reporting & Analytics layer will collect data from multiple sources via telemetry and store in data lake where data will be correlated, and dashboards will be generated with actionable insights. Integration layer will help in quick integration with existing Test Management, CI/CD and Version control tools so that information can be retrieved as well as pushed these tools in seamless way with minimal/no manual intervention. The proposed automation framework will leverage existing investment done by Customers in Automation (based upon evaluation) as well as bring new set of capabilities especially in AI/ML space. Wipro aims to democratize automation at Customers where all stakeholders in release process can perform his tasks through automation but without learning technology (read: programming) especially roles such as BA, Users. Wipro recommends baselining of the following metrics to measure and report the effectiveness of automated test suites vis-à-vis automation coverage, automation ROI, Test Automation Flakiness Index, Defect Density and Test Cycle time reduction to monitor success of automation.

Tooling Strategy

With a multitude of open source software available in the market, managing use of open source tools can be a difficult task for an organization. Wipro has standard operating procedures within the organization to evaluate fitment of open source tools from cybersecurity, data security and other threats. Wipro will leverage this knowledge base to recommend any new open source tools which need to be used for Customers and work with Customers security/architecture teams in getting them approved. We will share security certifications and internal tests e.g. pentest done by Wipro team with Customers security team so that they can make right informed decision on the open source tools.

Wipro generally recommends open source tools outside GPL/AGPL license due to their highly restrictive nature which may have other implications including financials. Any tools which may have financial impact, Wipro will work with Customers and provide a business case in order to get approval for its usage. Our proprietary platform also uses open source components, and it undergoes rigorous security checks by Wipro security team before it's allowed to be part of the solution. We also ensure timely upgrades of software versions especially related to security vulnerabilities. Additionally, we will share the list of all open source components with Customer's

security team, work with them in addressing any concerns and post their approval only the platform will be brought in Customer's network. In addition to Wipro's policies, every tool implemented at a customer location is also subject to customer's info security policies. This double walled check ensures that the tool does not pose a cybersecurity or confidentiality breach. Wipro also recommends all new updates/patches to software to be installed regularly which ensures protection from latest malware/security threats. Wipro can also offer cybersecurity certification service to Customers for all testing tools if required.

Agile/DevOps & Building Enterprise Agility

Wipro has dedicated DevOps COE with more than 50 Agile Coaches and consultants who have designed and led Agile and DevOps transformations across lines of businesses / enterprises. Backed by a team of 10,000+ DevOps Tooling SMEs, 2500+ Scrum Masters and 12,000+ Employees who are enabled to support clients globally. We have experience in implementing and managing DevOps for 60+ customers on various technology landscapes. We also focus in continuously building and enhancing our capabilities. Every year, we train over 2000+ members in various DevOps skills from foundation to expert level.

Wipro utilizes a set of methodologies and tools to systematically analyze and restructure the existing enterprise applications around continuous integration, continuous delivery and continuous deployment, release and change management, enable building next generation enterprise applications. Wipro provides a comprehensive end to end DevOps solution along with roadmap that can start to deliver tangible benefits in a few months. Our DevOps capabilities includes

- Process and Technology Maturity Assessment
- Solution & Improvements for Continuous Delivery (CI/CD/CM/CT)
- Environment provisioning and configuration
- Analytics, Dashboard, Collaboration services
- DevOps Academy and Trainings/Assessments
- DevOps Governance & Consulting, etc.,

Wipro uses Enterprise Agility where various parts of the enterprise work cohesively across multiple areas to enable a cultural transformation and a shift in mind-set. DevOps practices bring in Engineering Agility and effects change in the following areas:

- People/Culture - To ensure collaboration
- Training/Skilling - Reskilling individuals to multi skilled individuals
- Processes - Value stream mapping
- Tools & Technology - Adoption of strong engineering practices and automation.

Wipro has consistently delivered predictability in testing enabled through our '**Virtual Automation Engineer**' platform. Our focus is to "shift-left" the test delivery model via API orchestration backed by service virtualization. Our service virtualization CoE has helped many insurance customers by virtualizing integration points with 3rd party systems on-need basis. This has helped in shifting the integration testing process left (by not having to wait for the actual service to become available) and providing insights into critical issues ahead of time. Wipro's partnership with HeadSpin accelerates our digital and user experience testing along with other Wipro IP's, Crowd-sourcing and mobile testing practices help shift the testing focus left-wards.

Our testing engagements have seen approximately up-to 40% reduction in QA costs with up-to 30% improvement in speed-to-market enabled by our IP's and assets across the Policy management lifecycle.

Contact Us

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About Wipro Limited

Wipro Limited (NYSE: WIT, BSE: 507685, NSE: WIPRO) is a leading technology services and consulting company focused on building innovative solutions that address clients' most complex digital transformation needs. Leveraging our holistic portfolio of capabilities in consulting, design, engineering, and operations, we help clients realize their boldest ambitions and build future-ready, sustainable businesses. With 250,000 employees and business partners across more than 60 countries, we deliver on the promise of helping our clients, colleagues, and communities thrive in an ever-changing world.

