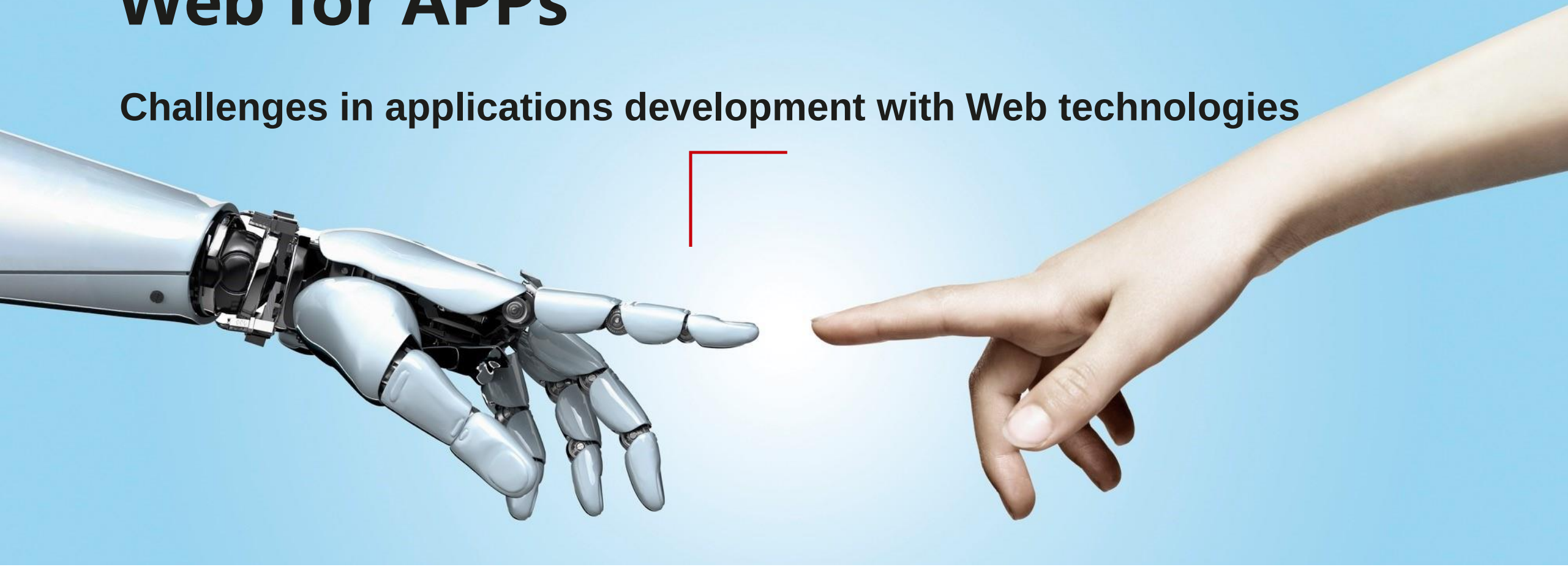
Web for APPs

Challenges in applications development with Web technologies



Security Level:

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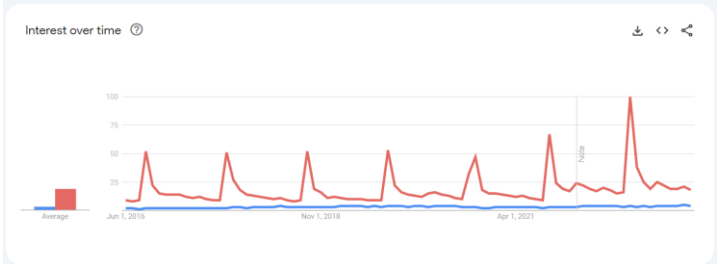
The growing trend of Web technologies in application

7 Predictions For The Web:

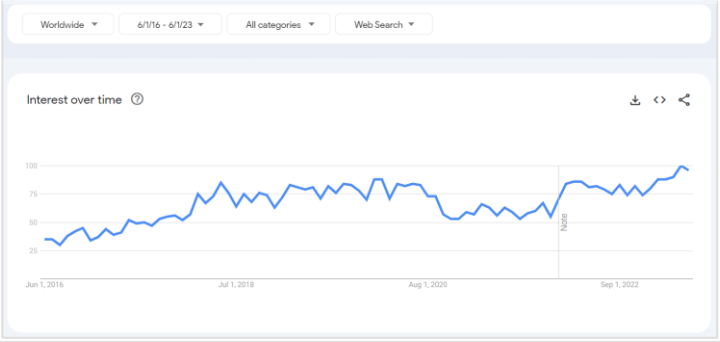
Web Apps, never stop growing

Websites

Web Apps



Progressive Web Apps

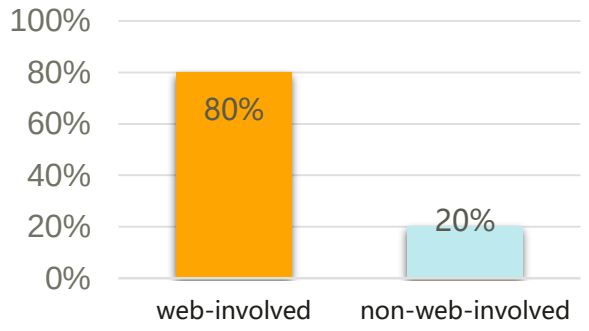


James Bankoski : **85%** of All Apps use some level of web tech. (Blink On 17)

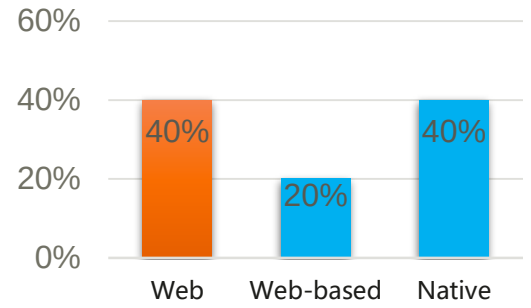
The Future:

A Better Web

Top1000 Apps: 80% apps involve Web, 60% app pages are Web-based



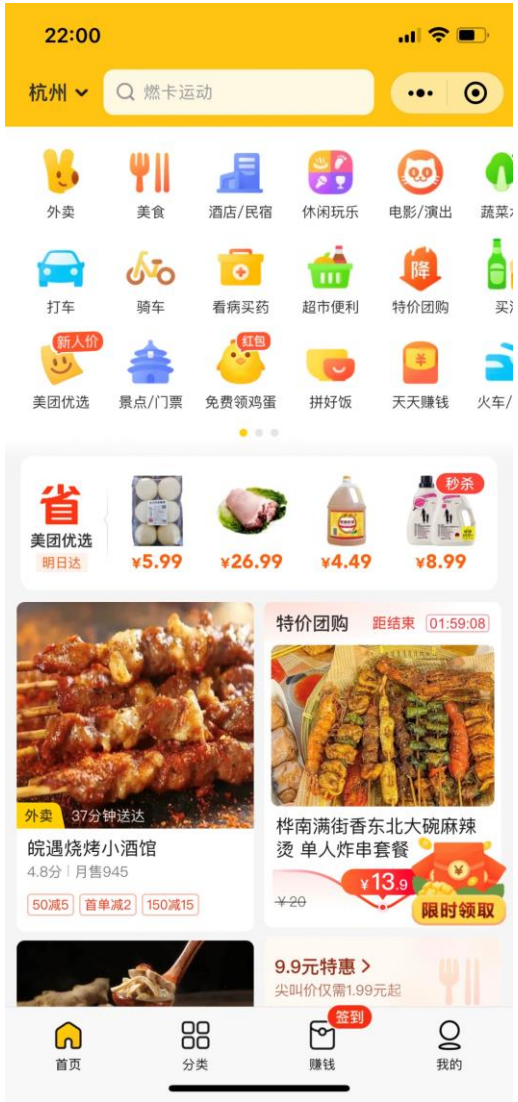
Proportion of Web-involved applications



Proportion of Web-tech in single application

Different forms of Web technology in application

Meituan
Native APP

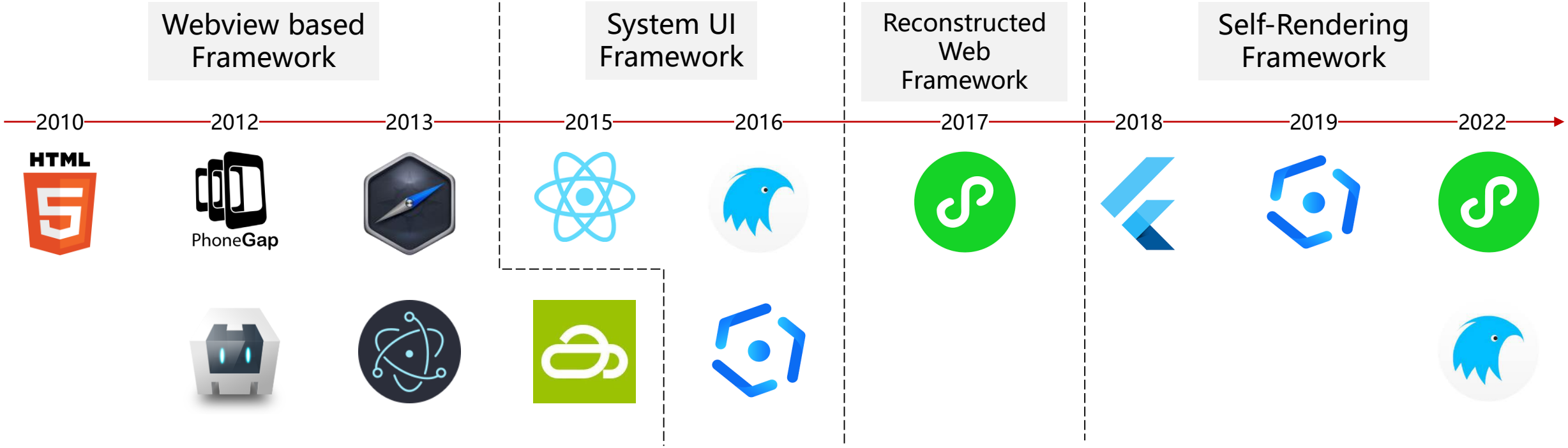


Meituan Mini APP
In WeChat

Secondary Page
of Meituan

Ad Page in
Meituan

The history of the app-oriented Web technology



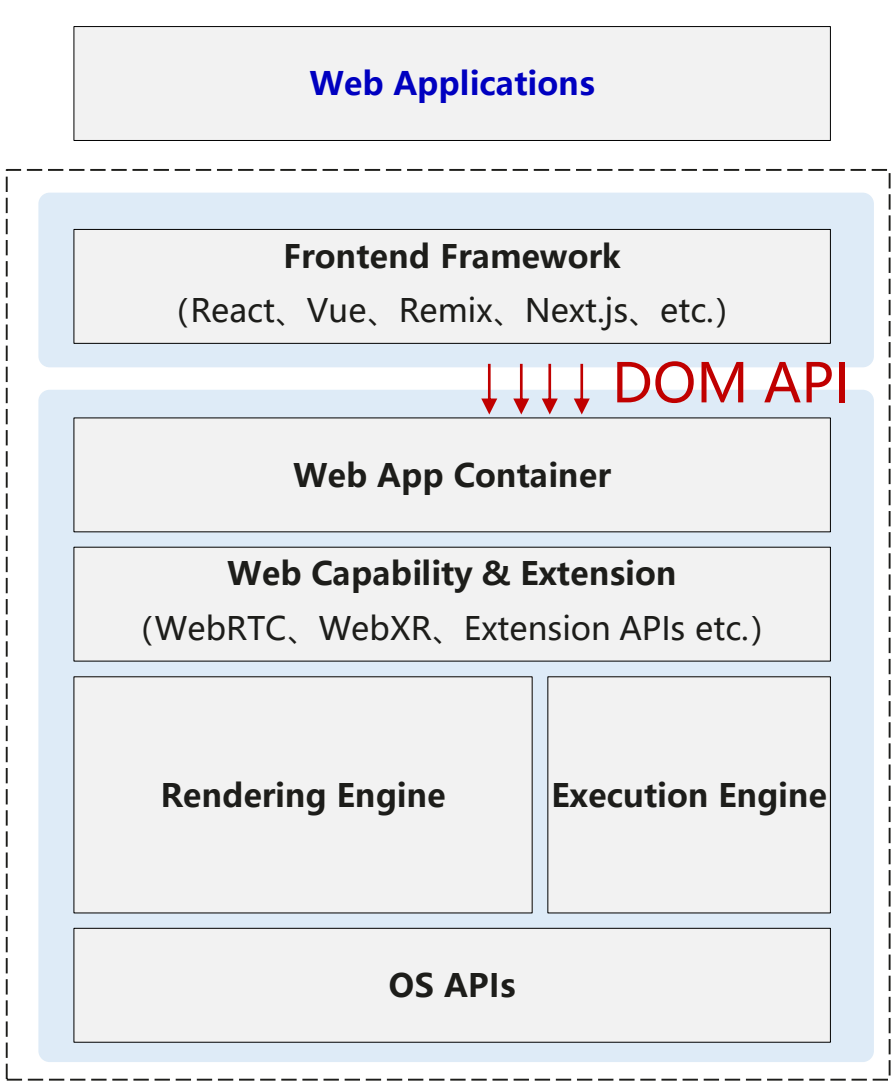
Native Device APIs
App framework

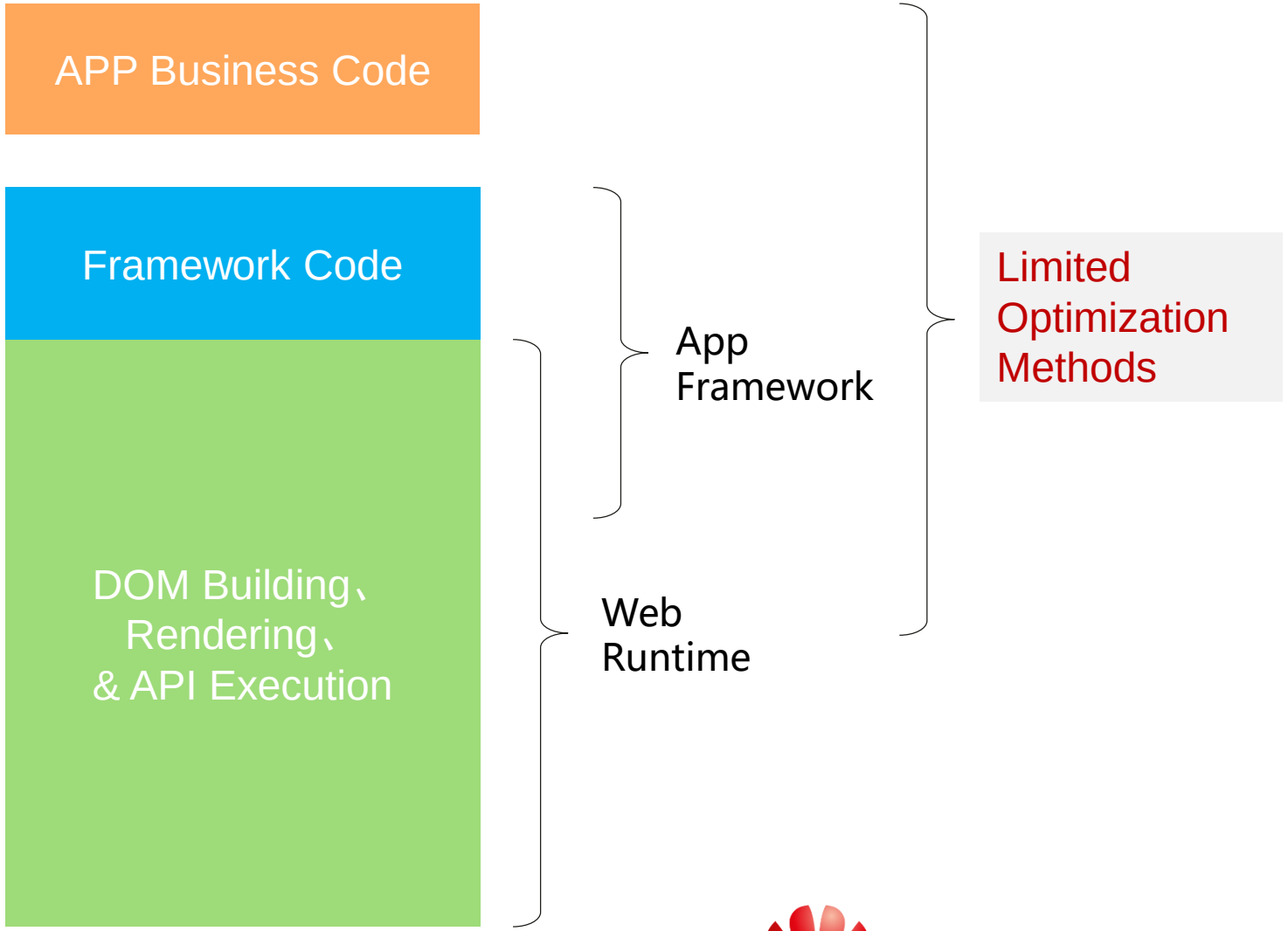
Performance
User Experience

Performance
App framework
Ecosystem

Performance
- Unified Rendering Engine
- Accelerated Execution Engine

Key issues of the app-oriented Web development





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WASM is better, but rarely used

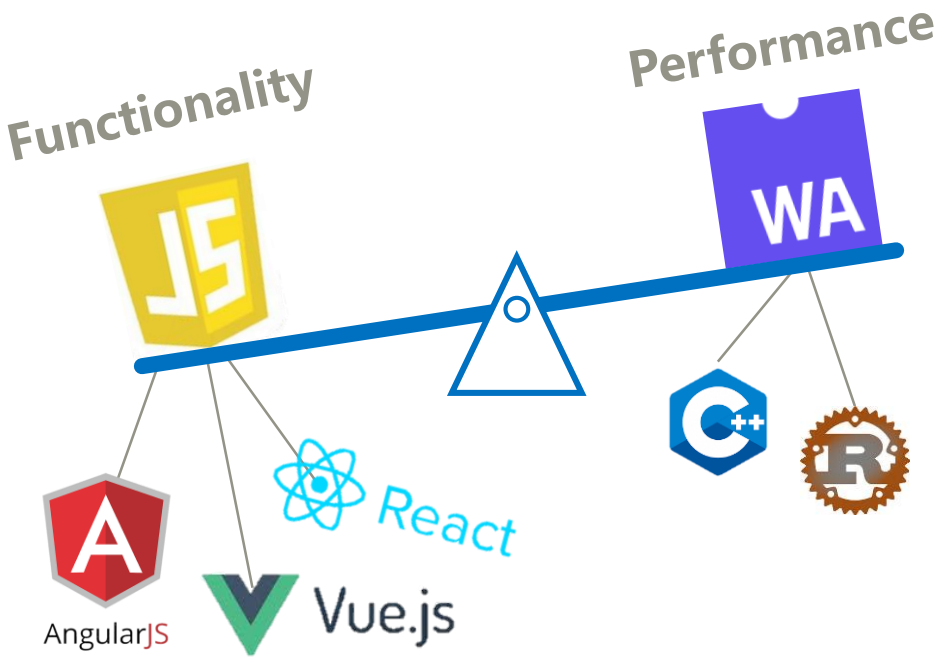
AUTOCAD Figma FFmpeg  Games ...

No one touches DOM

Javascript success in:
- ✓ GUI by DOM
- ✓ Human-Machine interactive
- ✓ Huge lagecy librarys
- ✓ All kinds of frameworks

Javascript Shortage:
- x Performance is poor

Can we only choose one or another?



WASM success in:
- ✓ Compute task
- ✓ Codec
- ✓ 3D renderengine
- ✓ CAD

WASM Shortage:
- x Can’ t Access Web API
- x Hard to coding (C++/Rust)

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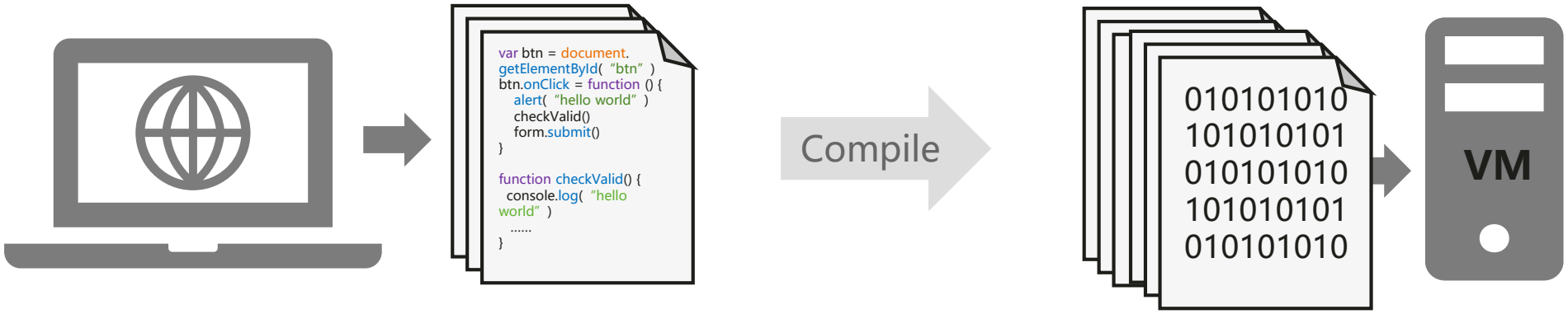
Can Web benefit from both WASM & JS(TS) ?

JS continues to be the programming language for Web
WASM as an App development execution language

JavaScript is comfortable coding language **for human**

Web Assembly is a effective byte code **for machine**



Development efficiency + Performance

We want both!

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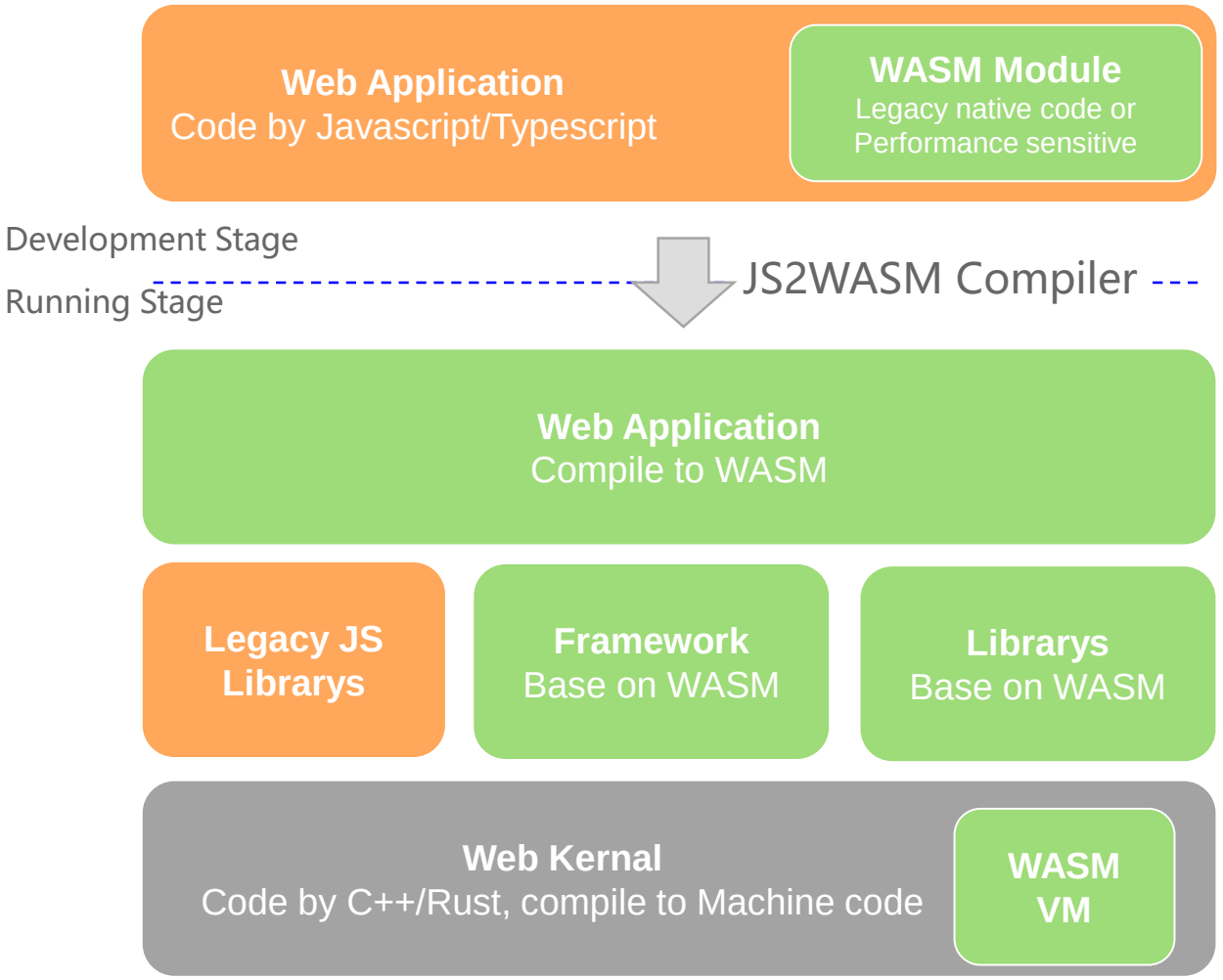
An Ideal Web Application Development Model



- Rapid developement

- Performance & Cross-Platform
- Access to both Web & Native Ecosystem

- Best Performance on the certain platform

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What’s difficult

Lacking of efficient FFI

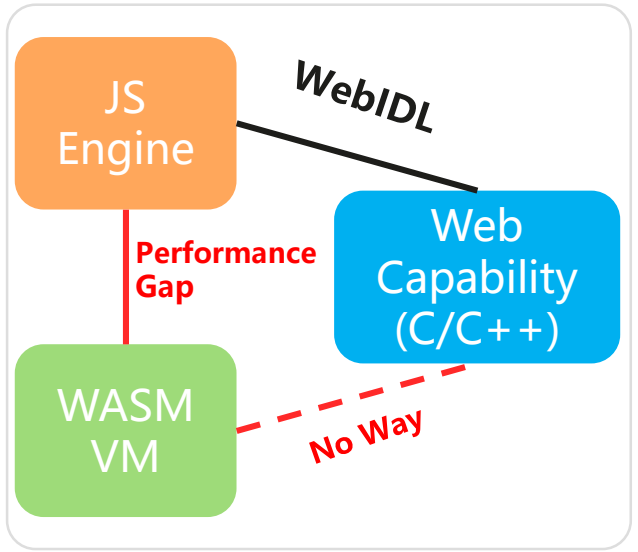
- Can’t call DOM/Web API directly
- Low communication efficiency with JS Engine

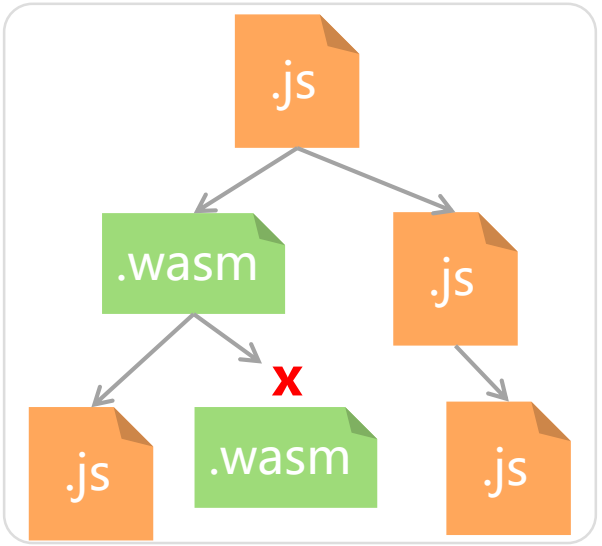
Lacking of modular feature

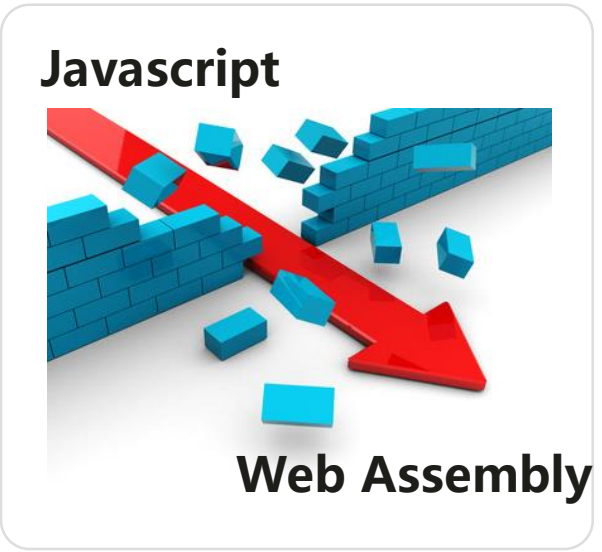
- Big project unfriendly
- Limit of library ecosystem
- Difficult to adapt to existing frameworks

Lacking of solid compiler

- C++/Rust not fit for web developing
- Javascript to WASM is difficult (dynamic type, gc, eval() ...)







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Thank you.

把数字世界带入每个人、每个家庭、
每个组织，构建万物互联的智能世界。

Bring digital to every person, home and organization for a fully connected, intelligent world.

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