Extending Tizen Native Framework with Node.js

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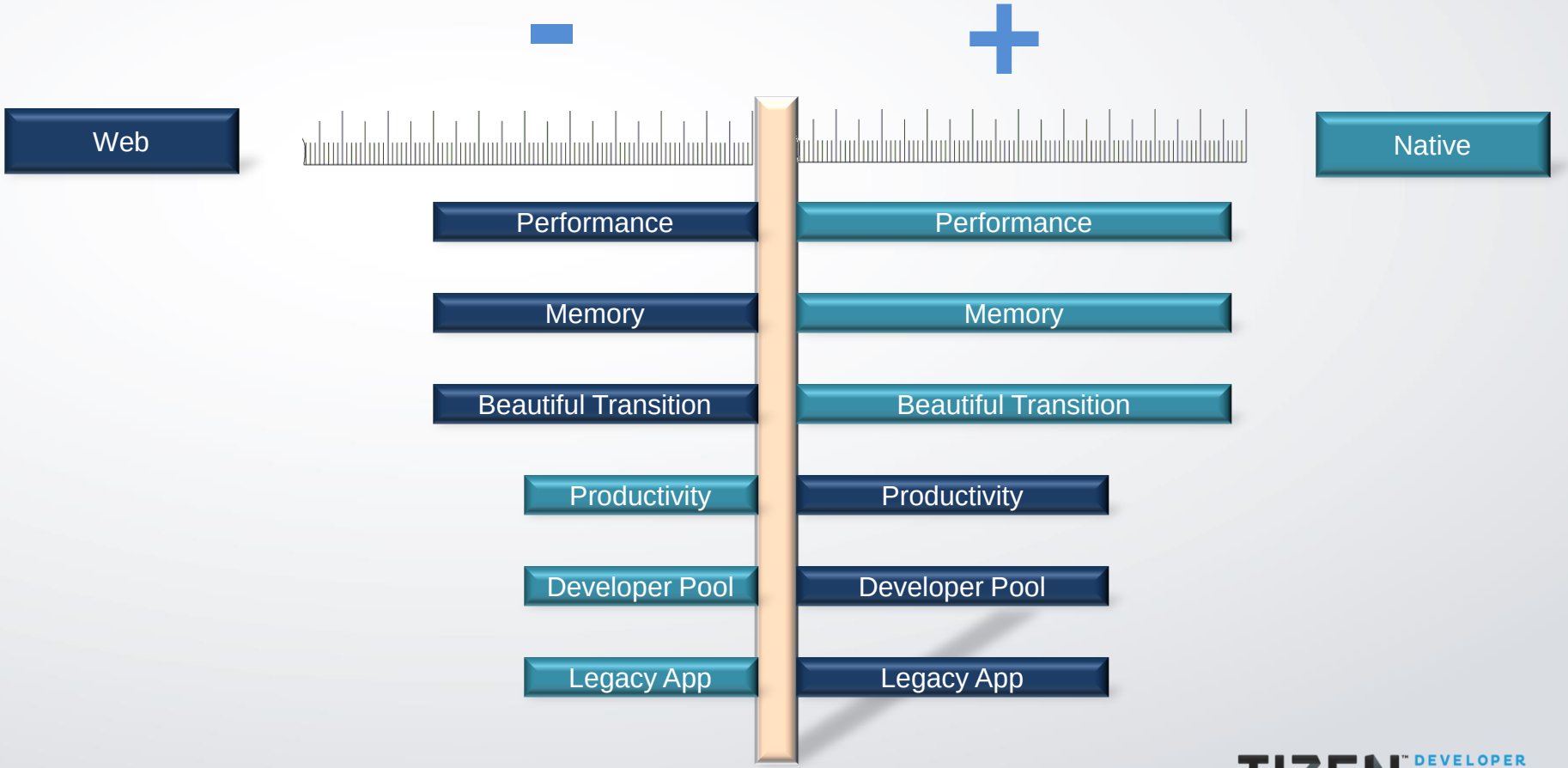
Contents

- Native or Web ?
- Why JavaScript, Node.js ?
- Proposed Architecture
- Sample Applications
- Going Forward

API Choices

Native or Web?

Native or Web



API Choices

Is there any Alternative?

Design Principles

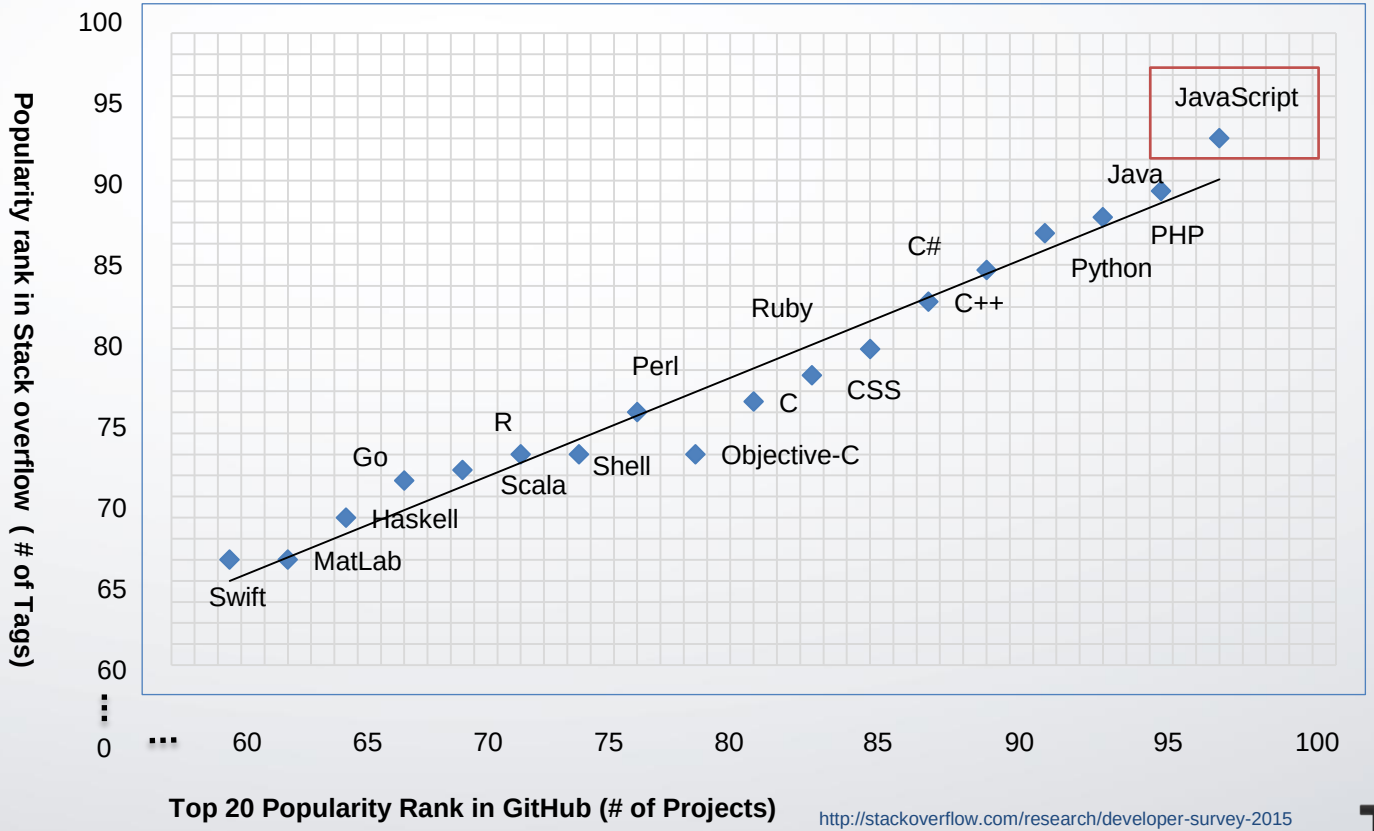
- Easy to Develop
- Easy to Extend
- Lightweight and Fast

Design Principles & Decision

- Easy to Develop
  ➔ JavaScript
- Easy to Extend
- Lightweight and Fast

Design Decision - Why JavaScript?

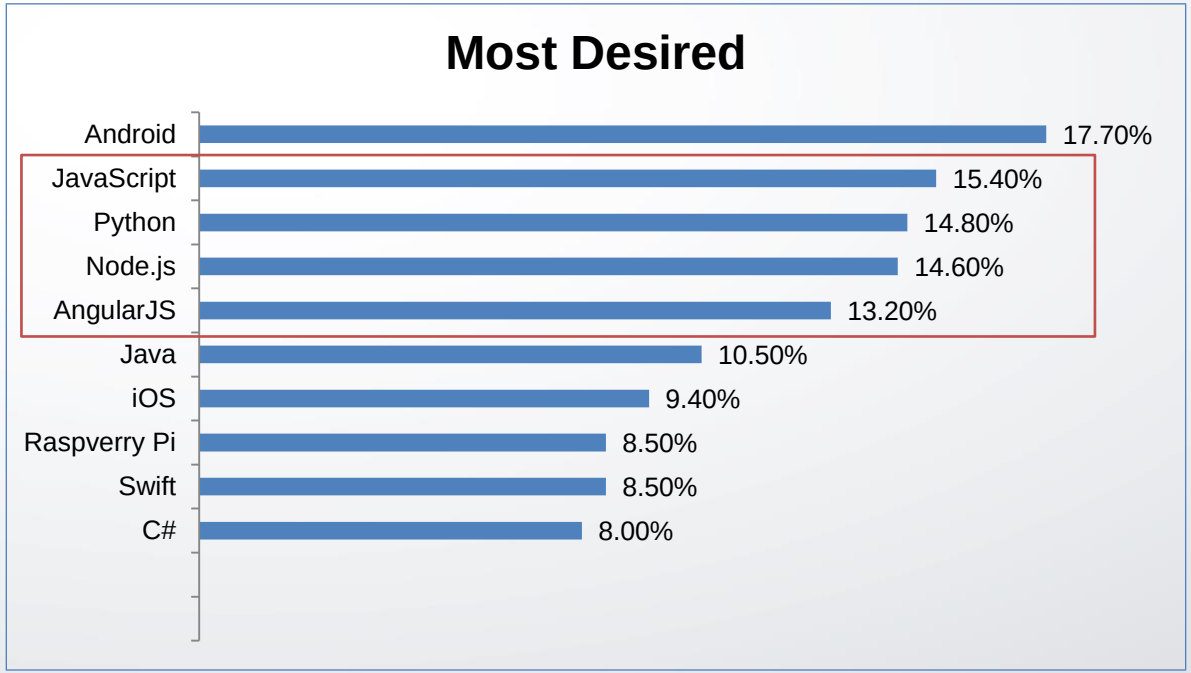
- Most Popular Programming Language on the Planet



http://stackoverflow.com/research/developer-survey-2015
http://redmonk.com/sogrady/2015/07/01/language-rankings-6-15/

Design Decision - Why JavaScript?

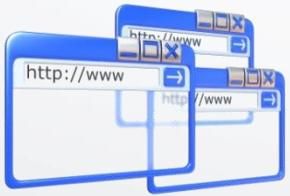
- Most Desirable technology / language to work with in near future



http://stackoverflow.com/research/developer-survey-2015

Design Decision - Why JavaScript?

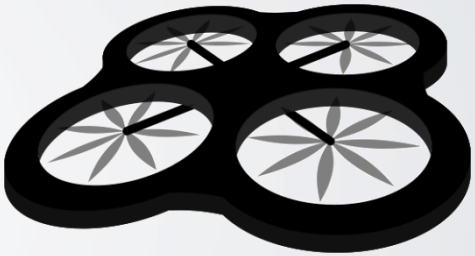
- Presence everywhere from Web to Enterprise

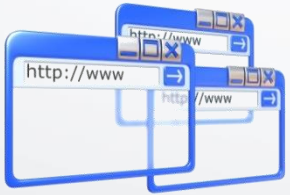


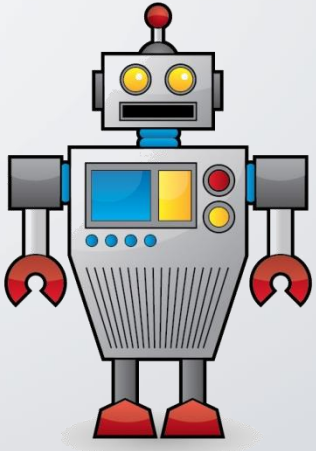
Design Decision - Why JavaScript?

JavaScript

- Presence everywhere from Web to Enterprise
- Now even in Drones and Robots!







Design Principles & Decision

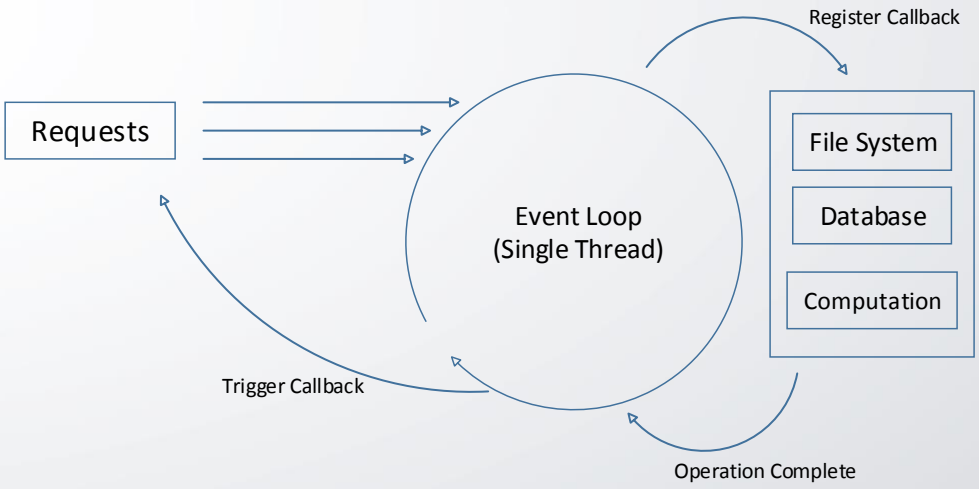
- Easy to Develop
  ➔ JavaScript

- Easy to Extend
  ➔ Node add-ons

- Lightweight and Fast

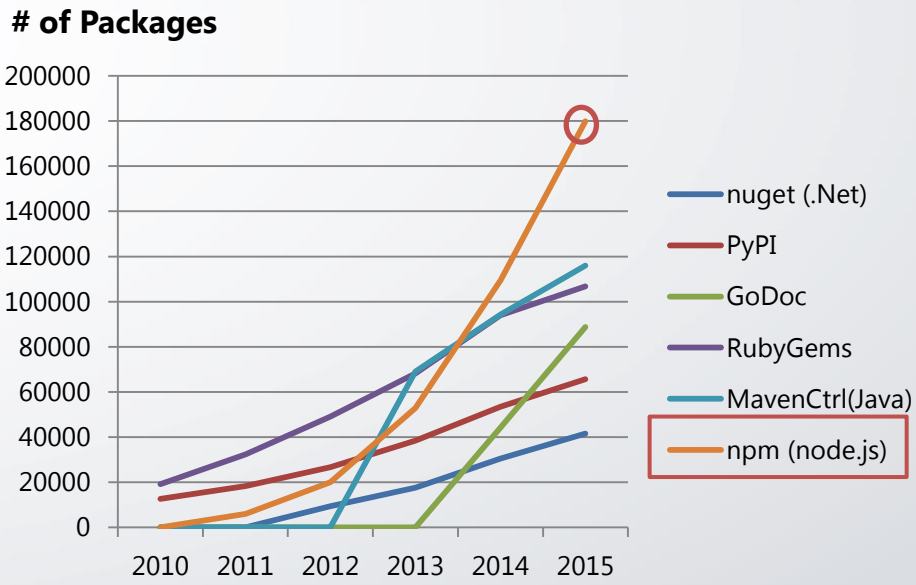
Design Decision - Why Node.js?

- Popular JavaScript Runtime
  - Event Driven Programming



Design Decision - Why Node.js?

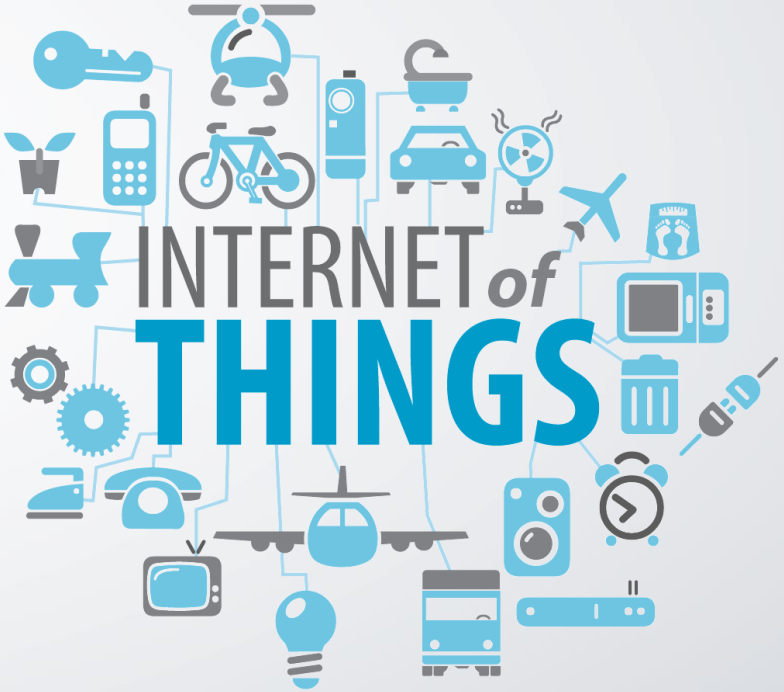
- Popular JavaScript Runtime
  - Event Driven Programming
  - Very Active Community
  - Enterprise Ready



http://www.modulecounts.com/

Design Decision - Why Node.js?

- Popular JavaScript Runtime
  - Event Driven Programming
  - Very Active Community
  - Enterprise Ready
  - Popular framework choice in IOT space

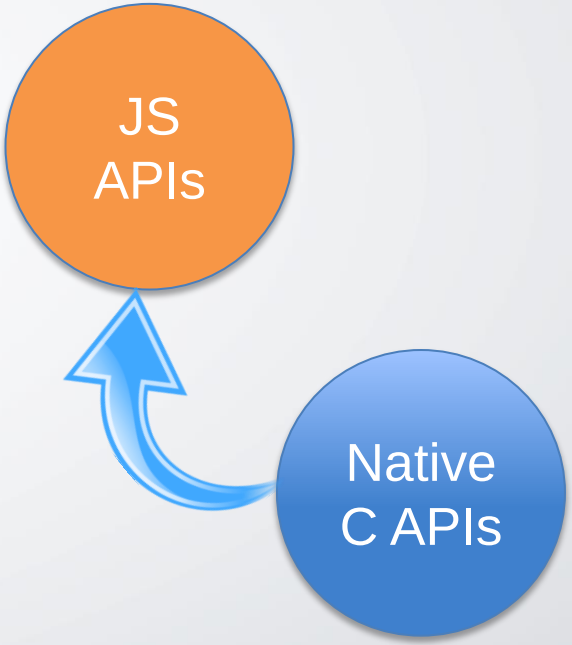


Design Principles & Decision

- Easy to Develop
  ➔ JavaScript

- Easy to Extend
  ➔ Node add-ons

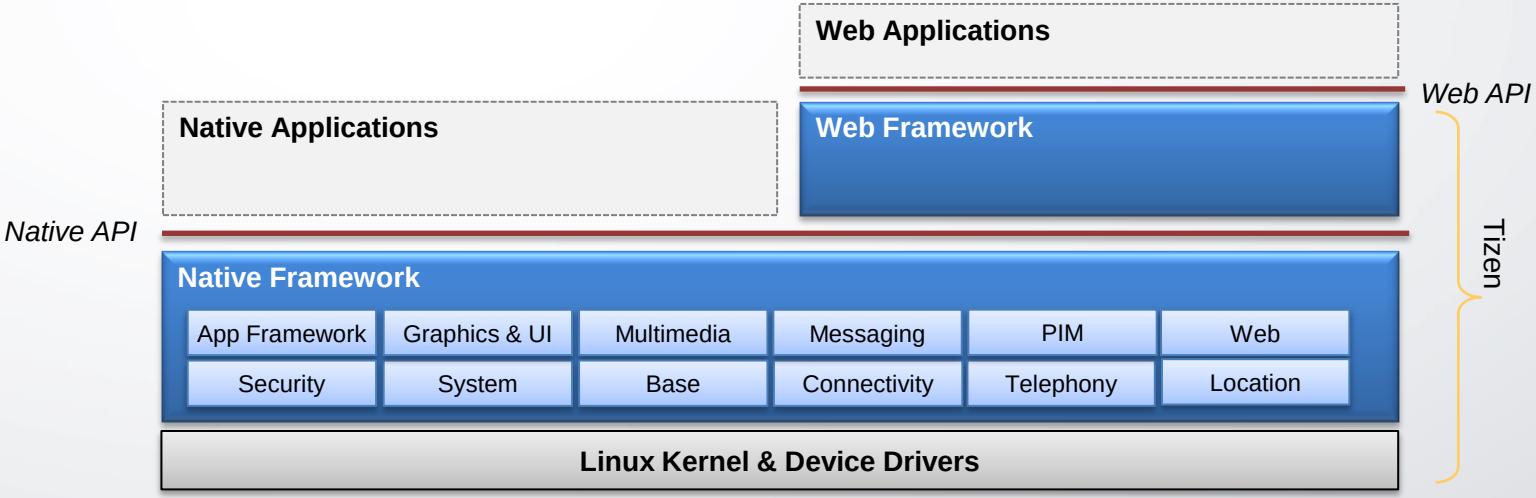
- Lightweight and Fast
  ➔ JavaScript binding for Native APIs



Proposed Architecture

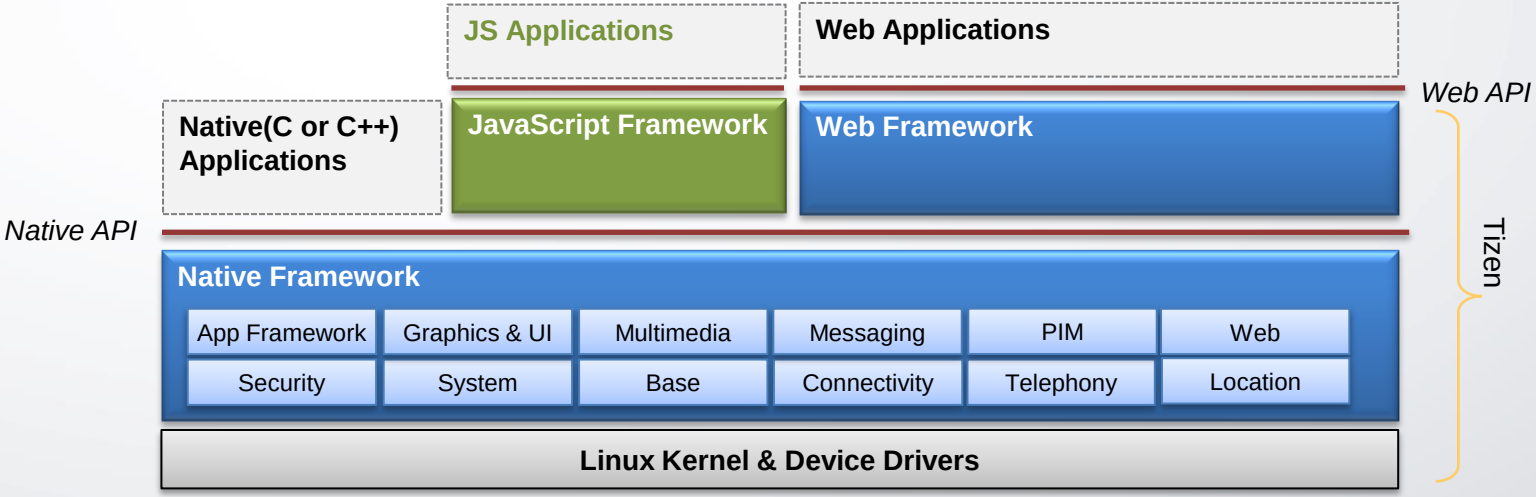
Tizen Architecture

Status quo



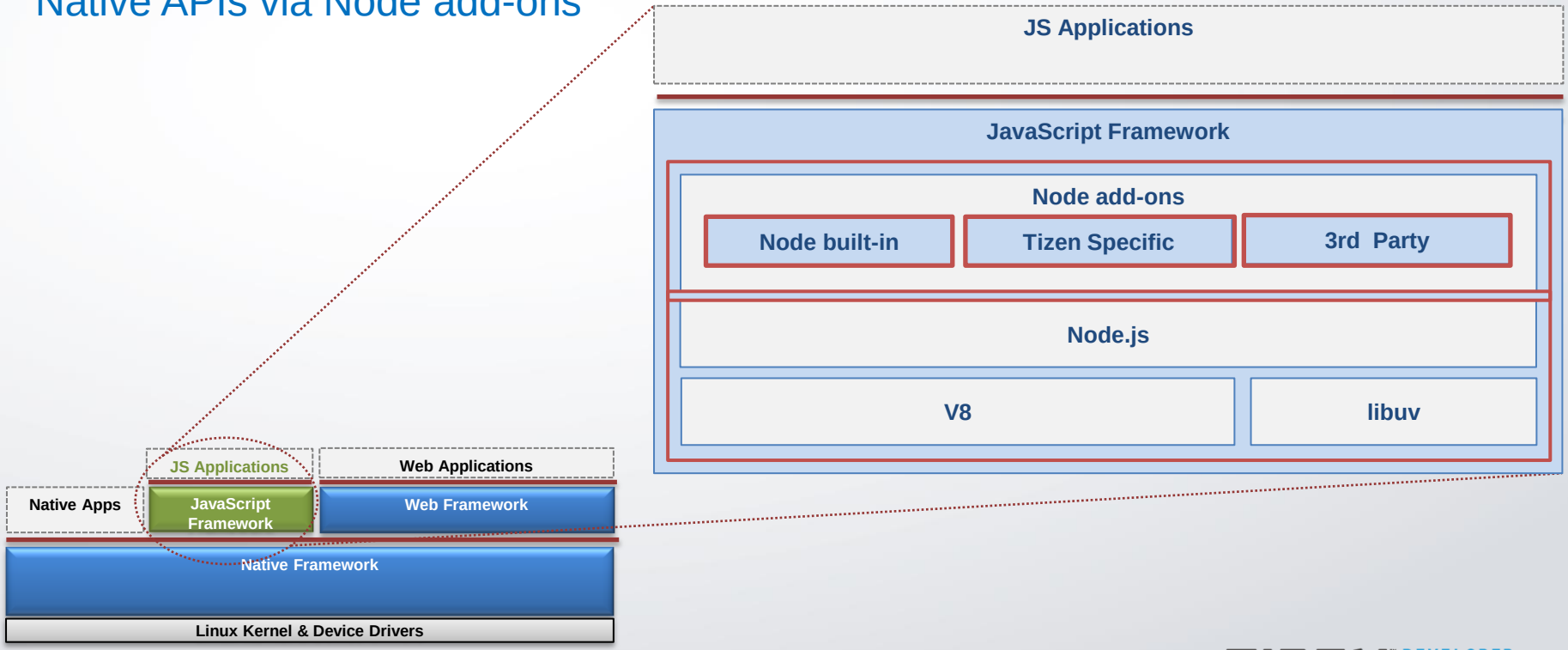
Proposed JavaScript Framework

After



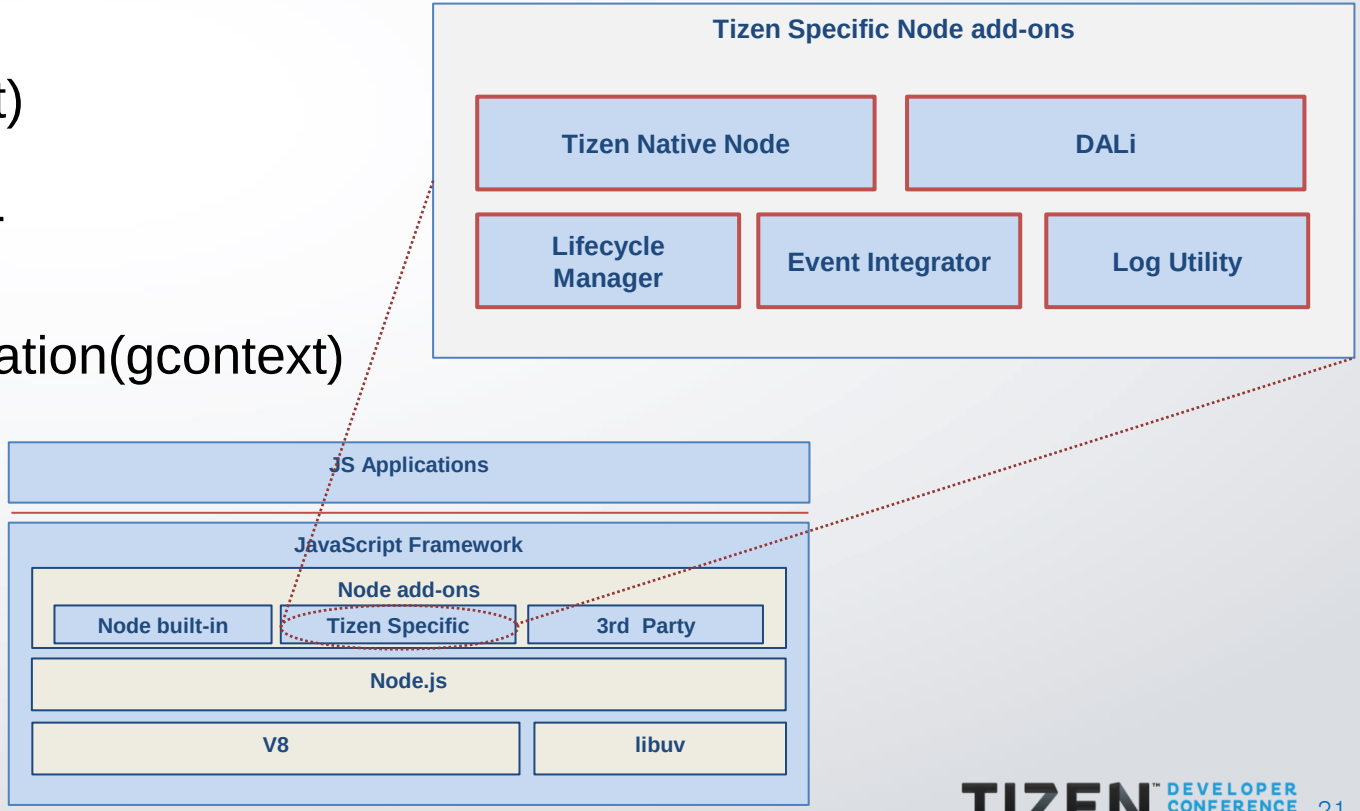
JavaScript Framework

- Native APIs via Node add-ons



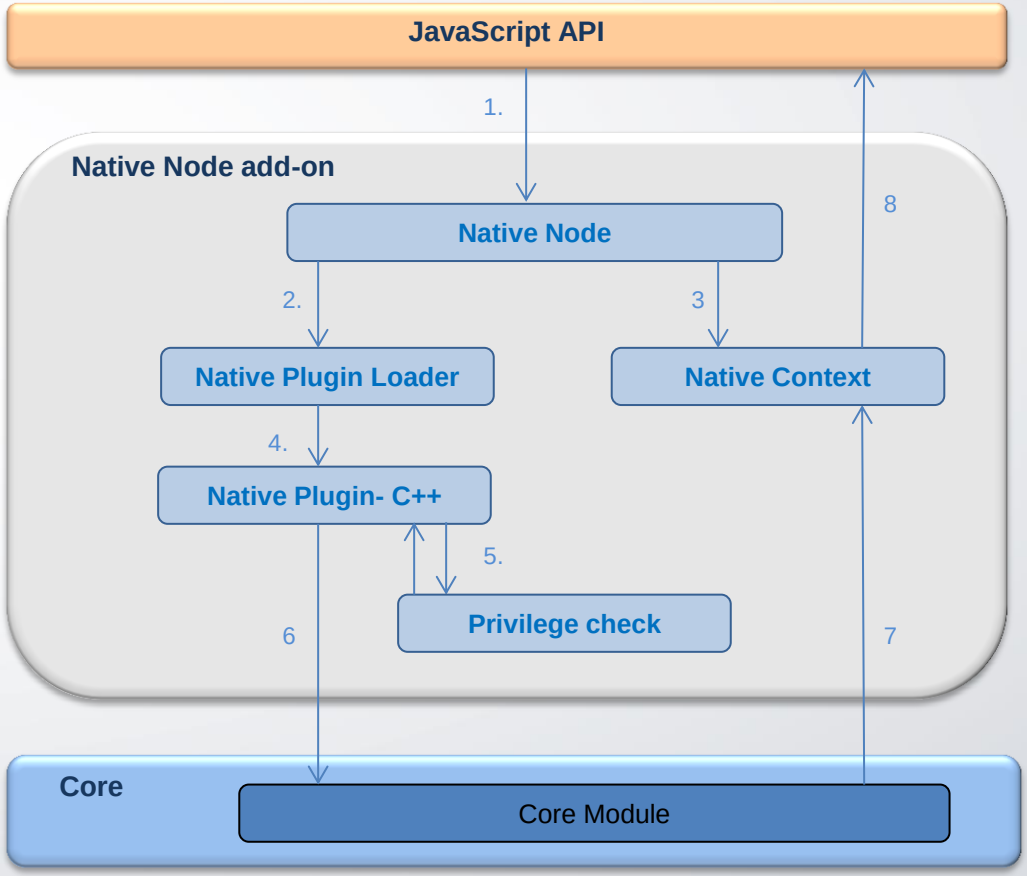
Tizen Specific add-ons

- Tizen Native Node
- DALi(3D UI Toolkit)
- Lifecycle Manager
- Event Loop Integration(gcontext)
- Logging



Inside Native Node

- Interface to Native APIs
- Dynamic Plugin Loading
- API Privilege Check
- Native –JS API mapping



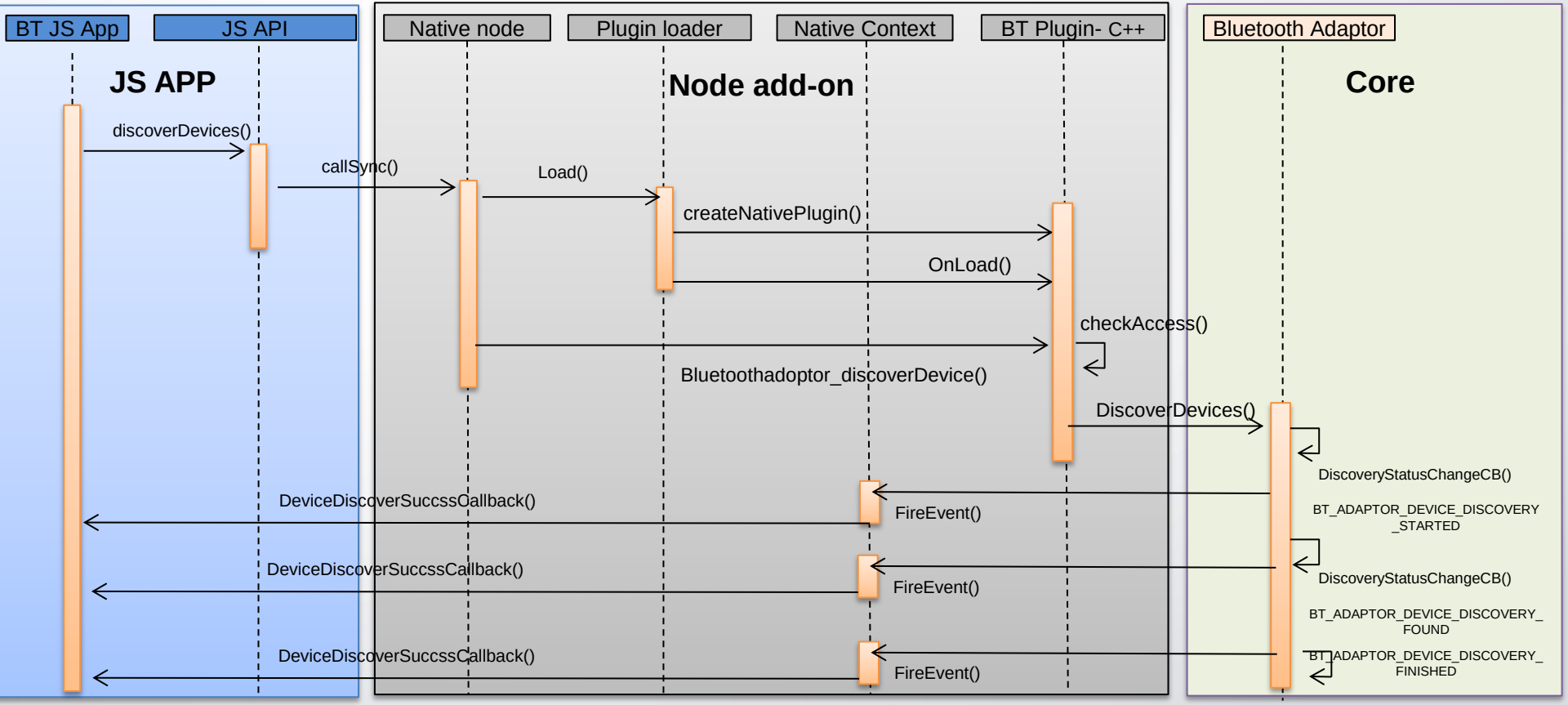
Sample JS Applications

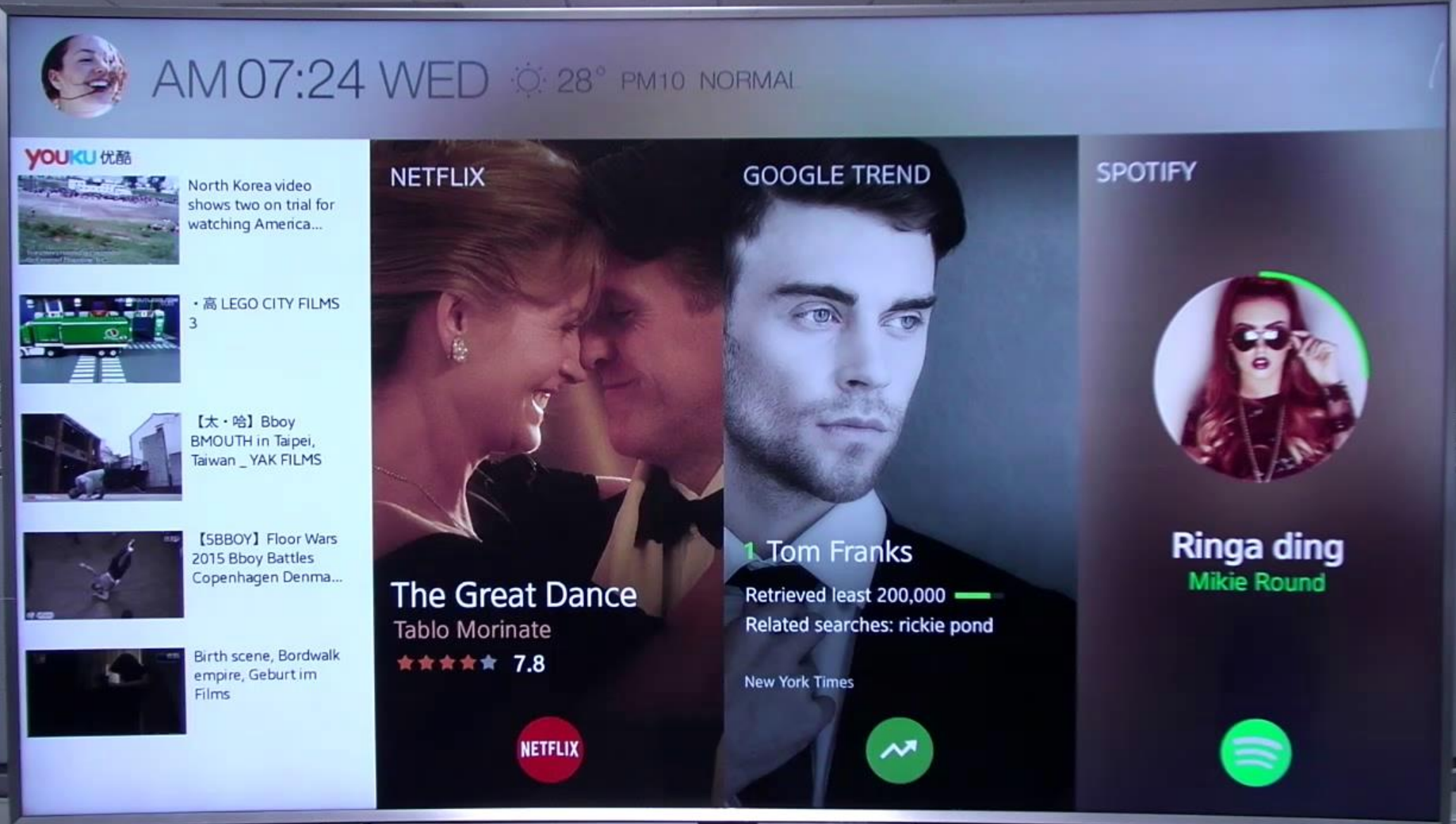
Bluetooth Object Push

Scenarios:

1. Bluetooth Activation / Deactivation
2. Bluetooth Device Discovery
3. Device bonding, service connection
4. Object transfer and object receive using Object Push Profile

Bluetooth – Device Discovery Flow

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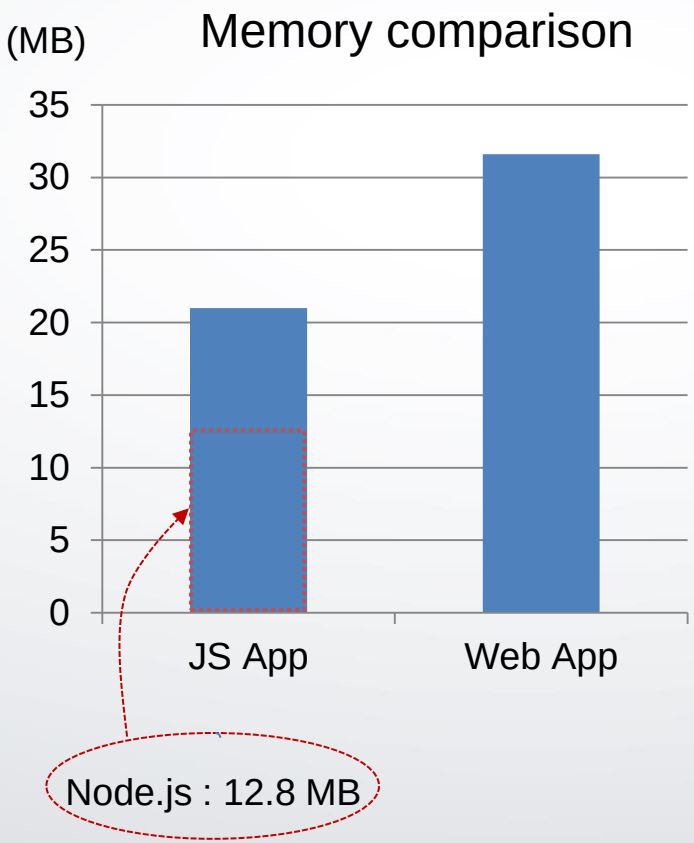
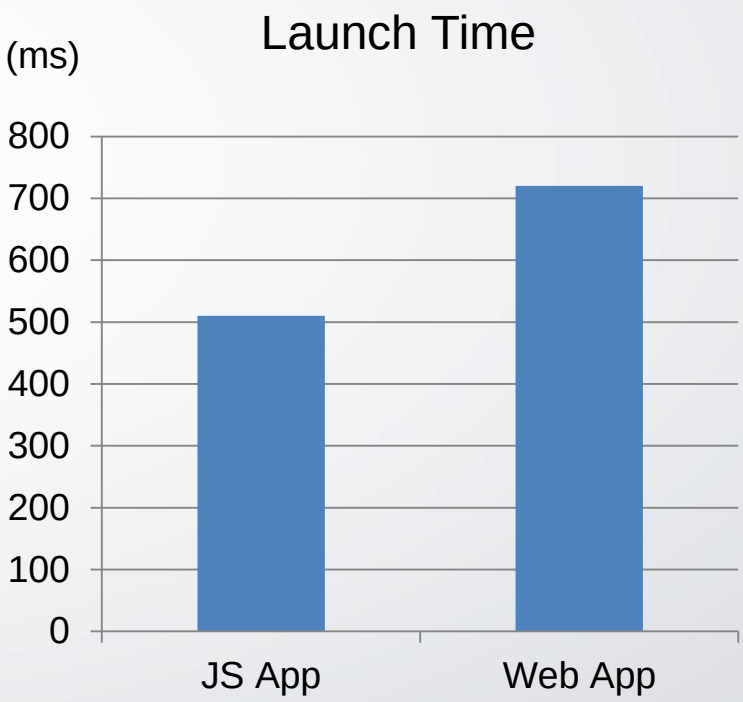
Mikie Round

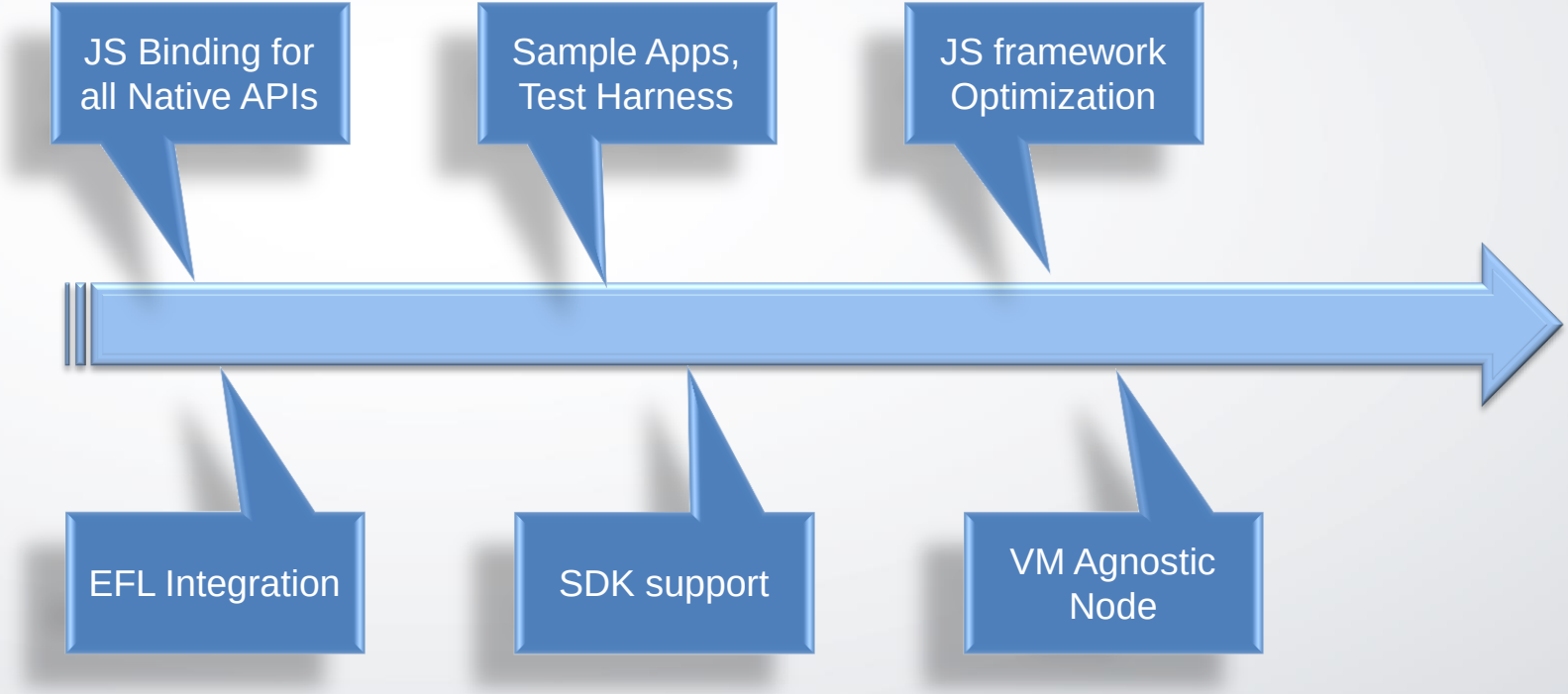
JS application vs. Web application





Going Forward…

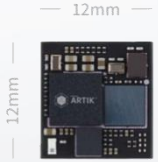
Roadmap


JS Binding for all Native APIs
Sample Apps, Test Harness
JS framework Optimization
EFL Integration
SDK support
VM Agnostic Node

JS Framework in IOT ?

- Deployable to IOT devices

- For resource constrained devices
  - Node.js -> IOT.js
  - V8-> Jerry Script



ARTIK 1

ARTIK 5

ARTIK 10

To Sum up..

- Whole Nine Yards of Native Framework to JavaScript Developer
- Seamless extension to libraries /packages of developer’s choice
- Easier & Faster Application Development
- More developers contributing to Tizen Eco-System

Thank You!

Q & A