# Performance – Mobile – Agile The Future

Presenter: Jaron Marsh

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Software Testing

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# Introduction

# Agenda

1. Traditional Performance Testing
2. Agile Performance Testing
3. Mobile Performance Testing
4. The Future

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# Firstly – what is Performance Testing?

Simulating user behaviour of application

Testing against Non Functional Requirements (NFRs )

Analysing all results (test and monitoring results) to produce a view of performance behaviour

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# Traditional Performance

- Occurs at end of project (can easily delay go-live)
- Production-like load and production-like environment
- Modelled off production stats
- Requires all functionality

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# Traditional Performance

Steps involved:

1. Test planning (workload model, requirements etc.)
2. Test preparation (scripting, smoke testing etc.)
3. Test execution (peak load, soak etc.) – multiple iterations
4. Test reporting

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# Traditional Performance

**Golden rule:**

*'As production-like as possible'*

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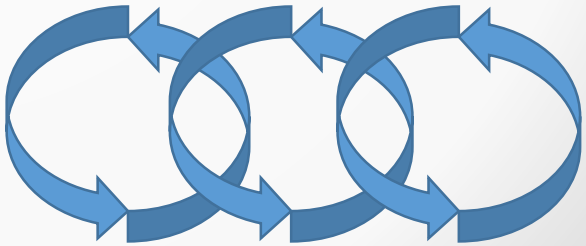
# Agile Performance Testing

# Agile Performance

- Occurs at end of each sprint/release
- Baseline/benchmark approach
- Not reliant on production load
- Doesn't require all functionality
- Traditional performance approach at the end



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$$Perf(Env_{Const} + WL_{Const} + Code_{Variable}) = X$$

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# Approach

- What are the tests?
- How are they run?
- Who runs them?
- What gets reported?

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# Benefits

- ✓ Earlier identification of performance issues
- ✓ Final performance window smaller
- ✓ Shift left
- ✓ Continuous integration

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# Risks

- Potential higher cost (performance resources engaged earlier)
- Developer assistance required earlier
- Convincing project of benefits

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# Example

**RELEASE 1**

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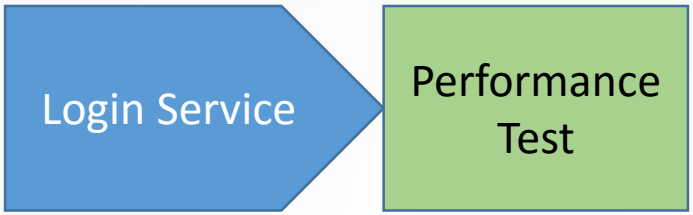
# Example

**RELEASE 1**

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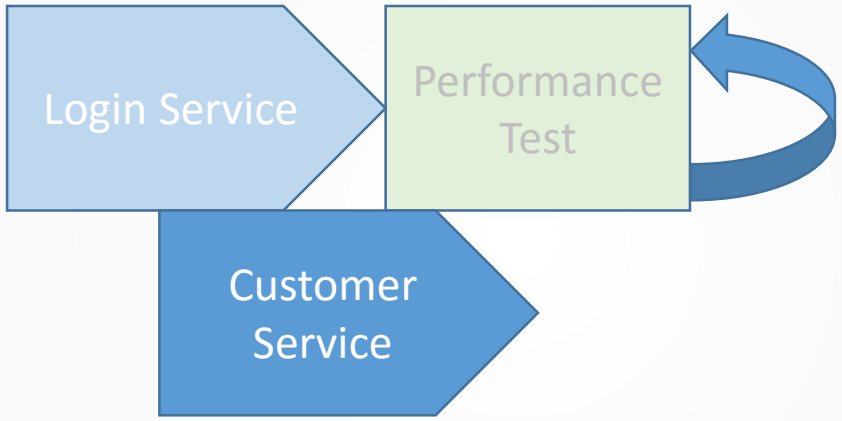
# Example

## RELEASE 2

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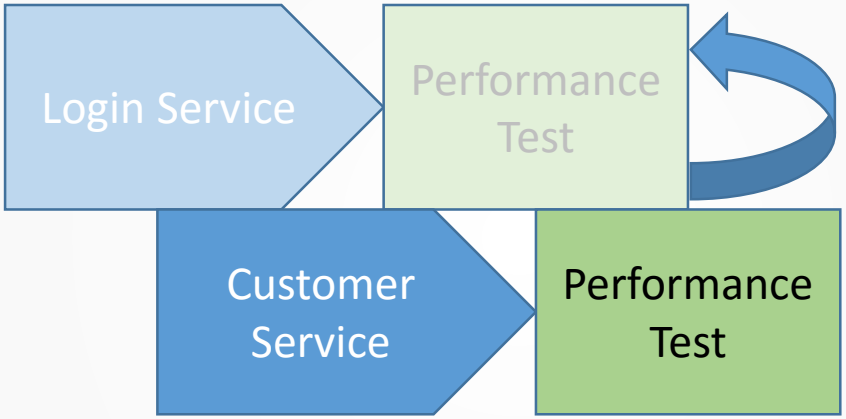
# Example

## RELEASE 2

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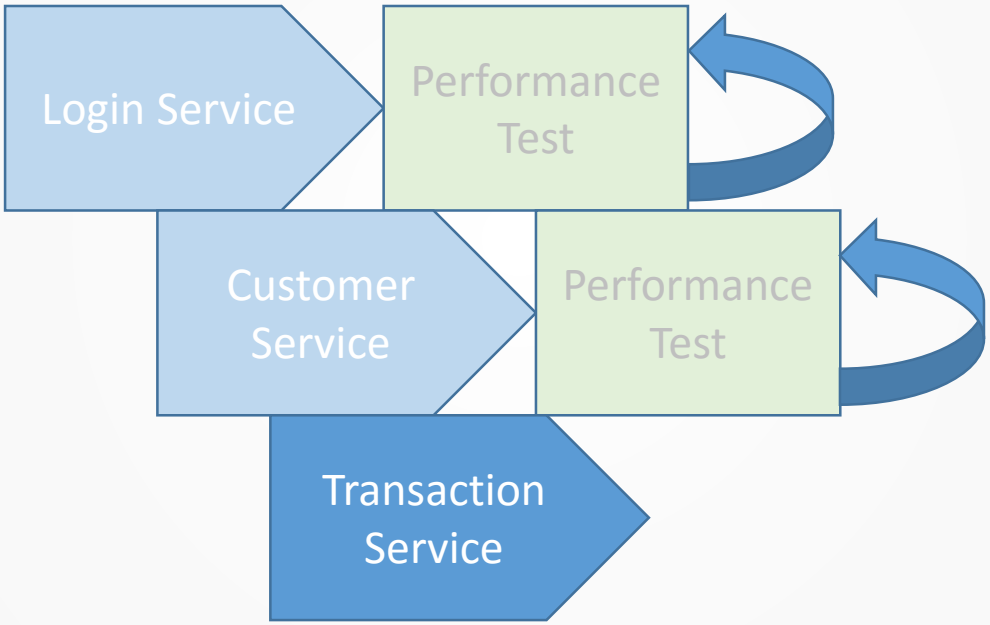
# Example

## RELEASE 3

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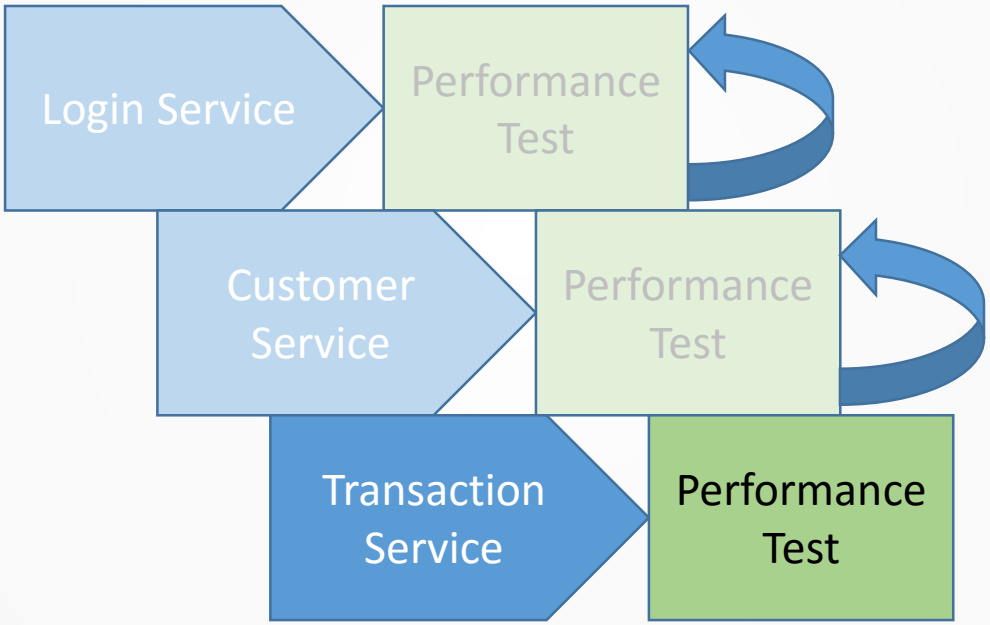
# Example

## RELEASE 3

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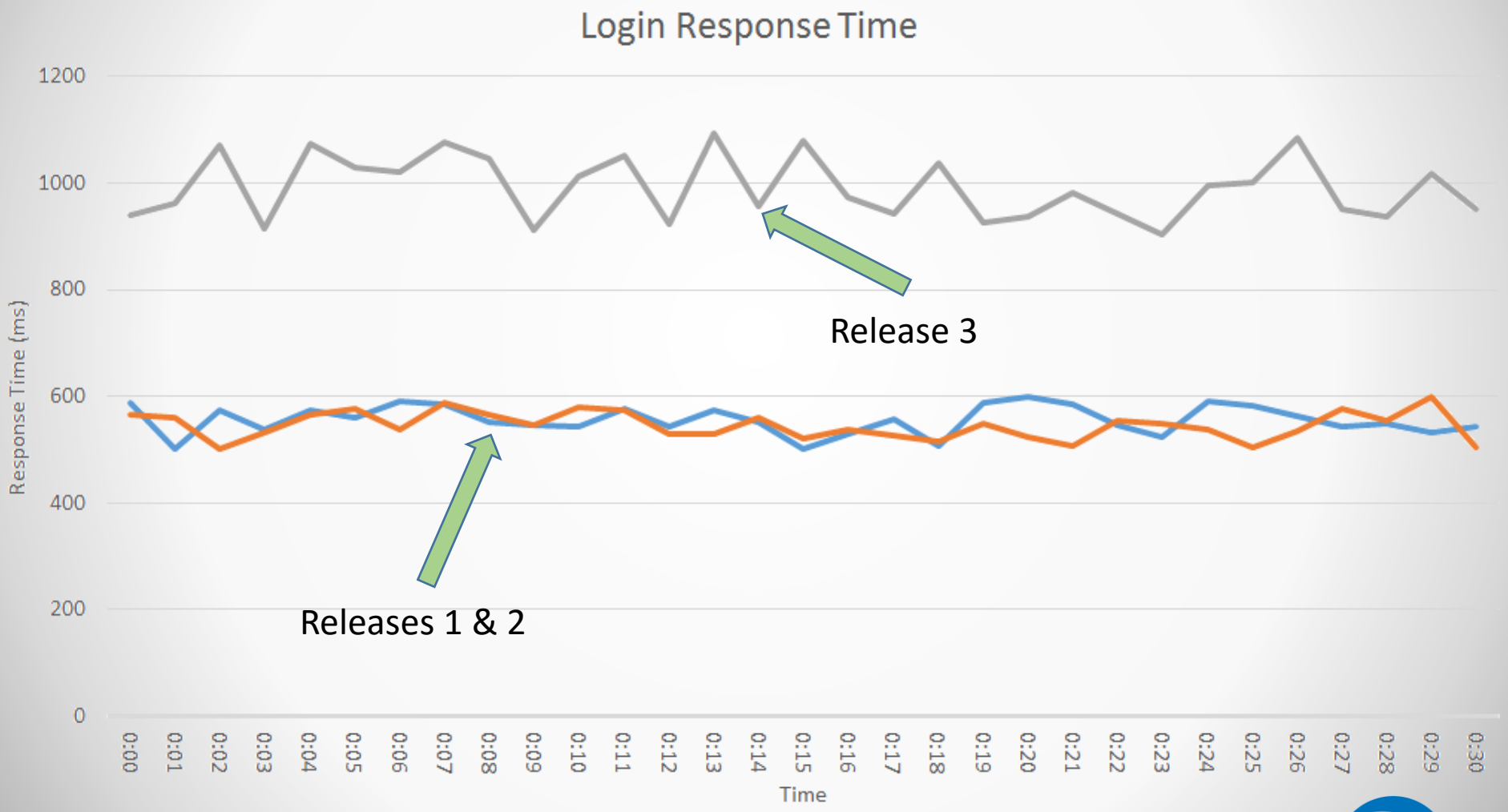
# Results

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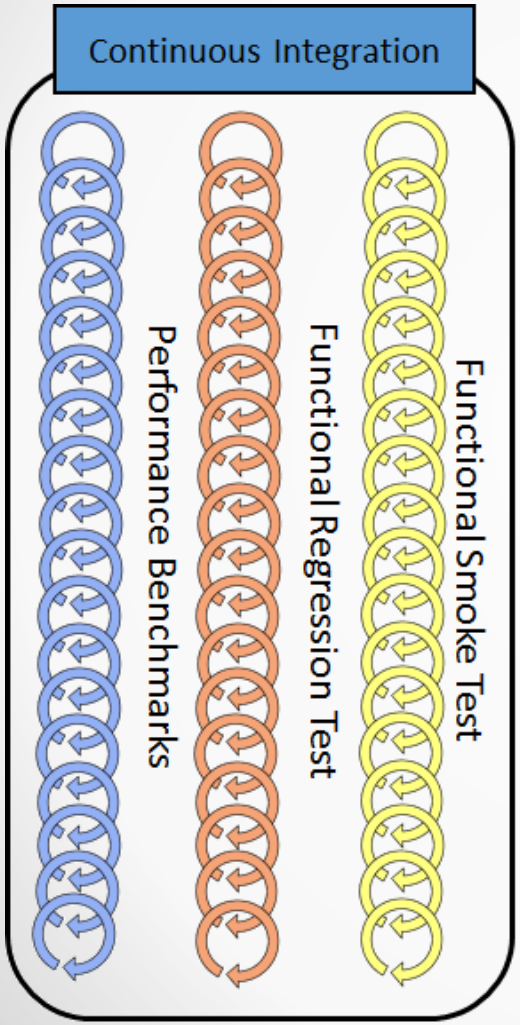
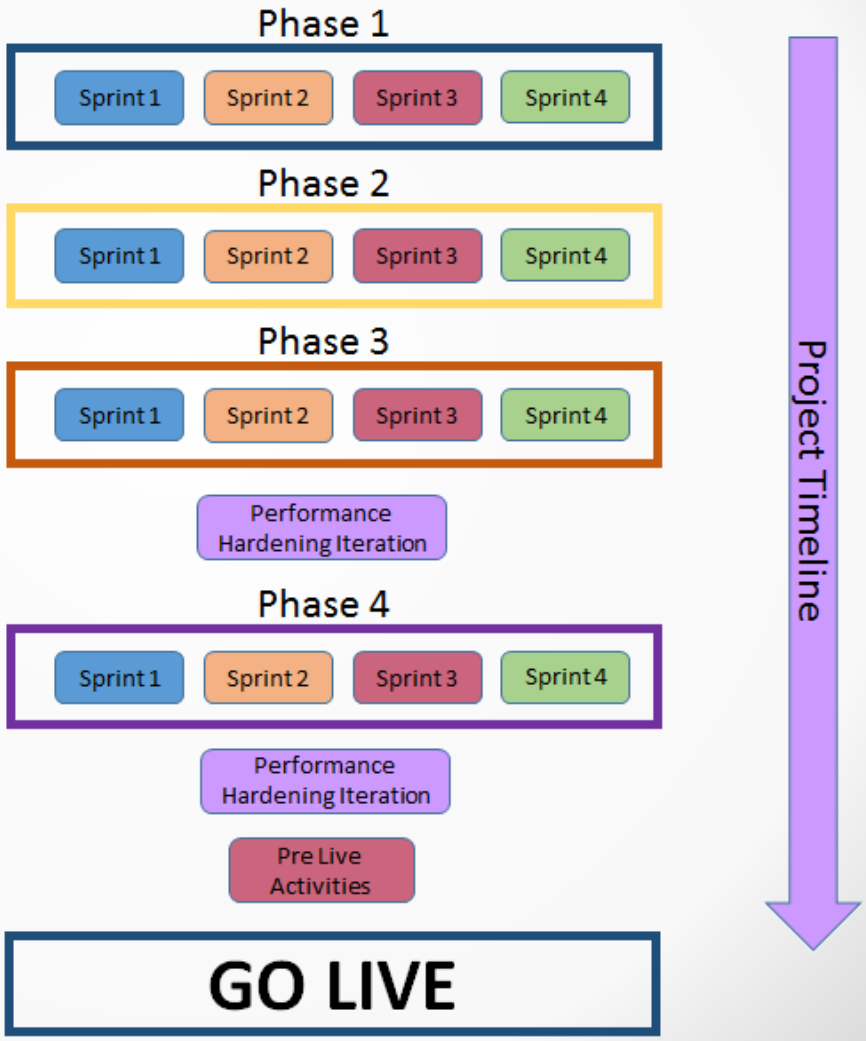
# Approach

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# Mobile Performance Testing

# Different mobile applications

1. Native application (e.g. Facebook, Angry Birds)

2. Mobile Web application (e.g. Financial Times)

3. Hybrid application (e.g. Instagram mobile app)

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# How do they work?

**Largely the same as a desktop application!**

1. User interacts with the application
2. Application may or may not send a request to the backend
3. Backend returns a response to the user, back to step 1.

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# Why so critical?

1. Faster delivery to production
2. Continued customer satisfaction
3. Desire to be best option in the market

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# What do we need to consider?

# Script Creation

Options:

1. Manually build each request
2. Record traffic and re-build requests
3. Record with performance tool through a proxy to create the requests

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# Load Generation

What do you want to replicate?

Where can you generate the load from?

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# Is there anything unique about apps?

- Data/CSS etc. often loaded during app start up
- Not as easy to ‘record and replay’
- User-Agent HTTP header is critical to simulate the correct device/browser

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# Different Approaches

# What approaches are there?

Three main approaches:

1. UI performance
2. Infrastructure performance
3. Combination of the first two approaches

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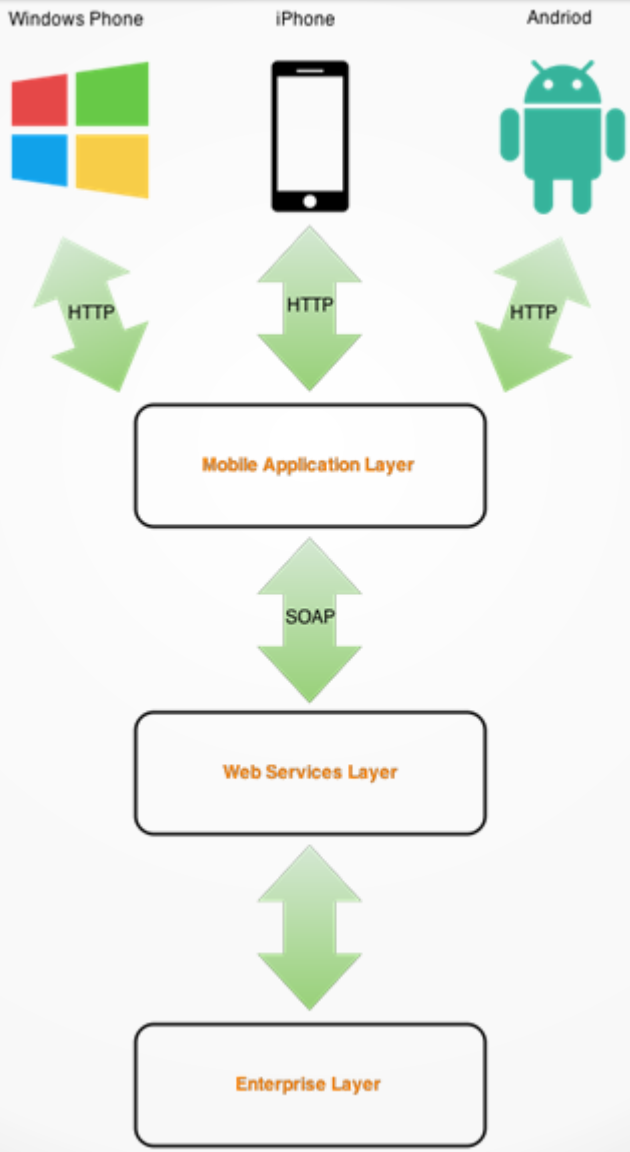
# Infrastructure

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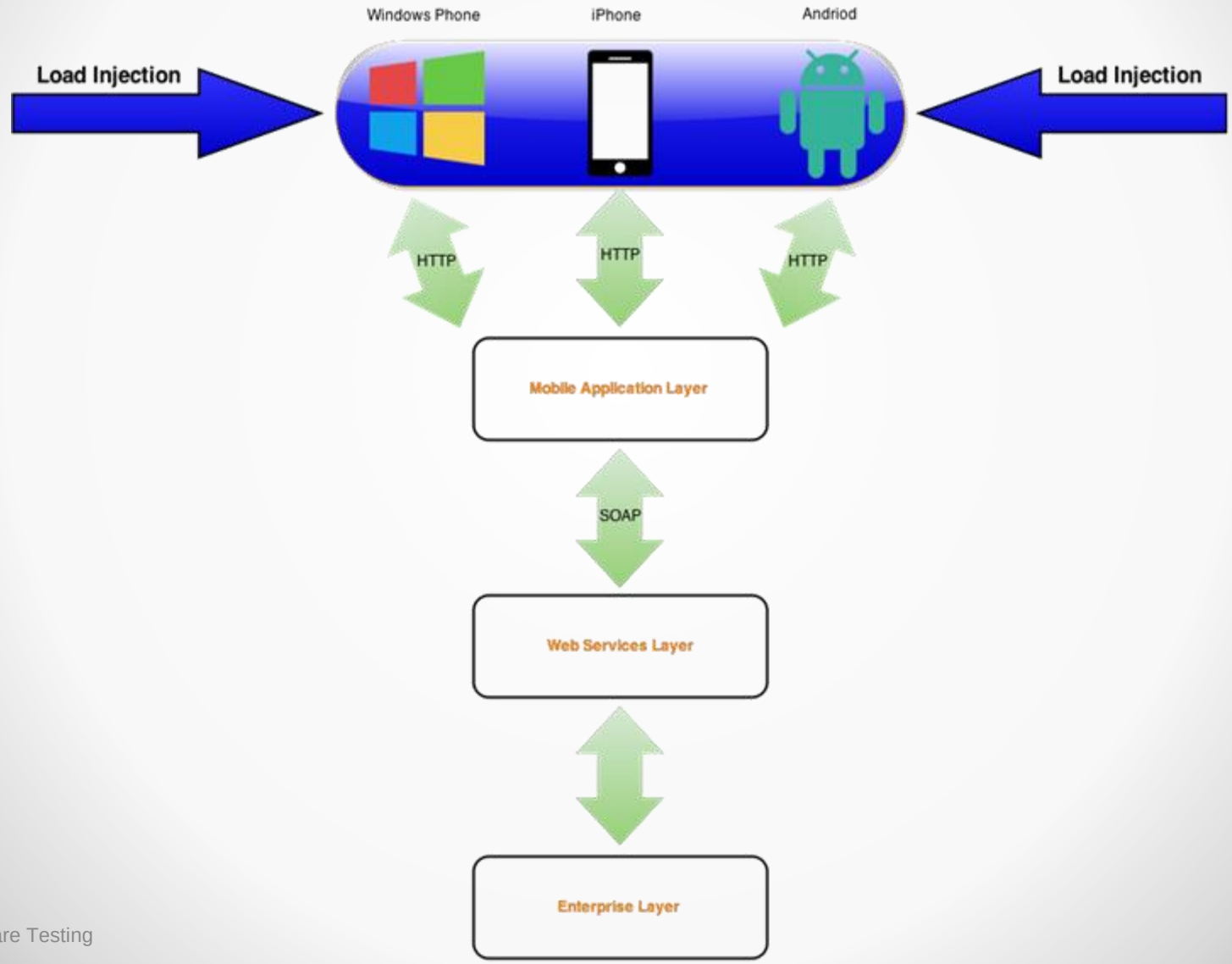
# UI Performance

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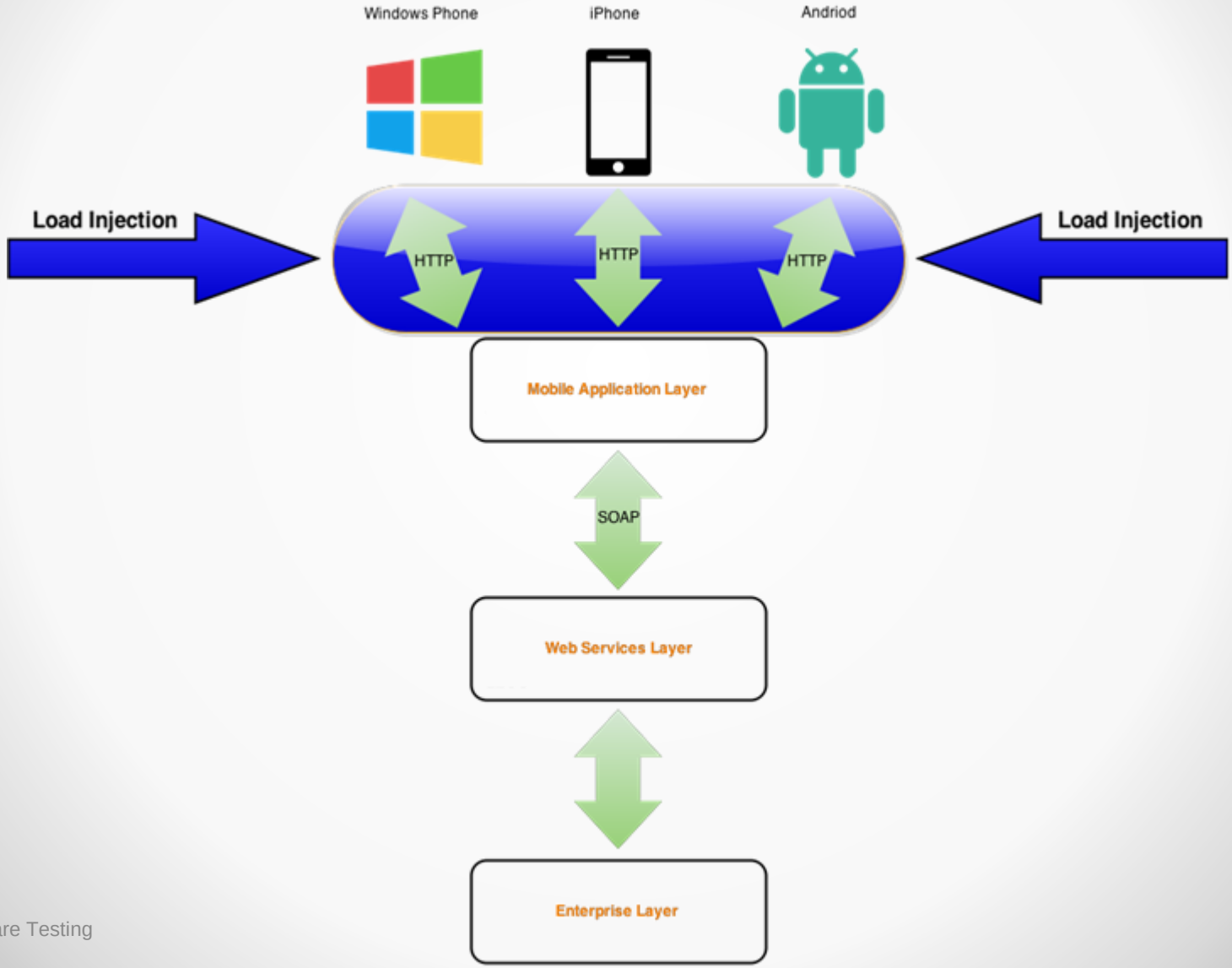
# Infrastructure Performance

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# Blended Approach

## Outcome

1. We have tested the infrastructure (main performance risk) under load
2. We have identified performance of the application on a mobile device while the infrastructure is under load

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# The Future

# The Future

- Move to have everything ‘mobile’
- Agile approach with a traditional ending for mobile applications
- More mobile apps built agile
- Quicker turn-around

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# The Future

- More in-house uptake
- Higher demand to be first to market
- More involvement earlier
- More integration

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# The Future of Performance

# CHANGE

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# Summary

The future is faster, more agile (in more ways than one) and constantly changing!

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# Performance – Mobile – Agile – The Future

## Contact Planit

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