

# WHY WHITEBOX TESTING ISN'T MORE EXPENSIVE THAN BLACKBOX TESTING

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## OUTLINE NEXT 45 MINUTES

Main focus on performance and stability aspects

- Intro
- Pain
- Goals
- Gap
- Proposals
- Summary

# INTRO

# DEFINITION TESTING

“Software testing is the process of analyzing a software item to detect the differences between existing and required conditions (that is, bug) and to evaluate the features of the software item”

IEEE Standards Collection:  
Glossary of Software Engineering Terminology

# TESTING APPROACHES

## Black-box

- Test the functionality against requirements and specifications
- User-centric

## White-box

- Designer-centric
- Necessary to know internals

## Grey-box

- Pick the pearls of the 2 previous approaches

PAIN

## BUSINESS IMPACT

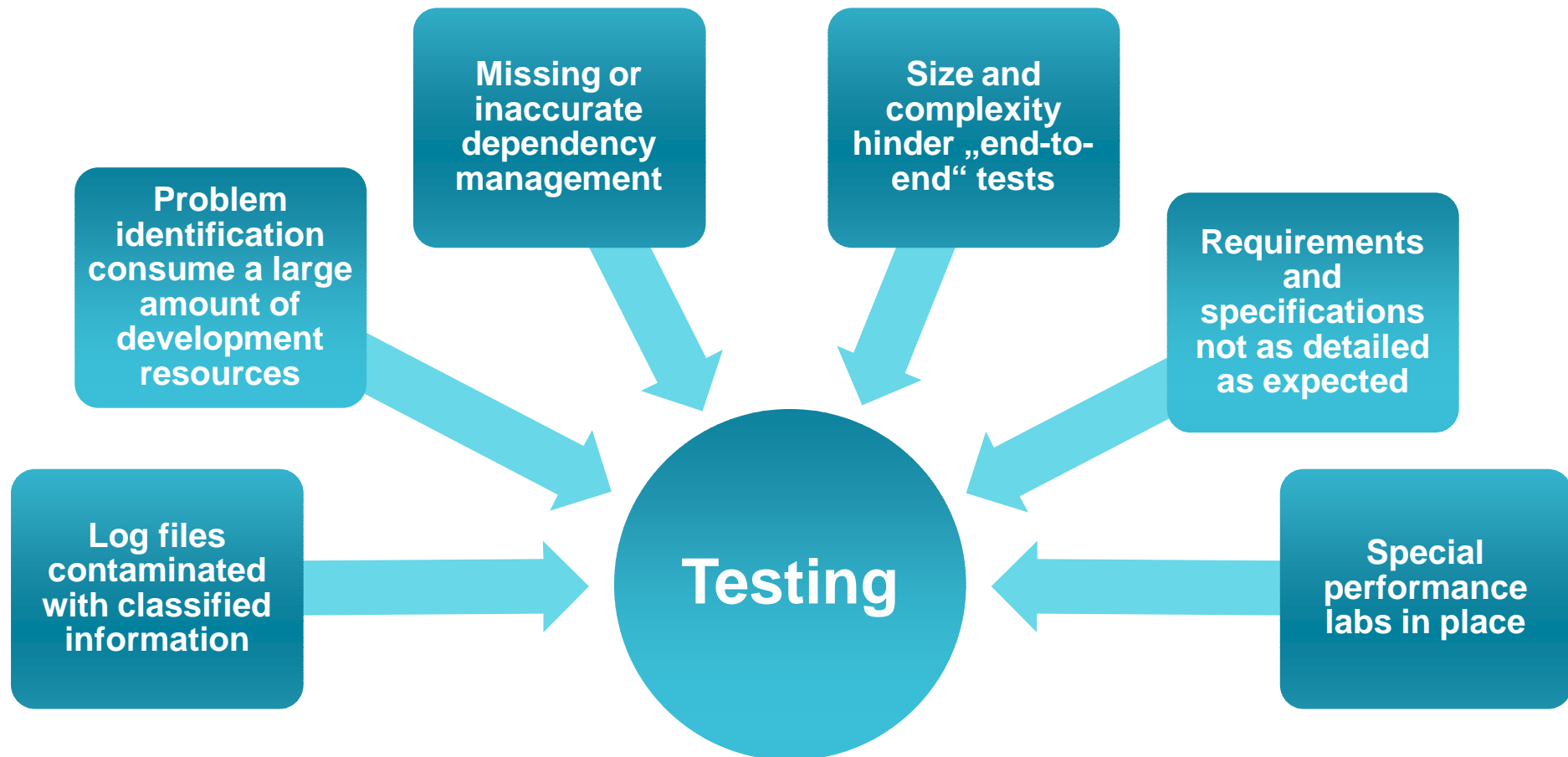
Failure of mission critical applications means:

- Loss of money and trust
- Increase of operations costs
- Development work blocked due to error analysis

Are your business applications at risk?

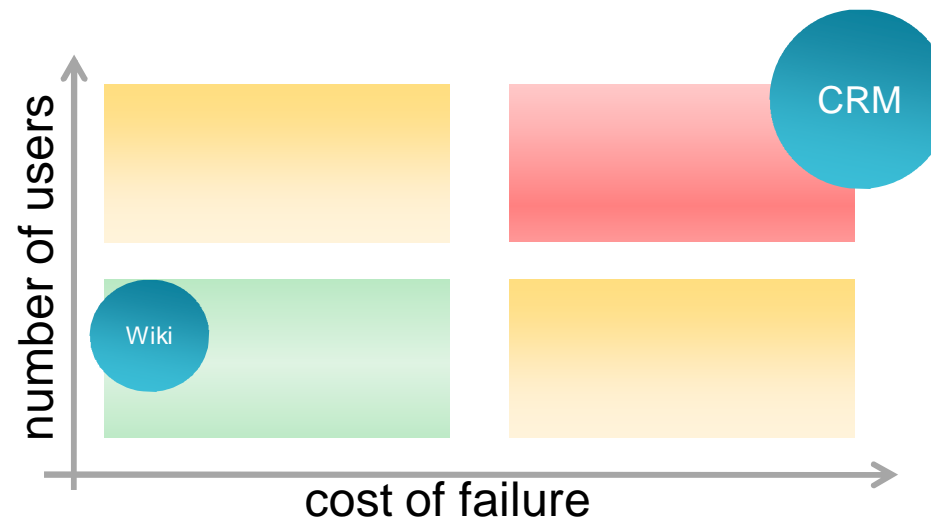
- What are the end users?
- Competitive environment?
- What is the annual revenue linked to this application?
- How do you track down failures at the moment?

# COMMON EXPERIENCE AND PRACTICE



# PERFORMANCE REQUIREMENTS

- Performance requirements not detailed enough
- Missing quantity structure for risk/impact analysis
- Performance requirements have little or no test coverage



# GOALS

## PERFORMANCE QUESTIONS

- **WHAT** is the issue?
- **WHERE** and **WHY** does an issue occur?
- Was the issue caused by the component or the infrastructure?
- Top performance contributors in the system?
- Does the system scale as expected?

## ORGANIZATIONAL GOALS

- Clear and short communication channels
- Performance management lifecycle awareness
- Improve specification quality
- Improve management decision support
- Reduce risk
- Build and test often

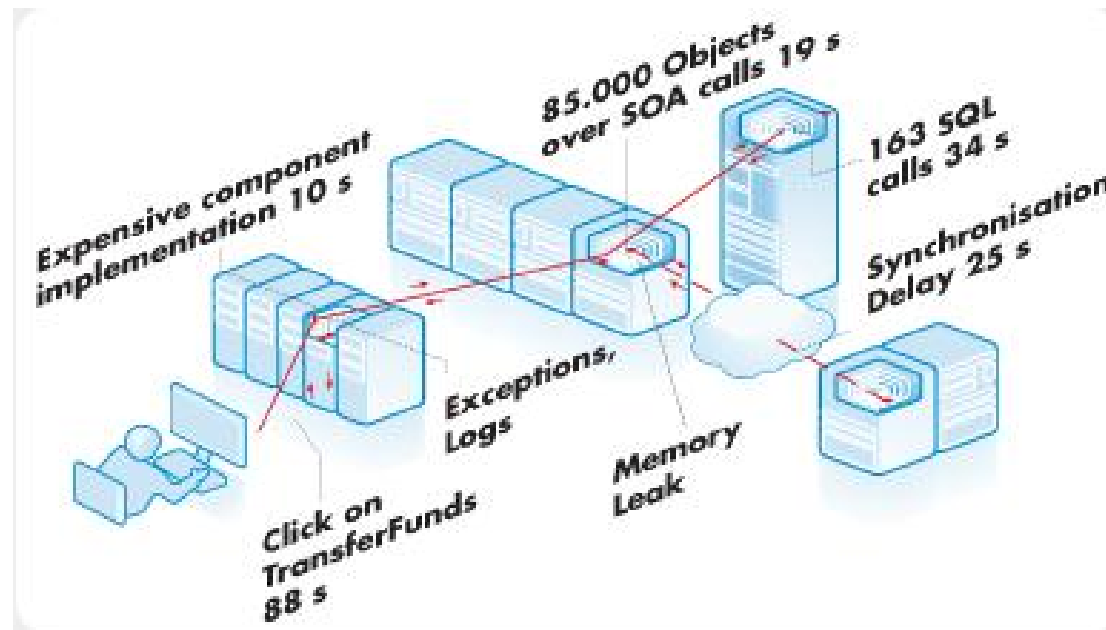
## TECHNICAL GOALS

- Thin performance management layer on system under diagnose
- Support standard technologies „out-of-the-box“
- Centralized management
- System wide performance lifecycle
- Automated tasks
- Establish a baseline for regression testing

GAP

# SYSTEM COMPLEXITY

Complex and heterogeneous hard- and software system



## SYSTEM COMPLEXITY

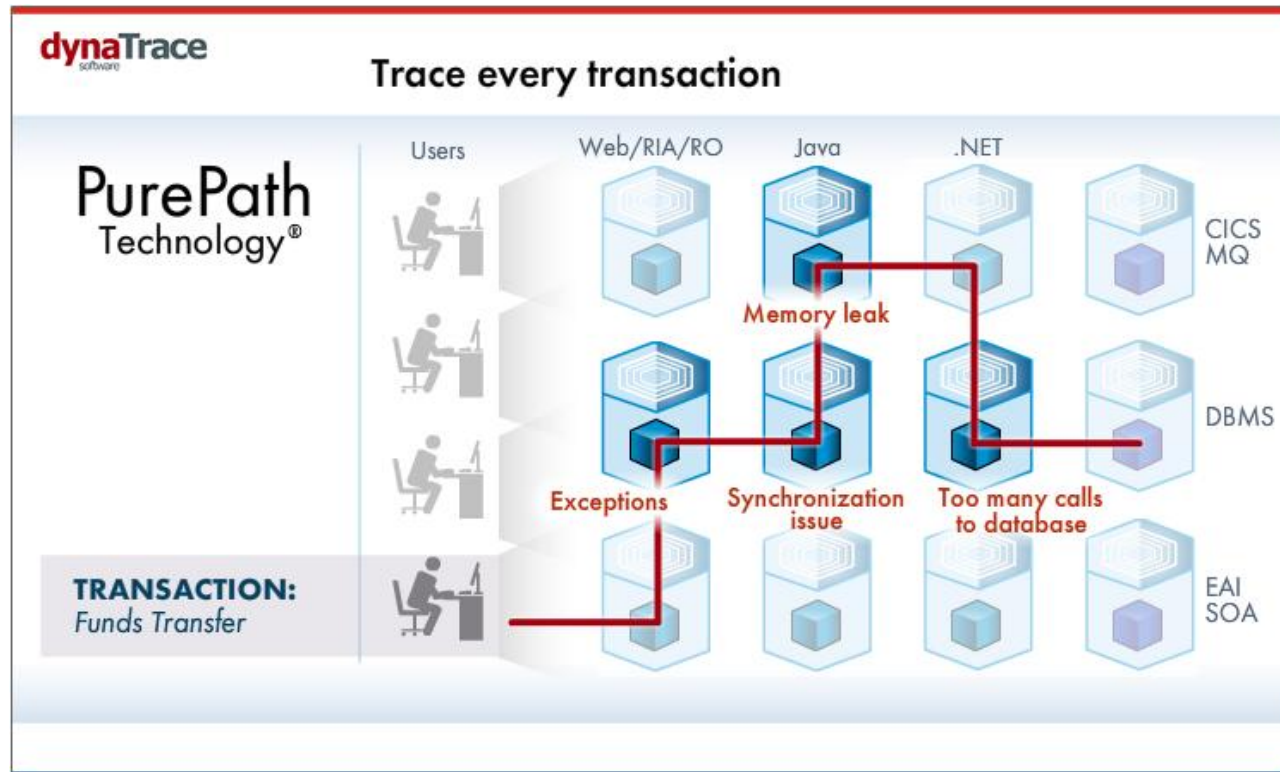
- Reconstruction of issues is tedious and error prone
- Testing of infrastructure implicitly done
- Mocked services lead to false assumptions
- Traditional approach changes the system for performance tests
- Performance analysis and tuning is a black art

## TRADITIONAL SPECIALIST ROLE MODEL

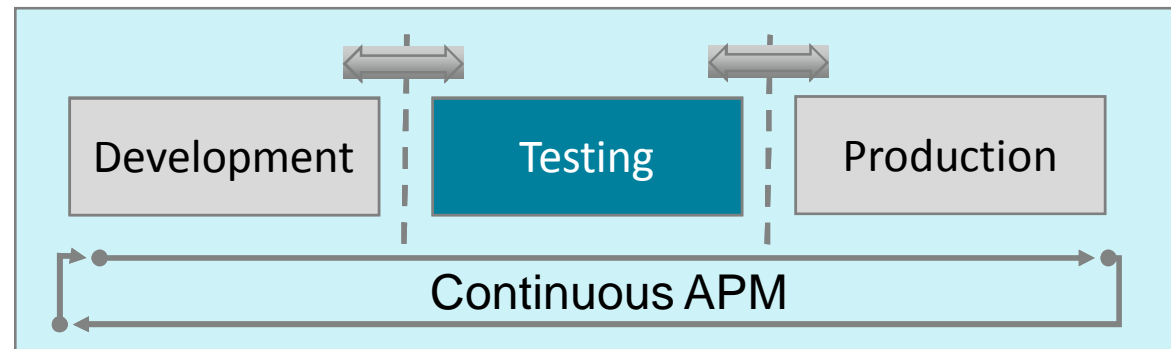
- Operations and testing units do not know the internals of a component
- Black-box approach needs component developer support for identifying issues and triage
- Communication between involved units based on different format and level of detail
- „End-to-end“ Know-how is rare
- Security barriers hinder a quick information retrieval

# PROPOSALS

# RIGHT PROCESS. RIGHT TOOL.



# CONTINUOUS APM

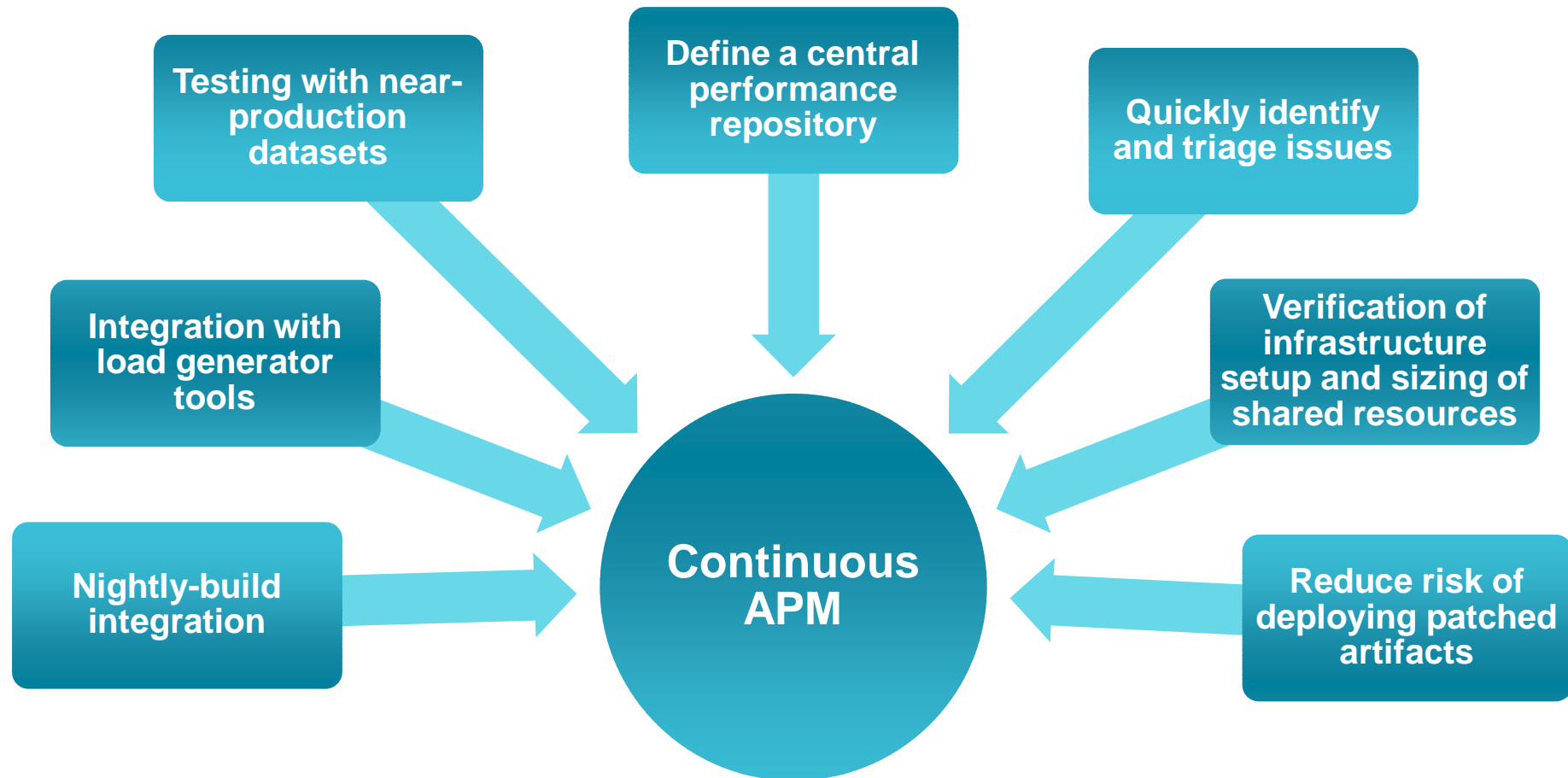


- Performance testing has a well-defined lifecycle
- „End-to-end“ test results and documentation support quick and reliable sign-off process
- Offline reproduction of performance issues
- Reduce mean time to repair
- Reflect production behavior by using trends

## ORGANIZATIONAL IMPROVEMENT

- Precise information help taking the right measures to secure business-critical applications
  - Sign-off process is more transparent
  - Reduce the risk of failure in production through proactive performance management in testing phase
- The same underlying data eases communication and makes it less ambiguous:
  - Reduce finger pointing
  - Focus on the resolution of the issue

# TECHNICAL IMPROVEMENT

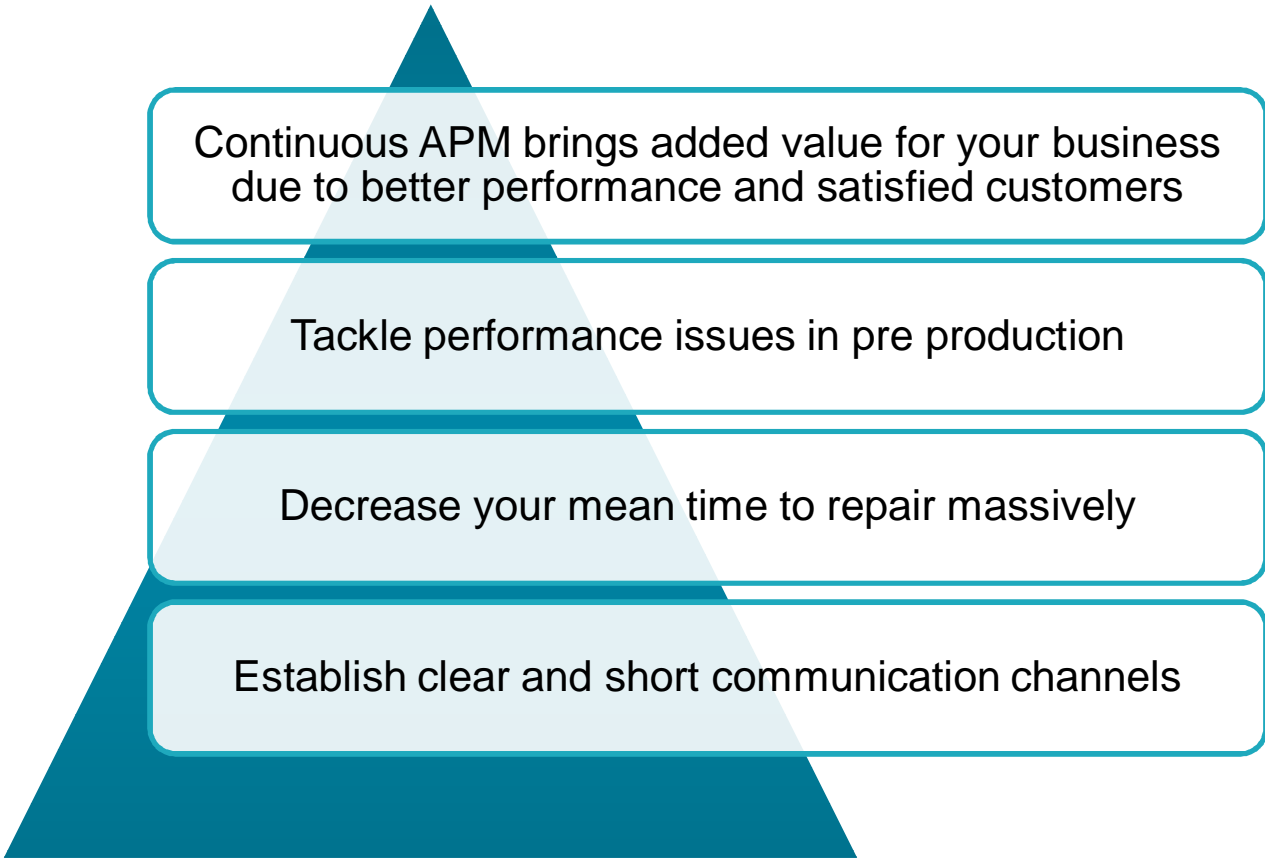


# SUMMARY

## LETS TAKE THE NEXT STEP

- Performance testing is traditionally neglected
- Blackbox approach still overweighs in our traditional performance testing
- dynaTrace Continuous APM answers the question of **WHAT, WHERE** and **WHY**

# CONTINUOUS APM IS OUT THERE



Continuous APM brings added value for your business due to better performance and satisfied customers

Tackle performance issues in pre production

Decrease your mean time to repair massively

Establish clear and short communication channels

In 5 days we analyze your application and propose you a catalog of measures.

Call us on

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# THANK YOU

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