6th UCAAT User Conference on Advanced Automated Testing

ETSI

Parallel Automated Testing on Mobile Devices through BDD-Cucumber and Open Source Resources

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Summary

1. Why Mobile Testing, DevOps and BDD
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   - BDD and Mobile Projects
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   - Live demo with 4 different devices
5. Outlook in the future
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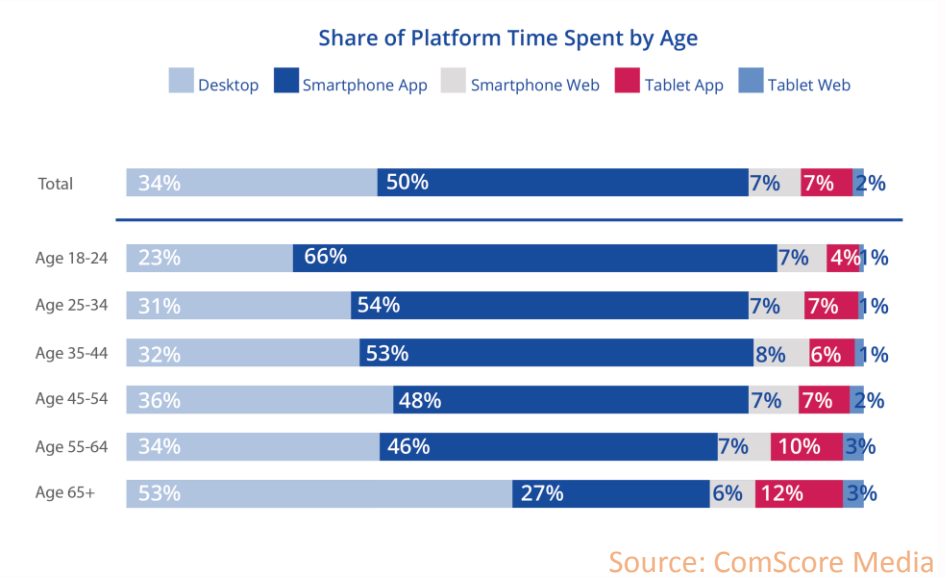
   - Pitfalls
   - What remains as is and prospective improvements

1- Why Mobile Testing, DevOps and BDD

Background

- Apps are leading the market.
- Many different devices with different OS type/Versions.
- Quick releases: automation solution.
- High demand for mobile testing in DevOps environments.



Source: ComScore Media

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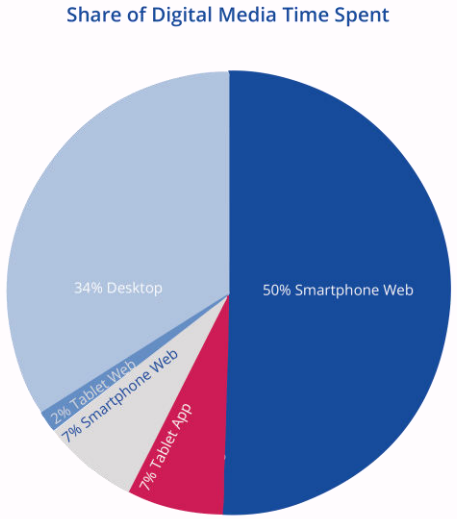

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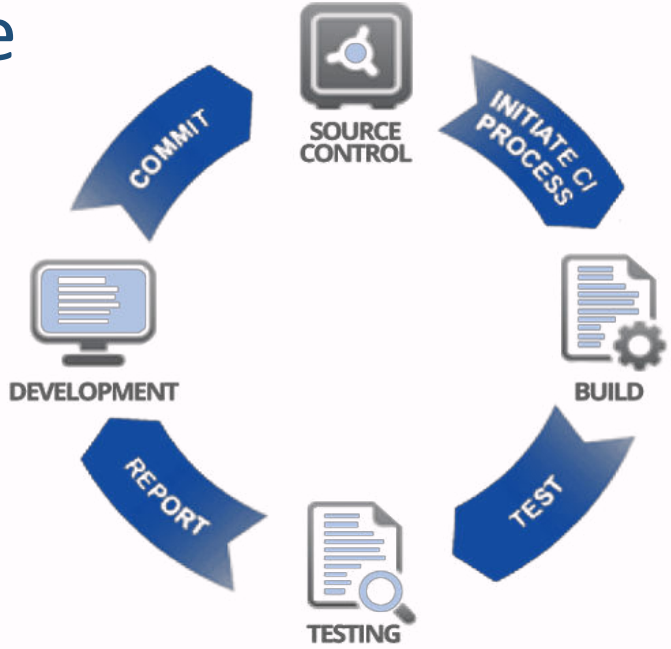
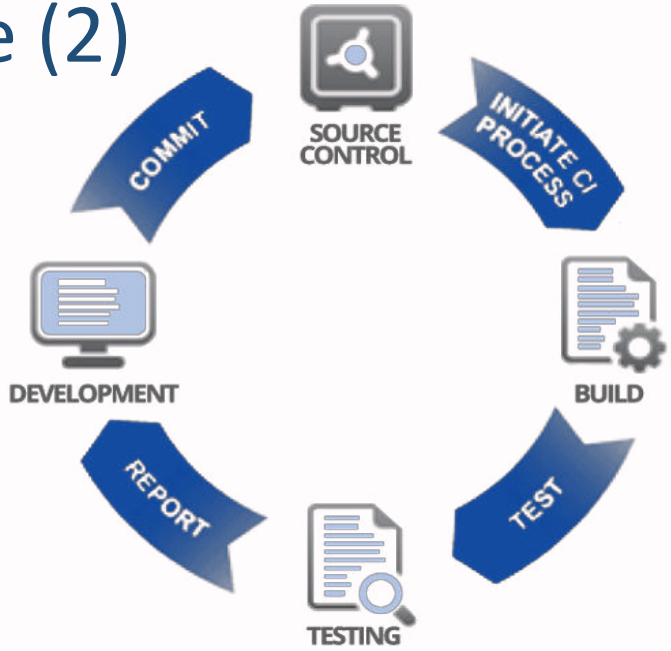
The Mobile DevOps challenge

- Market fragmentation.
- Different tooling than Desktop DevOps.
- Speeding-up DevOps activities: cloud/local/3rd parties.
- No continuous deployments.
- No rollback in releases.



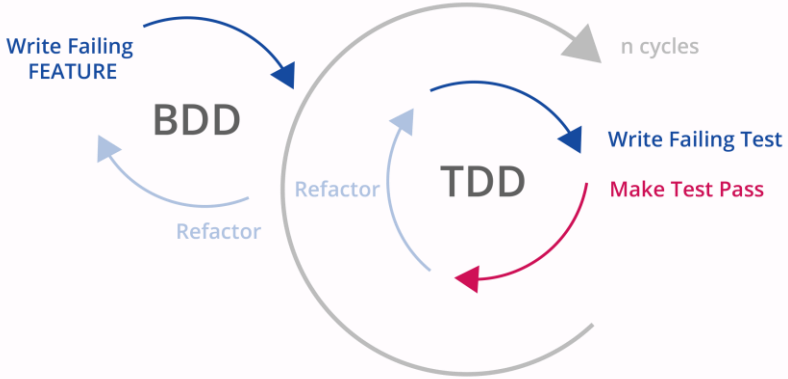
The Mobile DevOps challenge (2)

- Scalable automation.
- Continuous Everything against real environments.
- Poor app instrumentation.
- Back-end changes: services may not serve mobile.



BDD and mobile projects

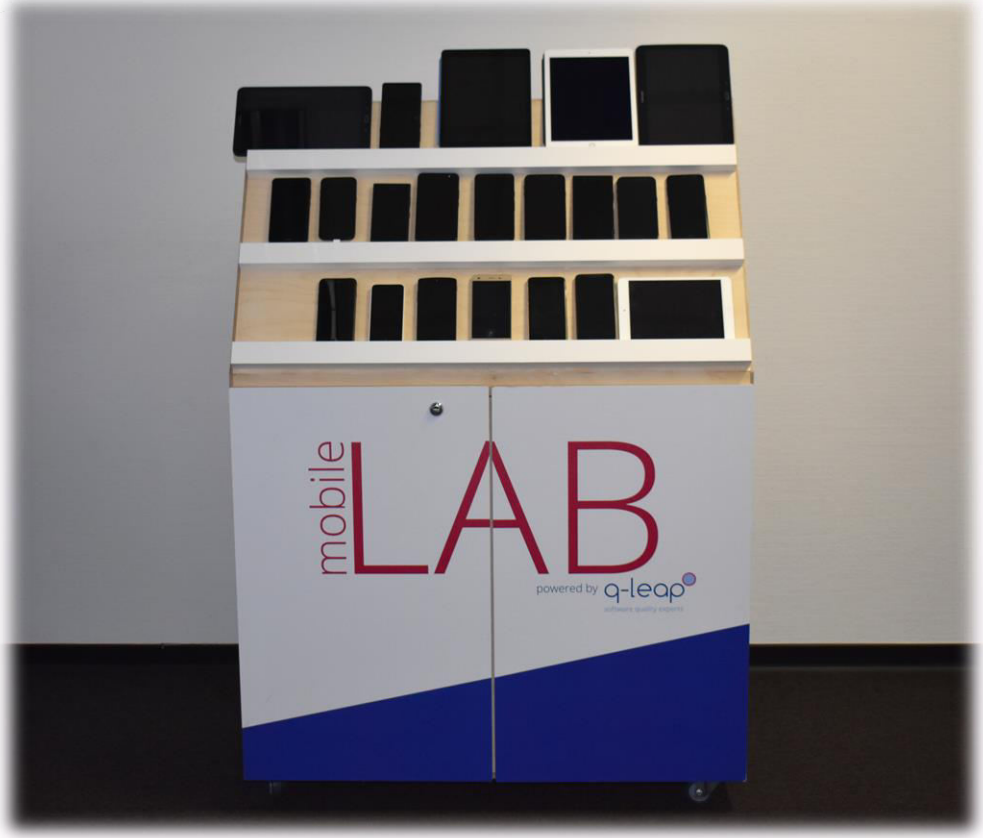
- Mobile testing is particularly user XP-oriented.
- Gherkin standardizes documentation.
- BDD enhances interdepartmental collaboration.



2- A bit of history

Our needs and how we tackled them

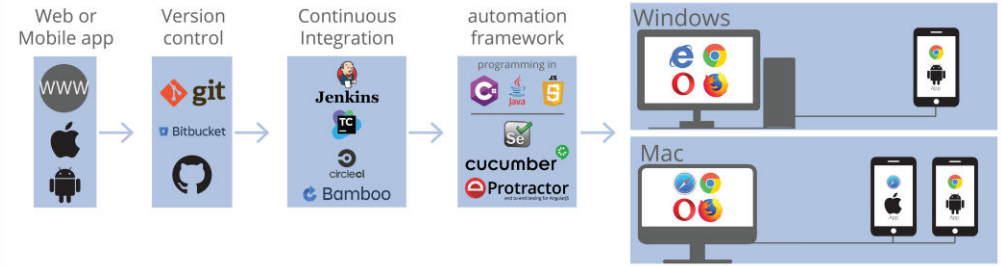
Requirement\Issue	Solution
Real environments.	**Real devices, self-hosted** solution.
Time, costs, customizable tools and frameworks.	Free **open-source** tools, **self-hosted CI** solution.
Privacy and security of the data.	**Self-hosted** solution.
Portability.	Wheeled structure.
Improve \ modify framework.	**Scalable code** (e.g. Page Object Model techniques).
Current commercial tools not satisfying.	Customisable open-source tools.
Dead batteries.	USB-powered on hub machine.



3- The chain of command

Workflow

- Test project triggered from CI.
- Test automation run on devices connected to the slave machine.
- Unified report delivered.



Tools, languages and frameworks

TestNG

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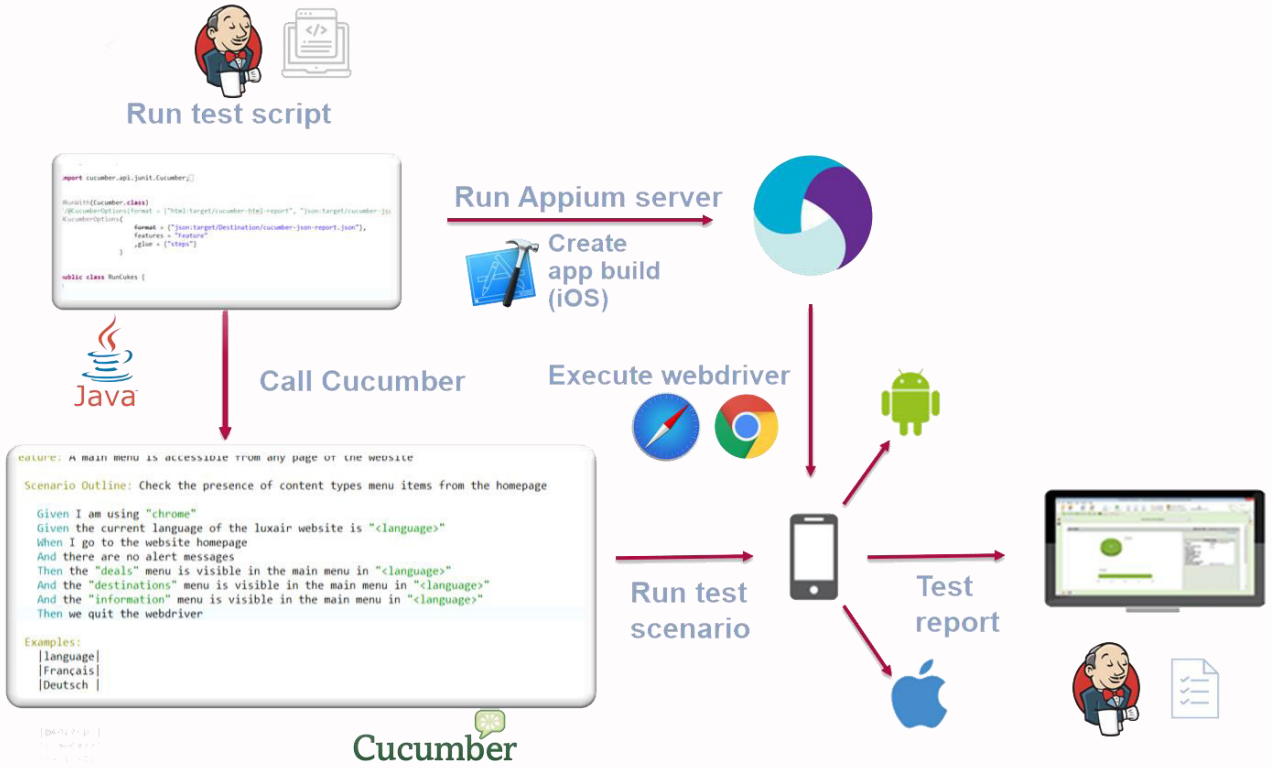
Test run



4- Demo of UAT Automation

Live demo with 4 different devices

Samsung A5 under Android 7.0

iPhone 7 under iOS 11.2.4

Sony Xperia XZ1 under Android 8.0

HTC U11 under Android 7.1.1

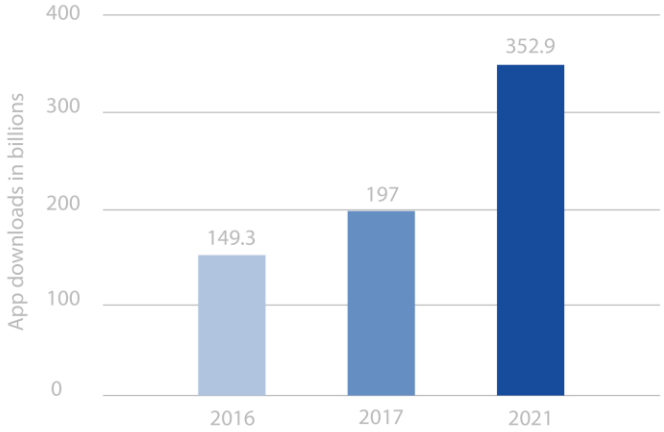
- Threads run in parallel.
- Unified reports.

5- Outlook in the future

App usage will increase

- App download estimation: over 79% increase in the next 4 years
- Market points towards mobile app direction

Source: TechCrunch



Pitfalls

- SDKs and tool versions not aligned with OS.
- Test environment restrictions.
- iOS device driving requirements.
- iOS parallel testing is tricky.
- App code is not test-friendly.
- Powerful hub machines.
- Appium API deprecations.
- Different Android implementations.
- Steep learning curve.

What remains as is and prospective improvements

- Solution remains self-hosted and using Gherkin.
- Performance tests: JMeter/Locust:
  - Load/Stress Testing: web and webservices.
  - Measure global performance in terms of time.
- Security tests: OWASP Zed Attack Proxy/ LinkedIn QARK.
- Improved test reports.

Thank you for your attention!