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Google Developer Group

The Web in the Mobile-First Era

How the web evolved from 1989 to 2020 and where it's heading next

What We'll Cover

Agenda Plan

From statistics to web developer prospects

- Context: ecosystems and mobile first
- Web/mobile timeline: 1989 → 2020
- Web developer prospects and frontend trends
- Fintech practice: web, PWA, cross-platform

Part 1

01

Context

The digital ecosystem development org

What’s Under the Hood

Context Areas

What our digital ecosystem org runs

- Public web of the flagship sites
- Mobile banking app
- Data platform + acquisition automation
- Special projects + shared infrastructure

Part 2

02

Today

Internet and mobile user statistics

More than half the web is a phone

Statistics Digital 2020

People online

4.57B

Digital 2020, We Are Social

Unique mobile users

5.16B

about two thirds of the population

Web traffic from mobile

52%

desktop 45.3%, tablet 2.7%

If It Fails on a Phone, It Fails

Implication Mobile first

Mobile-first design + performance

- Phone-first design, or it fails
- Performance budget > visuals
- Touch first + 3G/offline resilience
- Bundle size — the main frontend KPI

Part 3

03

Timeline 1989 → 2020

30+ years of web and mobile evolution

Birth of the Web

Era 1 1989-1999

WWW + JS

- 1989 — WWW concept
- 1990–1991 — HTTP/URI/HTML
- 1993–1994 — Mosaic, Netscape, W3C
- 1995–1998 — JS, browser wars, CSS2/PHP

Web 2.0 and Mobile

Era 2 2000–2009

AJAX, jQuery, iPhone, Android

- 2000 — Windows Mobile
- 2004 — Web 2.0 and AJAX Gmail
- 2005–2006 — Rails, Maps, jQuery
- 2007–2009 — iPhone, Android, Chrome

Acceleration

Era 3 2010–2019

SPA, hybrid, React Native, PWA

- 2010 — AngularJS, Backbone, SPAs
- 2011 — Apache Cordova, Windows Phone
- 2013 — React, micro-frontends emerging
- 2015–2019 — RN, ES2015, PWA, Flutter

The Web Has Caught Up with Native

Today 2020

Mature web + mobile + cross-platform

- React, Vue, Angular — SPA standards
- ↗next.js, Nuxt — SSR meta-frameworks
- PWA/RN/Flutter — near-native
- WebAssembly, edge, serverless go mainstream

Part 4

04

Web Developer Prospects

What’s in demand right now

One stack, four platforms

What the web wins over native development

- A browser exists on every platform
- No app stores and no review
- Updates reach users instantly
- A lower barrier to entry than native

Part 5

05

Examples from Practice

What we do at a large fintech

Four ways to build for mobile

Choice Quadrant

By full functionality and by complexity

- PWA — web plus a manifest
- Hybrid — native shell around a WebView
- Cross-platform — write once, run anywhere
- Native — write twice, everything available

Start an idea on the web

Rule Where to start

Then follow whatever the idea proves

- Testing an idea — web and PWA
- Need the stores — a native shell
- The idea took off — native development
- Avoid writing twice — React Native or Flutter

The web moves fast, but entry is still cheap

- The pace of change is very high
- Starting on the web is simple and fun
- One stack, almost every platform
- More constraints than native

- start on the web, then follow the evidence

AI first is replacing mobile first

What's next AI first

- Mobile development is commoditizing
- AI first — Facebook and Google, 2016
- How does a web developer get there?
- ↗tensorflow.js — in the browser and in ↗node.js

Part 6

06

Useful Resources

Where to go next

References and Materials

Sources References

Mobile-first, standards, PWA, frontend

- Digital 2020 + ↗web.dev
- MDN — the web standards reference
- State of JS/CSS — annual surveys
- Frontend channels and podcasts

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Thank you!

All slides and links — in the Telegram channel

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