



Nitin Gupte

Quality Assurance Manager
at Milwaukee Tool

QUALITY at speed with Automation

Hear how Automation helped reducing Regression Testing from 4 weeks to 10 Days, and how CI/CD pipeline can help to achieve releasing apps and websites in less than 5 days.

AGENDA

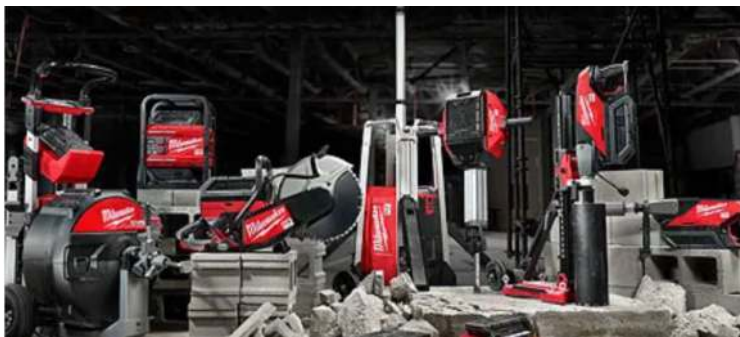
- Who is Nitin Gupte?
- About Milwaukee Tool
- What is **ONE-KEY™** ?
- Quality Assurance a **F.A.R.E** practice
- Scope for every Release
- Regression from 4 weeks to 10 days!
- QUALITY at Speed
- Regression from 10 days to 5 days!
- Q&A

Who is Nitin Gupte?

- Personal Info:
 - From Mumbai, India.
 - I will be celebrating my 25th Marriage Anniversary with my wife, Wrishali this year
 - Blessed with my daughter, Saloni, and my son, Vedant
 - I'm a big sci-fi and action movie fan
- Made it to Milwaukee in April 1996, to work at Compuware Corporation
- Worked at major companies
 - Harley Davidson (AS/400, Lotus Notes)
 - Kohler (SAP R/3)
 - Northwestern Mutual (Lotus Notes, QA)
 - Dentaquest (QA)
 - Dean Health Plan (QA)
 - FIS (QA, Release Management)
 - Toyota (Release Management)
- Currently working at Milwaukee Tool since September 2016!

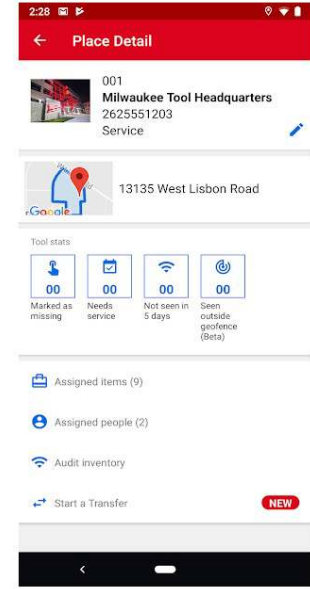
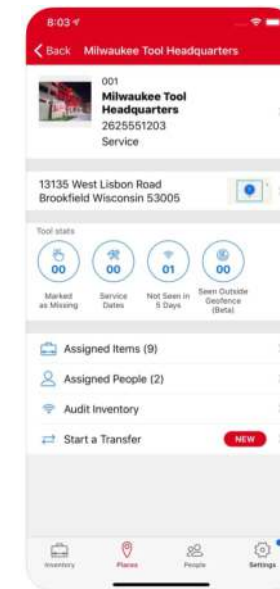
About Milwaukee Tool

- Company started in 1924
- Developing innovative solutions for professional construction users
 - M12™ and M18™ cordless systems
 - M18 FUEL™ products
 - MX FUEL™ products
 - Jobsite Lighting
 - Time-saving accessories
 - Innovative hand tool and storage products
 - Connected Tools and equipment
- Visit www.milwaukeetool.com for more information



What is ONE-KEY™?

- **Connected Tools and Equipment – A comprehensive system for Construction Inventory Mgmt.**
 - Digital Inventory – A secure and central place for your tools and equipment
 - [Dashboard](#), [Item Details](#), [Tool History](#), [Service Reminder](#)
 - Tool Tracking – Tool and equipment tracking built for the trades
 - [Community Bluetooth Tracking](#), [Jobsite-Built equipment Tracking](#), [Small Tool and Asset Tagging](#), [Geofencing](#)
 - Crew Management – Complete crew management, on or off jobsite
 - [Multi-User Admin](#), [Integrated Roles](#), [Virtual Address Book](#)
 - Places Management – Intuitive visibility at all level
 - [Dashboard](#), [Details](#), [Audit Anywhere](#), [Transfer](#)
 - Connected Tool – Smart tools save you time
 - [Track and Lock tools](#), [Dial in Performance](#), [Utilization Data](#), [Ultimate Control](#)
- **ONE-KEY™ statistics**
 - First ONE-KEY tool was launched in 2015 for NA, and 2016 in EMEA and ANZ
 - Total ONE-KEY tools launched in NA, EMEA, & ANZ – 54
 - Total combined registered users – 150K+
 - Location of Tools being tracked and updated daily in NA, EMEA, & ANZ– 2.4M+



Mobile app available for FREE on [Download on the App Store](#) [GET IT ON Google Play](#) and onekey.milwaukeetool.com

Quality Assurance a F.A.R.E. Practice

Functional Testing

- ❖ Team of 4 supporting 4 Product Teams supervised by a Lead
- ❖ Test case to verify and validate Acceptance Criteria
- ❖ Work with PO on prioritizing bug backlog
- ❖ SME for Automation and Regression Team

Automation Testing

- ❖ Team of 6 from nearshore and offshore coordinated by Leads
- ❖ Automate Functional Test case for iOS, Android, and Web
- ❖ Automate API Integration Testing
- ❖ Automation Lab with Macmini's, phone devices, and ONE-KEY™ tools

Regression Testing

- ❖ Team of 4 offshore coordinated by a Lead
- ❖ Use of automation
- ❖ Hands On Testing with tools
- ❖ Assisted by Functional Testing team to validate new features or changes to the existing functionality

Engineering

- ❖ API Integration and Validation
- ❖ CI/CD pipeline
- ❖ QA Environments
- ❖ POC with new Framework and tools to support Automation and Regression

Scope for Every Release

- ONE-KEY™ Tools – 54



- Region – NA (North America), EMEA (Europe Middle East Africa), ANZ(Australia & New Zealand)

- Languages –

- Phone Devices –



- Supported Browser –

- Total Test Cases – 8000+



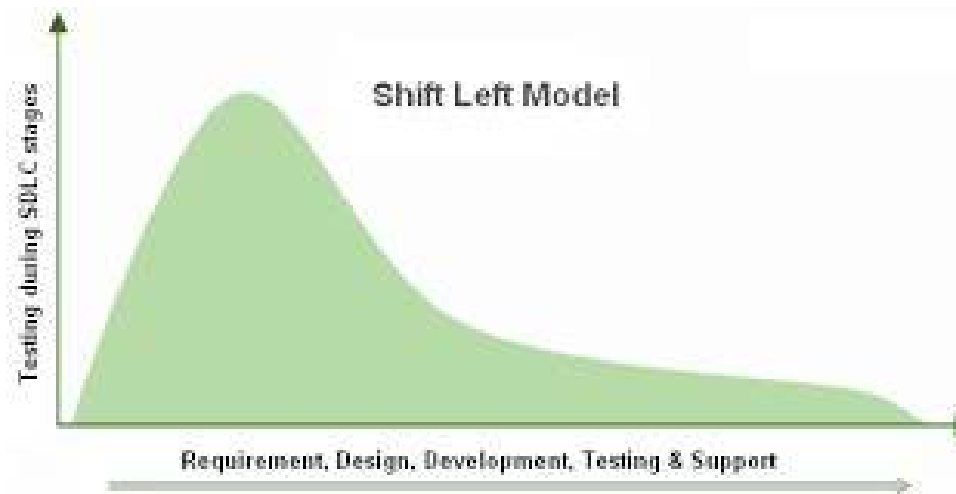
Regression from 4 weeks to 10 days!

- In 2016 everything was tested Manually, taking 4 weeks to complete Regression
- In 2017 I got CapEx project approved for Automation at offshore location
- In 2018 started developing Automation Framework and Automating functional test cases
- In 2019 Regression was completed in 3 weeks, with 30% functional Test Cases Automated
- In 2020 Regression was completed in 2 weeks, with 45% functional Test Cases Automated
- In 2021 Regression is being completed in 10 days, with 60% functional Test Cases Automated



QUALITY at Speed – Shift-Left Approach

- Prevention than Detection
- Analyst involved at the beginning, to test Acceptance Criteria or Requirement
- Discuss Testing recommendations with team
- Test Case available to execute by team members
- Test Everytime and Everything



QUALITY at Speed – Automation




Total Resources – 5
Location – Offshore
Sprint – 2 week




Total Resources – 4
Location – Offshore
Kanban

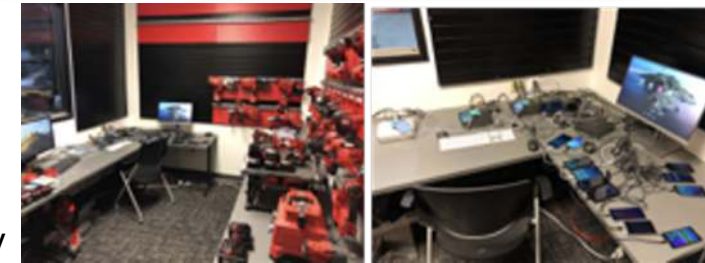



Total Resources – 4
Location – Offshore, Nearshore
Kanban




Total Resources – 1
Location – Onsite
Sprint – 2 weeks

- Goal - Automate ALL functional test cases
- Execution with stability, and passing rate greater than 95%
- Support from Developer, very crucial
- iOS Automation scripts executes on devices connecting with tools via Bluetooth
- Android Automation scripts executes on devices and virtual tools, avoiding Bluetooth connectivity
- Web Automation scripts executed on AWS platform
- API Integration Automated scripts executed on all QA environments
- Automation Engineer access lab from offshore, using TeamViewer to troubleshoot any execution related issues



Automation Lab

QUALITY at Speed – Continuous Testing and Regression in TEST

CI/CD Pipeline	iOS	Android	Web	API
Sanity	Every Merge	Every Merge	Every Merge	N/A
Critical Path	Twice a day	Twice a day	N/A	N/A
Baseline	3 Tools per day	Every day	N/A	Every Merge
Non-Tool	Every Day	Every day	Thrice a day	Every Merge



QUALITY at Speed – Collaborative Team Effort

- QA Teams are assigned with quarterly OKR (Objective and Key Results)
- Empathy between cross functional team members
- QA Leads are empowered to make decisions
- Candid and Respectful
- Failure is an opportunity for Improvement
- SME offers demos on new features and functionality to keep QA team in sync
- Maintain transparency between teams
- Collect KPI (Key Performing Indicators)



Functional																
Release	Start of Sprint			Scope				Total New Test Case			New Bugs Logged		Bugs Backlog			
	Stories	Bugs	Test Case created	Stories	Bugs	Closed	Differed	iOS	Android	Web	CI/CD	Analyst	iOS	Android	Web	API
Rel# 8.5																
Rel# 8.6																
Rel# 8.7																
Rel# 8.8																
Rel# 8.9																

Automation											
Platform	Test Cases		Automation				Regression - North America				
	Automated	Remaining	Pass	Fail	Blocked	Bugs	Release	Execution (hrs.)	Review (hrs.)	Bug found	Bug Fixed
Trend -	▲	▼	▼	▼	▼	▼	▼	▼	▼	▲	▼

Regression										
Release	Test Cases Executed		OKAUTO		Manual		New Bugs Logged		Bugs Resolution	
	OKAUTO	Manual	Execution (hrs.)	Review (hrs.)	Non-Tool Testing (hrs.)	Tool Testing (hrs.)	OKAUTO	Manual	Fixed	Backlog
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- Challenge team members on how to save time using Automation, without compromising Quality

Regression from 10 days to 5 days by Q3 2021!

- Automation BLITZ project to deliver 95% of Functional Test Cases Automated by end of July 2021
- Integrate 100% Automation scripts within CI/CD pipeline, to test Everytime and Everything
- Provide compromised functionality feedback on same day
- Regression Team doing Exploratory Testing
- Implement Parallel and Distributed Test Execution, using Docker containers and Selenium grid
- Add more Macmini and devices, to reduce execution time



Q AND A

Email me at Nitin.Gupte@milwaukeeetool.com