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# PROGRESSIVE WEB APPLICATIONS

*THE FUTURE OF WEB DEVELOPMENT?*



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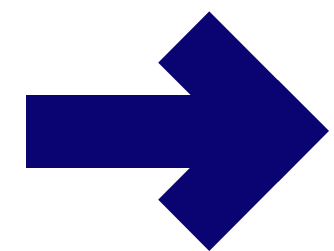
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# What are Progressive Web Applications (PWAs)?



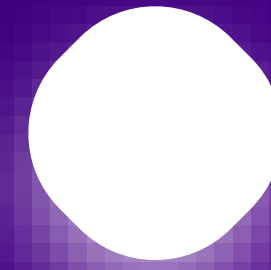
- Web Applications ( HTML, JS, CSS )
- Integrate well with the underlying mobile device
- Use **manifest** and **service worker** files
- 2007 – Steve Jobs
- 2015 – Chrome development team (Frances Berriman, Alex Russell )





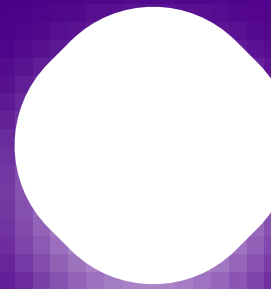
# Current mobile development technologies

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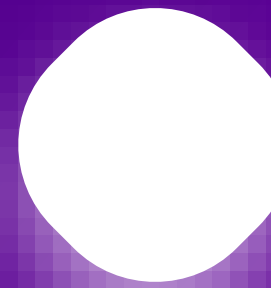
## Native apps

- 1 platform
- Deployed through app store
- Full platform capabilities



## Cross Platform Apps

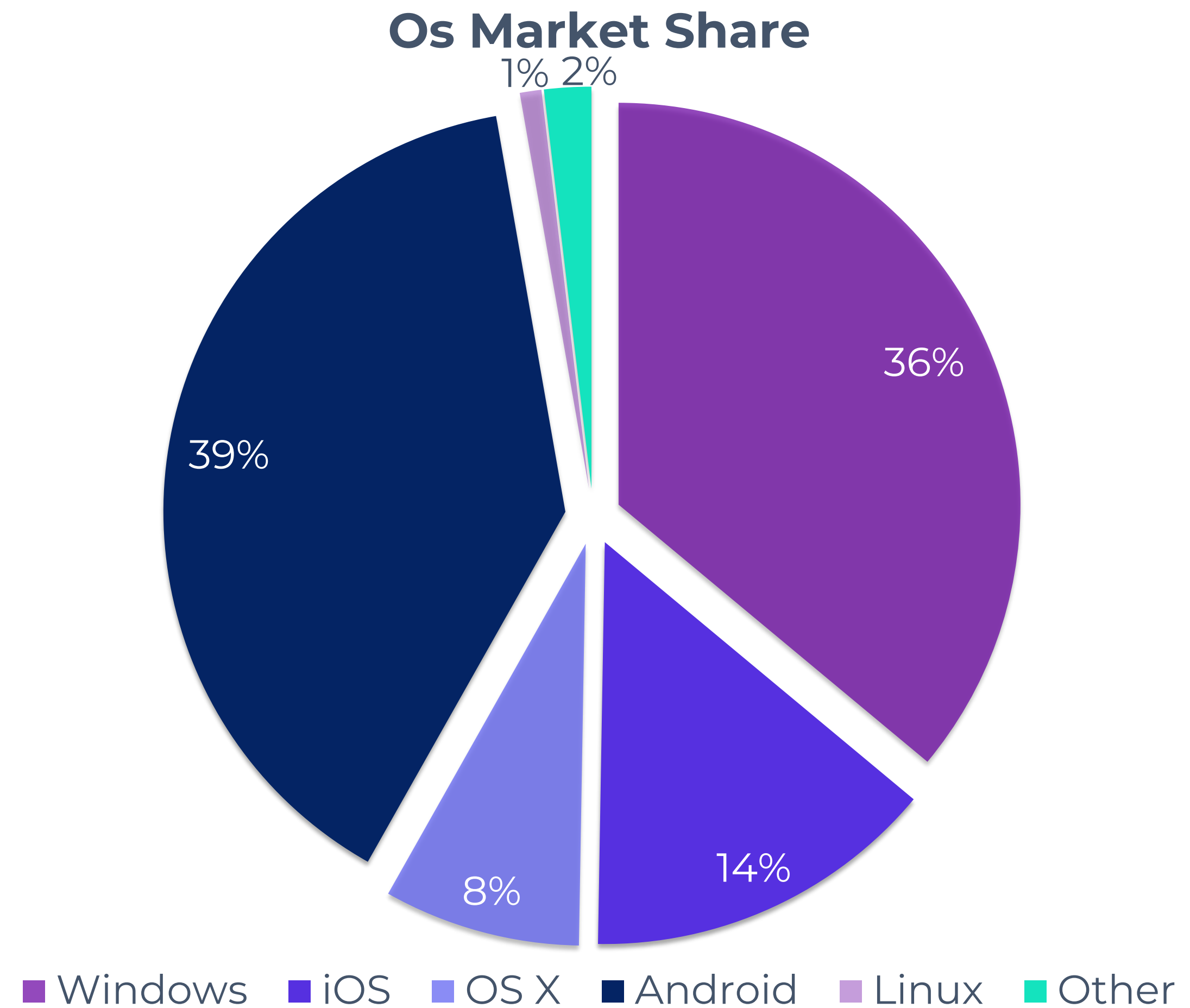
- Cross platform
- Deployed through store
- Need specific hardware to test on iOS



## PWA

- Cross platform
- No specific hardware needed (browserstack)
- Does not need to comply with app store
- Updates applied automatically
- Fastest time to market
- Most cost effective

# Which native mobile platform?

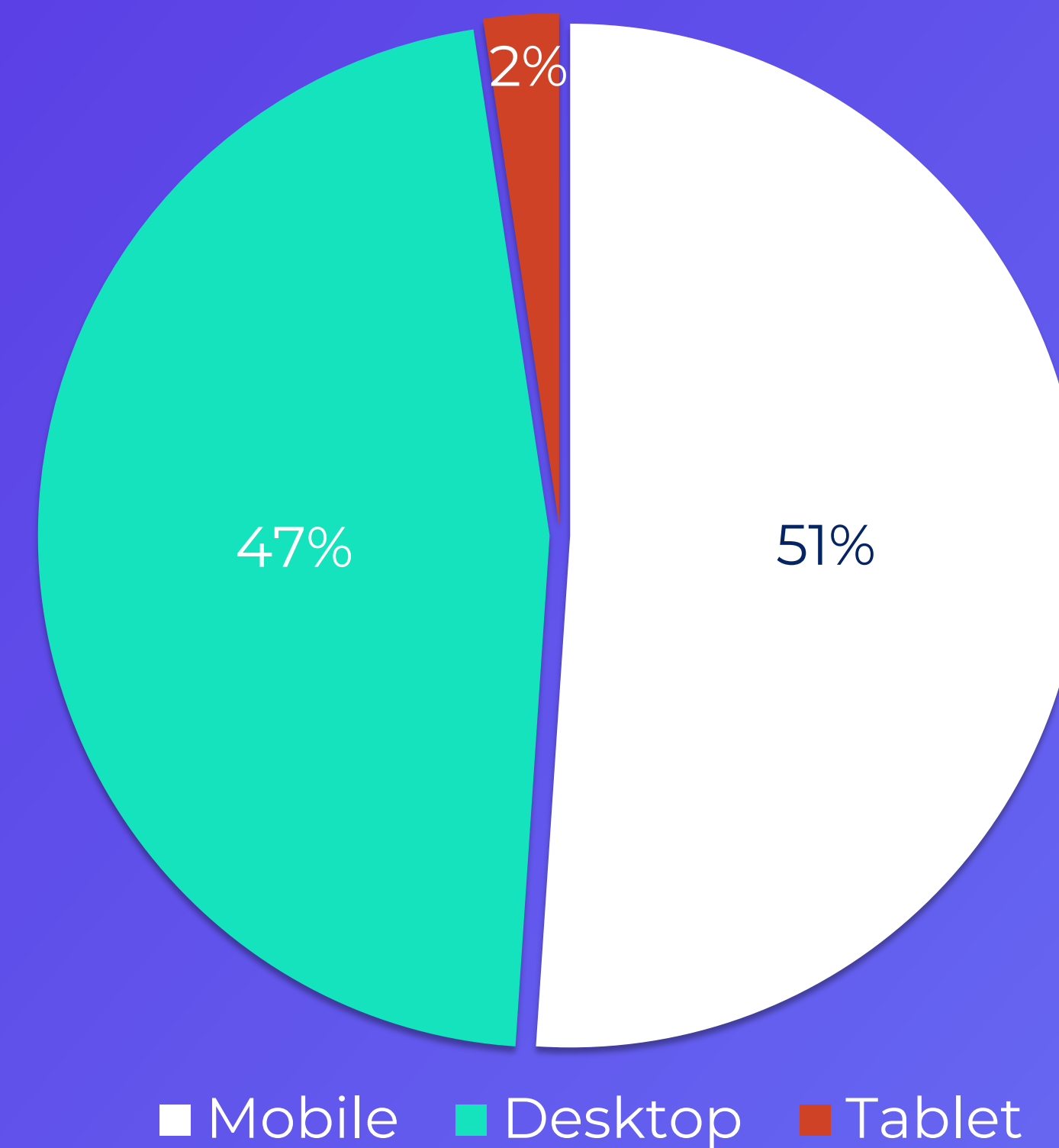


# What about desktop?

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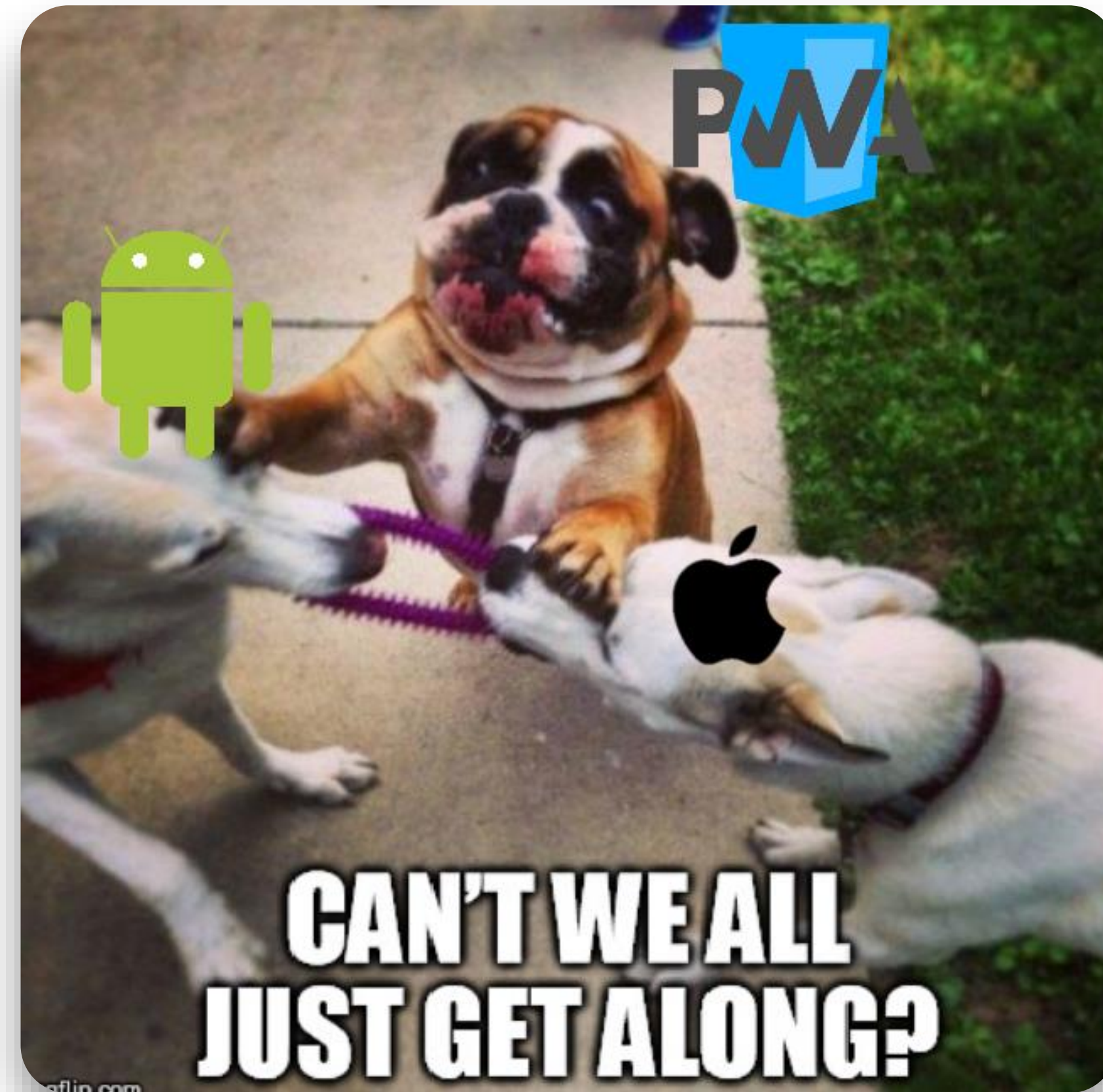


Internet Usage per Platform  
(2020)





**CAN'T WE  
GET ALONG?**



# What are the major advantages of a PWA?

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1 Application for all platforms (mobile and desktop)

1 development team, with a web technology background

Shortest time to market

Engaging user experience (compared to web apps)

Easily maintainable (compared to native/cross-platform apps)

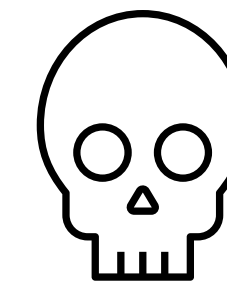


# IOS: No web push

## What to use instead

Parameters	Email	SMS	Push Notifications
First Reach	Slow	Fast	Fast
Open rate	above 23%	above 90%	above 90%
Cost	Medium	High	Low
Sender's Identity	Clear	Often unclear	Clear
Engagement	Medium	Medium	High
Coverage	Medium	High	Medium

# Do we need app stores?



- Provide some security and guidelines
- Provide discoverability
- Risk that your app may be banned due to arbitrary measures
  - This can happen if you do not implement Apple pay in your app



**Work from  
anywhere**

**WHO?**

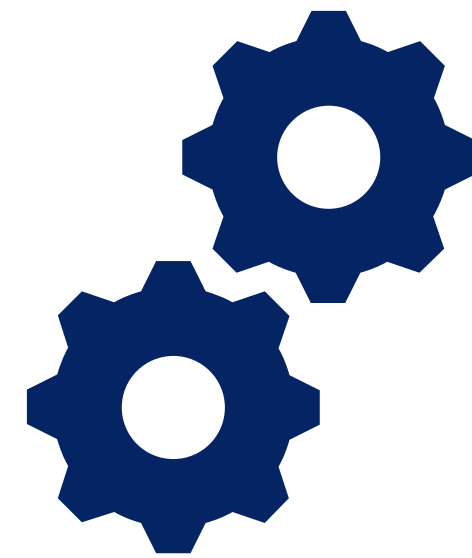
**WHERE?**

**WHAT?**





# CHECK! FIX! REPLACE!



## **Complex Service Workflows**

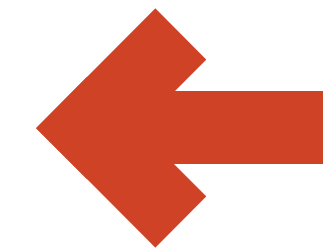
Administering/  
Auditing systems  
Enforcing Correct Process



## **Replacing Paper**

Automatic Form filling  
Saving Costs





# Selective Waste Management

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- **Navigating between sites**
  - Collecting waste based on filling
  - Register deviations
  - Print receipt on site through bluetooth
  - Collect weight of waste from sensor





# Servicing printers and vending machines

- **Helping the workflow**

- Error Codes
- Type of parts
- Signatures
- Location information
- Sending pictures

- **Maintaining**

- Completing checklists



# Further applications

**Construction  
Sites**



**Earthwork**



**Energy  
Sector**



**Vegetation  
Control**





- 70% - Web development knowledge
- 10% - How to set it up / how it works
- 20% - Experience

« **Required  
knowledge to  
develop a PWA**

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# Want to use a PWA?



- Need to support different mobile platforms
- Desktop might be also relevant
- Field service digitalization
- Complex workflows
- Tight budget or fast prototyping



# Is this the future of the WEB?



- Better user experience than a traditional web app
- Best fitted to Single Page Applications
- What about legacy systems?
  - Create a proxy Web API
  - Create an SPA
- PWA increase user engagement and conversion rates



Q&A

Is this the future  
of the WEB?  
What do you think?

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**Thank you for  
your attention!**