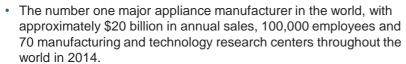


### **About Whirlpool Corporation**

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• The company markets Whirlpool, KitchenAid, Consul, Maytag, Brastemp, Amana, Bauknecht, Jenn-Air, Indesit and other major brand names in more than 170 countries.





Vision : Best Branded Consumer Products.... In Every Home Around the World

Mission: Create Demand and Earn Trust Every Day





























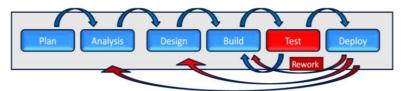
- Masters in Production Engineering with 16 years experience in Engineering Industry
- With Whirlpool for 11 years India, United States
- Expertise in Product Development, Simulation, CAD Automation and PLM
- PTC Creo (Pro/E) user since 1998 and Windchill user since 2004
- Member of Whirlpool PLM Windchill team



# AGENDA PTC' Live

- Setting up Context
- Operating model
- ☐ Testing Methodology
- ☐ Approach for PTC Windchill PLM Testing
- Value realisation graph
- ☐ Testing Deliverables for PTC Windchill major Project Deployments
- ☐ Challenges and Mitigation
- Next Steps Roadmap

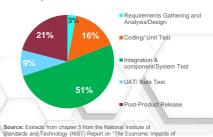
Important Drivers for Dedicated Testing Team:



- There was no Whirlpool Testing team for PLM applications
- o Project resources were consumed in testing
- o Most of the time, Testing performed for ideal conditions/ key process steps and specific Scenarios
- o High number of issues at deployment stage
- Opportunity to improve Performance benchmarking

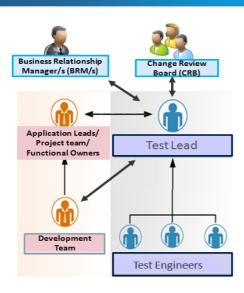
### **Industry Trend of Defects Detection**

adequate Infrastructure for Software Testing



## **Operating Model**

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- Test Lead

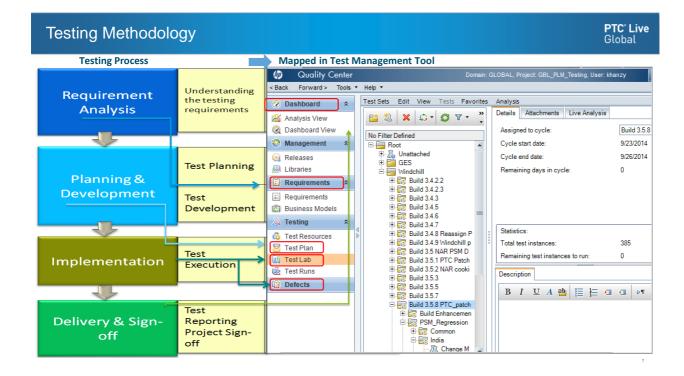
  Develop and implement Testing Strategy

  Own Test Management HP Quality Center
  Ensure coordination between Development team, Project
- Listage Coordination Detweet Development Centry, Project teams/functional owners, CRB and BRM Review /Validate the test cases, test reports and metrics Coordinate the day-to-day offsite service delivery Identify, initiate and institutionalize process improvement

- activities

### Test Engineers

- Create test cases in HP quality center based on business
- Create test cases in HP quality center based on business and development inputs
  Participate in Requirements Gathering, part of functional and technical process review
  Execute test cases and record the results
  Documentation for testing
  Develop & execute test automation mechanism



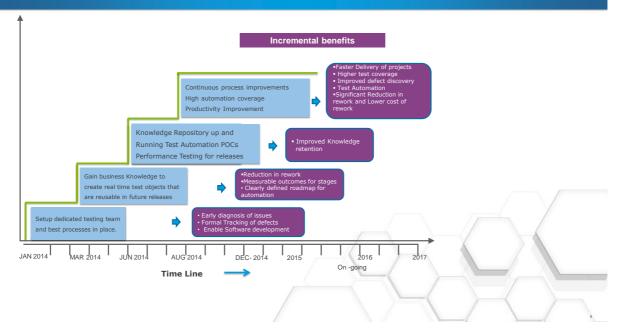
### Approach for PTC Windchill PLM Testing

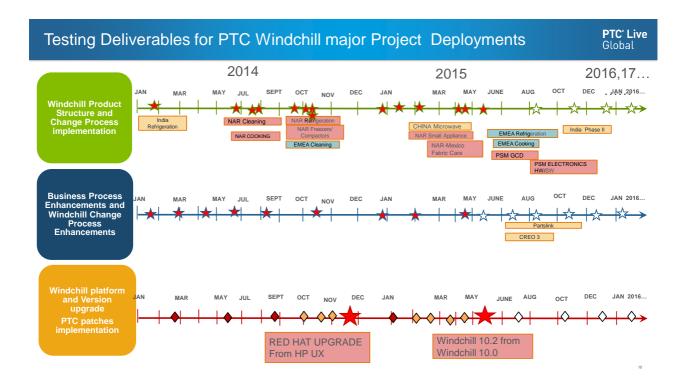
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- Indentify key functional areas of overall Windchill landscape that company uses
- · Update/develop required test cases
- Analyze and build required test cases for Interfacing applications like MRP, Project portfolio application, data classification application, in-house applications
- · Streamline Regression test cases
- Develop and implement functional Test automation strategy. Automate Priority test cases and Windchill workflows
- Develop and implement functional Performance testing strategy. Major releases and upgrades are validated to meet performance targets.



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### **Challenges and Mitigation**

#### Challenges

#### **Domain Complexity**

- Knowledge of Product category process/functions
- Complex business workflow testing

#### **Technical Complexity**

- Testing across multiple interfacing applications at same time
- Limited testing time for performing regression integrated testing

#### Performance

• Volumes, Priority based response times, scalable and flexible

#### People

· Repetitive tasks, turnover, Engagement

#### Governance

- Interfacing with multiple programs and application owners
- Interfacing with different stakeholders (dev , infrastructure, business teams)

#### Mitigation

- Testing team to obtain product category process/ knowledge by attending training and KT session
- Testing team to collaborate with SMEs/ Business team to understand the process details



- Team trained on interfacing application and categorize application specific team engineer
- Test Automation to cover regression test cases



- Test lead to create and manage proper plan based on the priorities and utilize the resources efficiently.
- Work with Systems/Infrastructure team



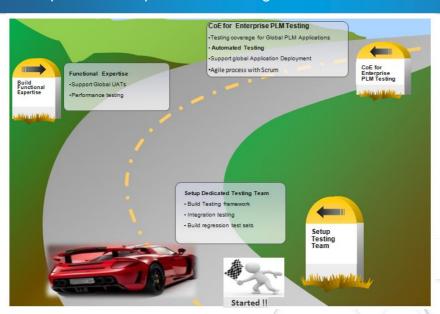
 Innovation, Test automation to cover repetitive tasks, X-functional Involvement, R &R, Job rotation, Travel



 Onsite travel / Test lead to coordinate with development team for End-to-End program governance and collaborate with stakeholders

### Next Steps- Roadmap for PLM Testing Team

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# THANK YOU...

For any questions, feel free to reach out on email: Yogesh\_Khanzode@whirlpool.com

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