WebXR, if X = 5G

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Web Developer Advocate

@diekus
• Samsung and the Web
• Web / XR
• WebXR
  • Benefits
• 5G?
• Use Cases
Chromium based Android browser
Version 7.2 launched

That ain't no moon!
Evergreen browser
New Web Features

Progressive Web Apps
Web Speech API
Web Bluetooth
Web Payments
Gamepad API
Physical Web
CSS Grid
WebXR API
...
Samsung in the Web

Browser from Samsung

Built with open source Chromium Engine

Samsung is the 2nd largest open source contributor to Chromium

Samsung specific UX and features
Samsung’s Leadership in the Web

New Web Features
Web Standards
Cross browser Initiatives
Open Source Contributions
Multi Device Support

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Expectations from the Web

- Linkability
- Shared Context
- Privacy-Friendly
- Asks for your permission
- User Choice
- Accessible
- Cross-Platform
- Open

Web
Expectations from VR

- Immersive
- Orientation Tracking
- Position Tracking
- 360° content
- Low latency
- Different Input methods
- Spatial sound
VR

pre-approved closed environment
wait several minutes
download 100s of MBs
experience you discard after 1 use
There’s surely a different way of doing this.

better
open
cross-device
different
frictionless
faster
progressive
WebXR
This specification describes support for accessing virtual reality (VR) and augmented reality (AR) devices, including sensors and head-mounted displays, on the Web.
browser support
<table>
<thead>
<tr>
<th>Device</th>
<th>Samsung Internet</th>
<th>Firefox</th>
<th>Chromium</th>
<th>Chrome</th>
<th>Oculus Browser</th>
<th>Edge</th>
<th>Servo</th>
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</thead>
<tbody>
<tr>
<td>Samsung Gear VR</td>
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<td>Google Cardboard</td>
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<td>Windows Mixed Reality</td>
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</tbody>
</table>

* Compatible with WebVR

source: webvr.rocks
hardware support

- Magic Window
- 3 DoF (orientation)
- 6 DoF (orientation + position)
- Controllers
- WebSpeech API*
Connectivity towards devices
Connectivity towards devices

Multi Device Experience

IoT will be very important in the near future
... and why does this matter?
discoverability  reach  ubiquitous/immediate  social  new creators
discoverability, reach, ubiquitous/immediate, social, new creators

Physical Web
QR Codes
Progressive Web Apps
Progressive Web Apps

- Icon on homescreen
- Independent of network and connectivity.
- Frictionless experiences by design.
- Preload Assets (Audio, Video)
- Automatic ingestion into app stores
discoverability  reach  ubiquitous/immediate  social  new creators

Widest delivery network in existence
Biggest software platform in the world
Progressive enhancement

discoverability  reach  ubiquitous/immediate  social  new creators
discoverability, reach, ubiquitous/immediate, social, new creators
discoverability  reach  ubiquitous/immediate  social  new creators

bit.ly/hollywood-bubble

bit.ly/penca-beach

bit.ly/gardens-Singapore

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discoverability  reach  ubiquitous/immediate  social  new creators

Networked A-Frame

https://hubs.mozilla.com/

https://hungry-pandas.glitch.me

@mozillareality

@diekus

@uveavanto

@poshaughnessy

WebRTC
Accessible platform for creatives, developers and makers

discoverability  reach  ubiquitous/immediate  social  new creators

three.js  React VR  Vizor  aws
Ava, by Achavanich Beaker Burial and Samsung Internet

https://samsunginter.net/ava
“it’s so full of niceness”

Explorathon, September 2017
Museum of Scotland
Web + VR = 💖

- Democratize VR
- Help commoditization of VR
- Can use a flexible tech stack
- Enable innovative experiences

discoverability  ubiquitous/immediate
reach  new creators
social
Expectations from 5G

- Low latency
- 10x faster speed than 4G
- 1000x more traffic than 4G
- Robust mobile networks
Connectivity towards devices

Multi Device Experience

IoT will be very important in the near future
• Connected cars
• Automated homes
• Wearables
• Appliances
• Smart cities
• Mobile XR devices
• ...

TV

@samsunginternet
lighter, tetherless headsets
What can this mean for Web + XR + 5G
5G discoverability
5G reach
5G ubiquitous/immediate
5G social
5G new creators

- discoverability
- reach
- ubiquitous/immediate
- social
- new creators

- fashion
- archaeology
- oncology
- curators
- teachers
...
What can this mean for Web + XR + 5G

- Low latency is game changing
  - “Transmit touch” – Mischa Dohler
    - Transmit engineering, musical, football, medical skills.
    - Democratize labor, same way internet has democratized knowledge.
    - Telemedicine, Virtual training environments, ...

- Machine to Machine communication
  - Productivity and services

- Assets that use big assets on the go?
  - Better textures and assets in general
  - Streaming of high res 360 degree content, including UHD live media

- Social experiences
Use cases

- 74% Travel and Adventure
- 67% Movies & Recorded Videos
- 67% Live Events (non sport)
- 66% Home Design
- 64% Classes
- 61% Gaming
- 59% Meetings
- 56% Shopping
- 56% Live Sports

source: Greenlight VR Consumer Adoption Report 2016, among 1300 people
eat. sleep. VRowse. repeat