

**SQGNE** Software Quality Group  
of New England

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Dedicated to Software Quality Professionals  
www.sqgne.org

**WELCOME TO SEASON 23!**

- SQGNE is made possible by the support of our sponsors:




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**WELCOME TO SEASON 23!**

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- All-volunteer **non-profit** with no membership dues!
- Supported entirely by our sponsors...
- Over **1,400** members on LinkedIn, **945** Constant Contact
- **196** members have joined our Meetup Group
- Monthly meetings - Sept to June on 2<sup>nd</sup> Wed of month
- **SQGNE Web site.**  [www.sqgne.org](http://www.sqgne.org)

**SQGNE** Software Quality Group  
of New England

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## Officers / Hosts / Mission

### Current Officers:

- John Pustaver – Founder
- Stan Wrobel– President
- Robin Goldsmith – Vice President
- Barbara Wioncek – Treasurer
- David Sullivan– Clerk

### At-large Directors:

- Candace Murphy
- Marge Shinkle
- Jim Turner

### Our Gracious Hosts:

- Genesys, Inc.
- Donna Arcand

### Mission

- To promote use of engineering and management techniques that lead to delivery of high quality software
- To disseminate concepts and techniques related to software quality engineering and software engineering process
- To provide a forum for discussion of concepts and techniques related to software quality engineering and the software engineering process
- To provide networking opportunities for software quality professionals

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## Nomination Process

- Nominating Committee solicits nominations for all positions, including: President, Vice-President, Treasurer, Clerk, and three (3) At-large Directors.
- Nominating Committee ensures that all nominees agree to their being nominated and to conduct themselves in accordance with SQGNE By-Laws which are posted on the SQGNE website.
- Roles and responsibilities for offices are outlined in the By-Laws <http://www.sqgne.org/by-laws-Jan-2016.pdf>
- Nominating Committee can accept nominations up to the close of the May Meeting.
- At the June Meeting, Nominating Committee presents a slate of candidates for a vote. Write-in candidates are not accepted.

**Nominating Committee:** Ann Cultrera <[ann.cultrera@gmail.com](mailto:ann.cultrera@gmail.com)> and Mike Arnold <[mmrnl@gmail.com](mailto:mmrnl@gmail.com)>

Aug 2015  
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## SQGNE 2016-17 Schedule

Speaker	Affiliation	Date	Topic
Bob Crews	Checkpoint Technologies	Sept 14	Shift Left Testing: What the heck does that mean?
Michael Durrant	Everquote	Oct 12	Web Automation Fundamentals
Derek Kozikowski	Zoominfo	Nov 9	Using Selenium For Web Application Testing
Dave Todaro	Ascendle Technology LLC	Dec 14	Testers and Developers are Best Friends
Robin Goldsmith	Go Pro Management, Inc.	Jan 11 2017	YOU Don't Need No Stinking Test Cases
Barbara Wioncek, Stan Wrobel	Draper, SQGNE	Feb 8	Peer Reviews – Still Relevant in the Agile/Scrum Era?
Joe Zec	Shire Pharmaceuticals	Mar 8	How to build quality into software in 6 easy steps
Nikhil Kaul	SmartBear	Apr 12	Mobile App Testing: What and How to Test?
David Bolton	Applause	May 10	In Their Shoes: Understanding Your Mobile User's Point of View
SmartBear and Checkpoint Tech	SmartBear and Checkpoint Tech	June 14	Test Tool Bakeoff <i>Annual Election of Officers</i>

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## Tonight's Topic

Mobile App Testing: What and How to Test?

Speaker: Nikhil Kaul

### Meeting Abstract:

- With Apple, Google, and Microsoft making it easier for developers to build cross-platform apps, mobile app testing will continue to come under more pressure. There is more to test in less time. Simultaneously, with releases such as Windows 10, the line between desktop and mobile is getting blurred, essentially meaning traditional testing frameworks wouldn't work for long. Add to all of this, the challenges mobile app testing faces from increased API dependency, fragmented marketplace, and hardware data determining the user experience. And with app store approval processes becoming more stringent, these challenges just continue to grow. Join Nikhil to learn about the recent trends in mobile app development and what they mean for testers. Gain insights into how to roll out a robust mobile app testing framework, while following reusability practices that reduce testing time.
- Learn how to build a scalable testing framework that reaches beyond the GUI to the API layer
- Enable teams to work in parallel and start earlier by reducing inter-team dependencies
- Apply reusability practices for both functional and non-functional testing scripts

### Biography:

- Nikhil is Product Manager, Testing Products at SmartBear Software, the leader in software quality tools for the connected world. Prior to SmartBear, Nikhil served Digité, a leading provider of Application Lifecycle Management solutions, in various roles including Senior Software Executive. There, he gained insights into software development and testing market. Nikhil received a master's degree in business administration from Georgetown University. He is very involved in discussions taking place in development and testing communities. His most recent thoughts can be found in [Forbes](#) and [CIO.com](#). Follow him on Twitter [@kaulnikhil](#) or read his [blog](#).

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# Mobile App Testing:

## What and How to Test?

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### Quick Intro

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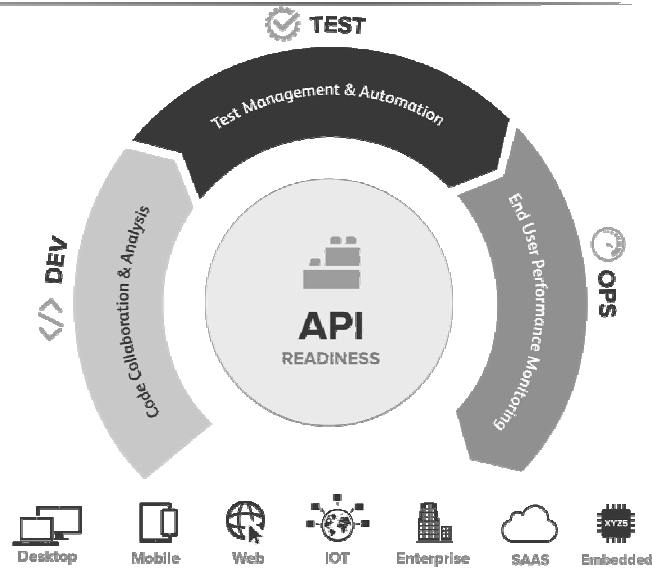


Nikhil Kaul

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## Intro to SmartBear



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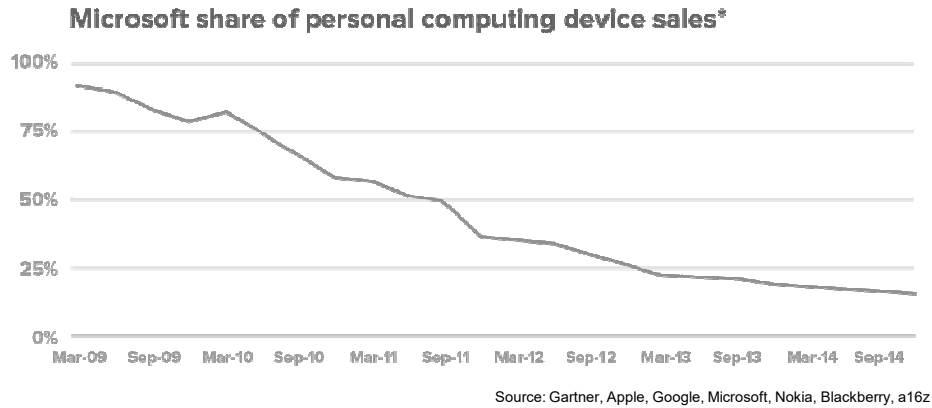
## On our plate today

- ① Mobile testing trends
- ② What these trends mean for testers
- ③ Practices that can help facilitate the transformation

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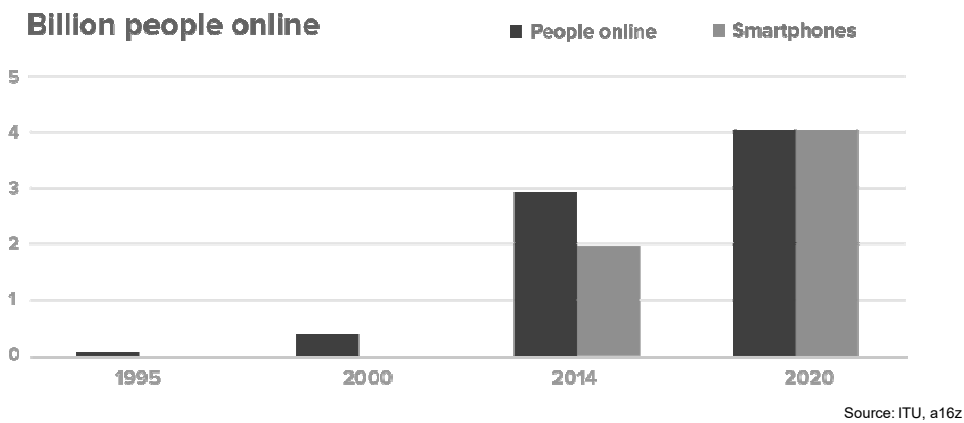
## The move away from Microsoft



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## Another 1 billion to come online



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## \$25 entry point for 3G Android



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## Traditional challenges are multiplying

Fragmentation	Hardware Dependence	Variety of Input Types	External Factors
<ul style="list-style-type: none"> <li>• Operating systems</li> <li>• Device type</li> <li>• Screen size</li> <li>• Hardware dependence</li> </ul>	<ul style="list-style-type: none"> <li>• Wi-Fi</li> <li>• Accelerometers</li> <li>• GPS</li> <li>• Compass</li> </ul>	<ul style="list-style-type: none"> <li>• Swipe</li> <li>• Pinch</li> <li>• Drag</li> <li>• Drop</li> </ul>	<ul style="list-style-type: none"> <li>• APIs</li> <li>• Performance                             <ul style="list-style-type: none"> <li>– Wi-Fi</li> <li>– Network</li> </ul> </li> </ul>

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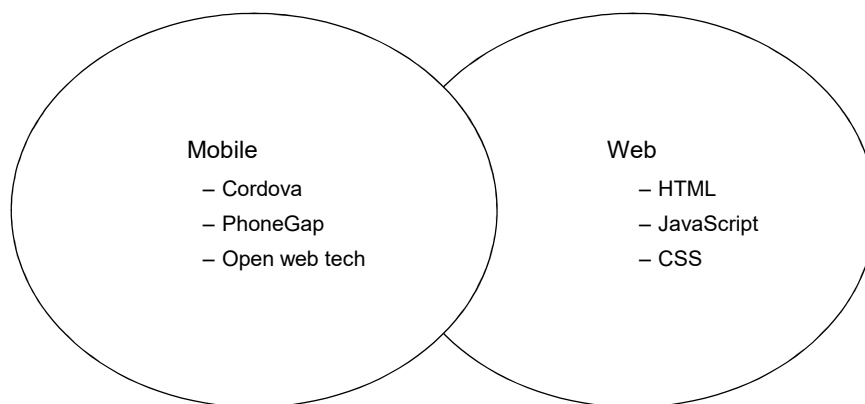
## The way apps are being built is changing

- Cross-platform dev becoming easier
  - Microsoft buys Xamarin
  - Windows 10
    - Universal Windows Apps
    - Write once & deploy it across platforms
  - Apple making Swift open source

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## Web and mobile worlds colliding



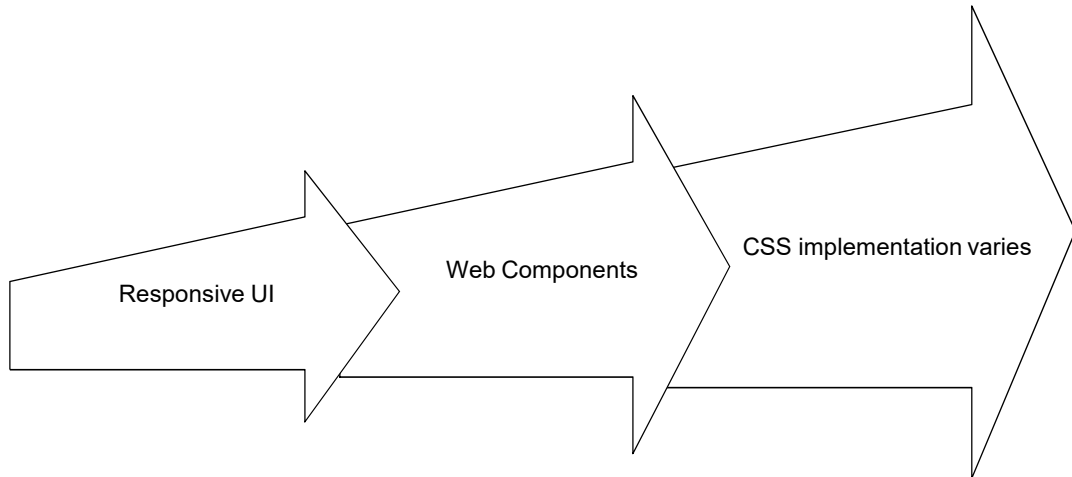
React, React Native, Combined JSX

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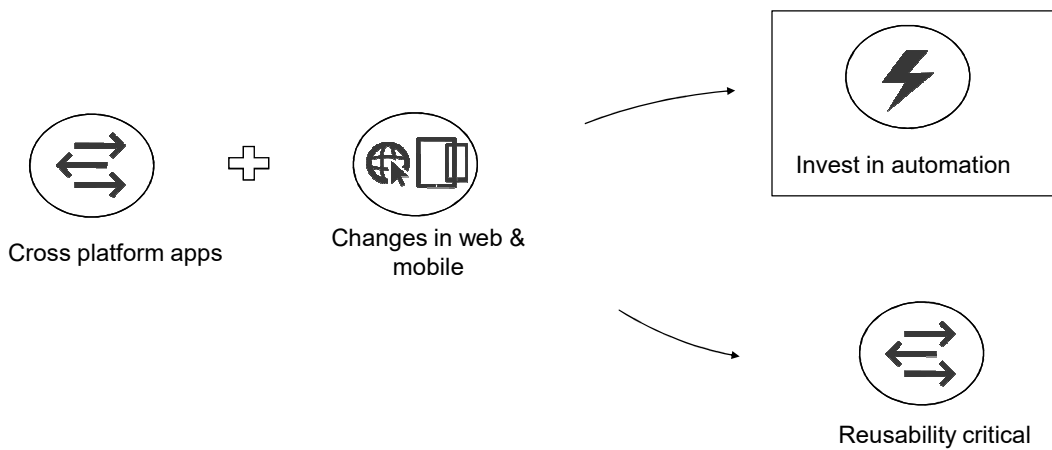
## Web continues to get more sophisticated



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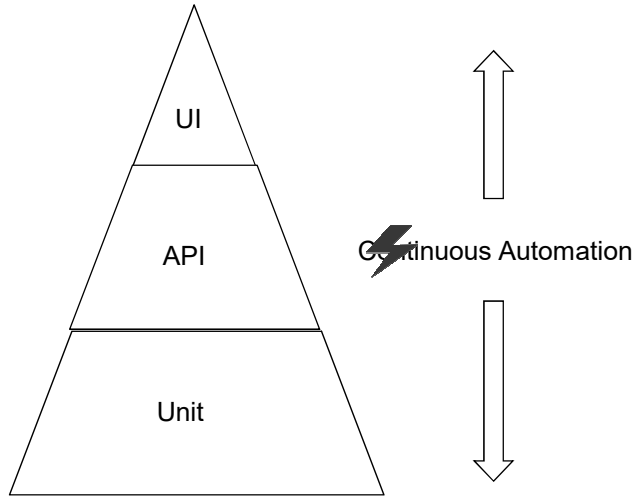
## More to test in less time



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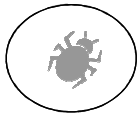
## Investing in automation often is limited to



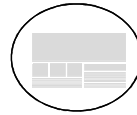
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## But often this might not be enough



Bugs might go unnoticed



Test environment provisioning is manual

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## Areas where automation falls short



Right colour, shape, size



Overlapping elements

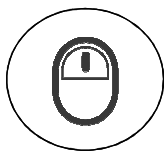


Appearance/Usability

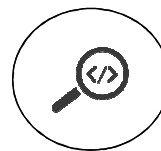
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## This is why you need a combination of



Manual

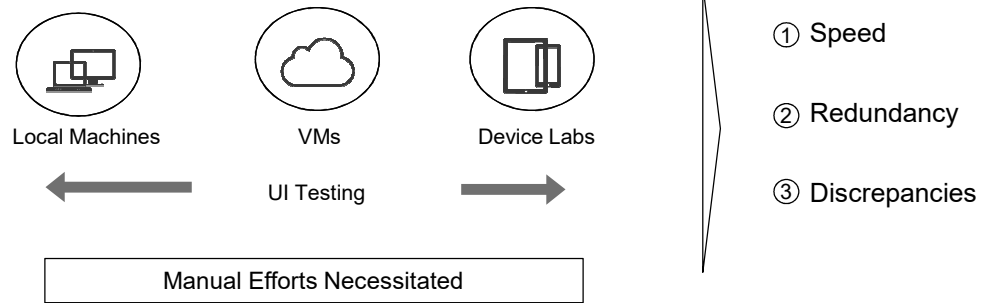


Visual Testing

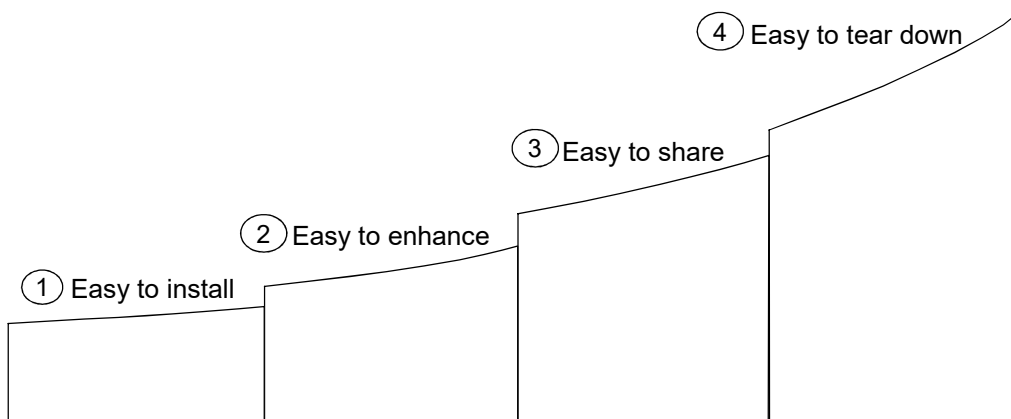
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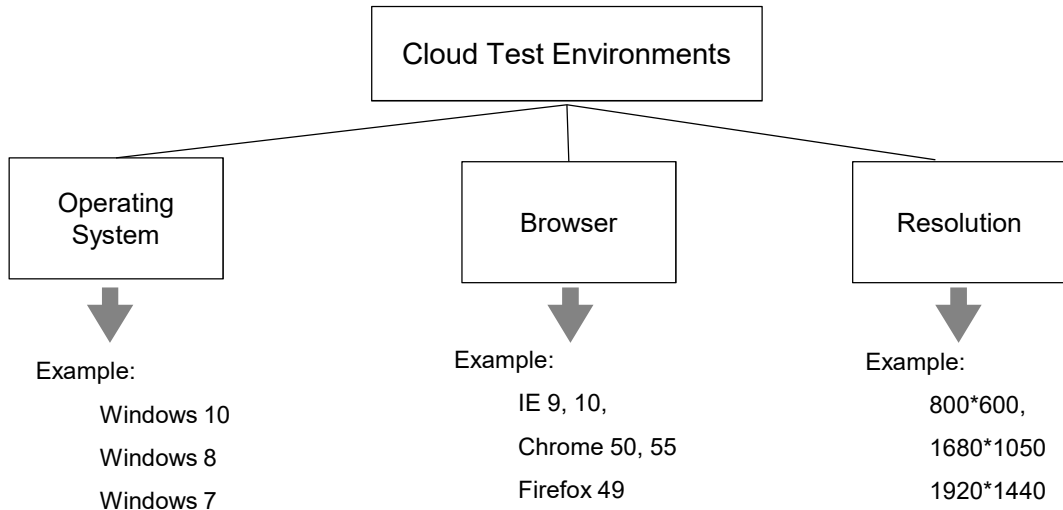
## Environment setup often needs manual efforts



## For effective environment management



# Cloud test environments come handy



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# Selecting the right test environments

General Information

Title: Report for Test Environments

Report Content

Report Tab x + add report tab

Name: Report Tab

Type: Explorer Flat Table Map Overlay

Metric Groups

Metric Group: Sessions + add metric

+ Add metric group

Dimension Drilldowns

Operating System  
 Browser  
 Browser Version  
 Screen Resolution  
 + add dimension

Operating System

Sessions % Sessions

Operating System	Sessions	% Sessions
1. iOS	7,078	46.70%
2. Android	6,553	43.23%
3. Windows	1,219	8.04%

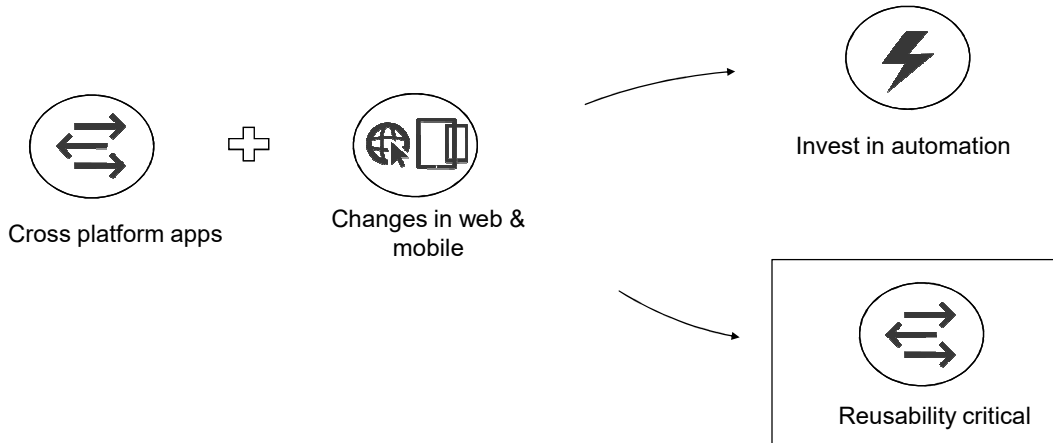
Operating System Version	Acquisition
	Sessions % of Total
	7,076 % of Total (205,063)
1. 9.2.1	4,390 (62.04%)
2. 9.2	868 (12.27%)
3. 9.1	353 (4.99%)
4. 8.3	239 (3.38%)
5. 8.4	164 (2.32%)
6. 8.4.1	156 (2.20%)
7. 8.1.3	127 (1.79%)

80%

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# More to test in less time



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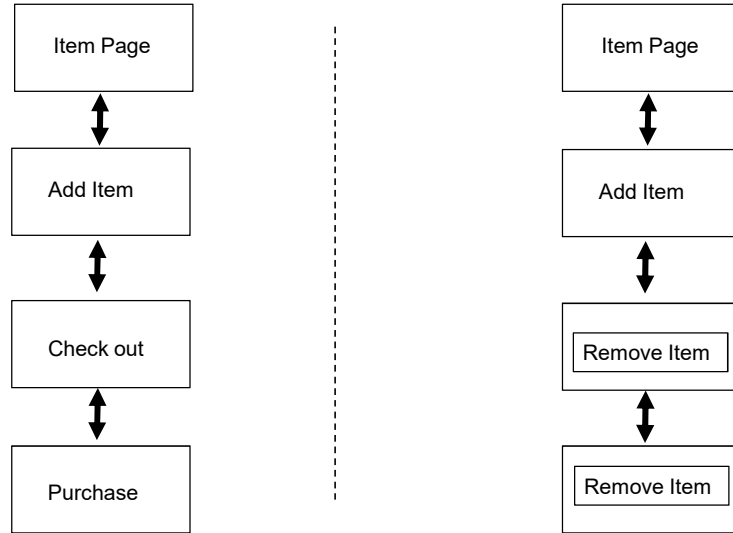
# Build a modular test design

The screenshot shows the Amazon product page for the book 'Zero to One: Notes on Startups, or How to Build the Future' by Peter Thiel. The page includes the book cover, a 'Look inside' feature, a list of formats and prices (Kindle, Hardcover, Paperback, Audible, Audio CD), a 'Buy New' price of \$16.04, and a 'Buy Used' price of \$10.85. It also features a 'Frequently Bought Together' section and a 'Share' button.

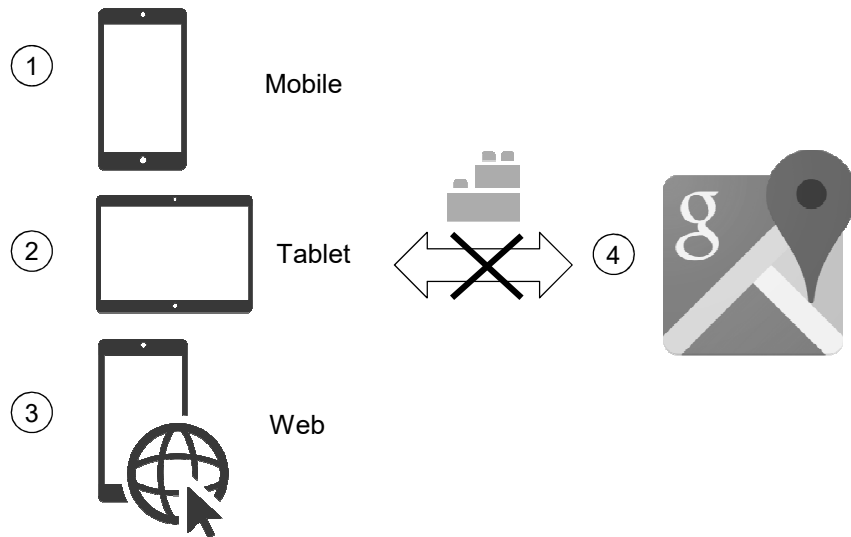
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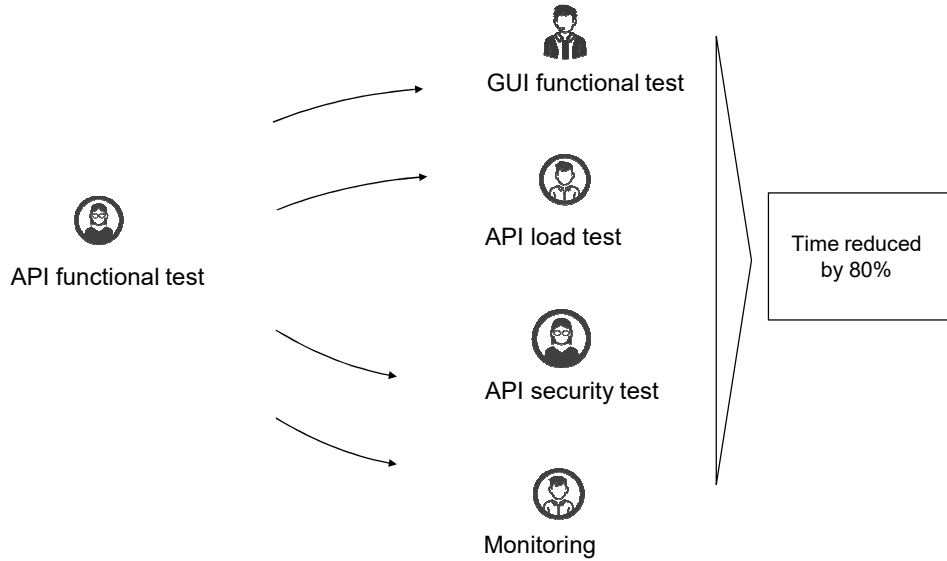
### Real world example could look like...



### Don't forget about the impact of API on GUI



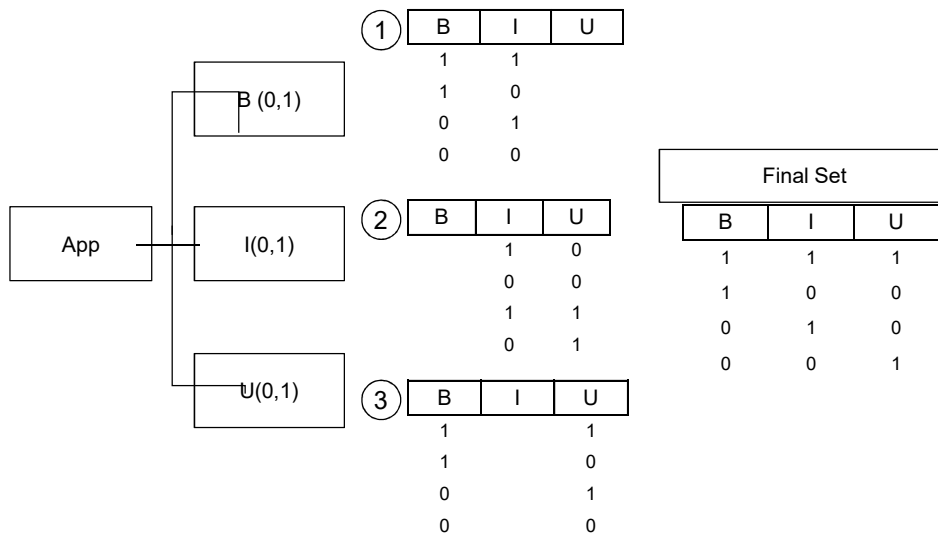
## Another area where this comes in handy



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## Use PairWise testing to cut down tests



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## Takeaways

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①

Don't limit yourself to test automation

②

Start small and build a modular test design

③

Integrated GUI and API testing is key

③

Reuse tests across software development lifecycle

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# Questions?

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