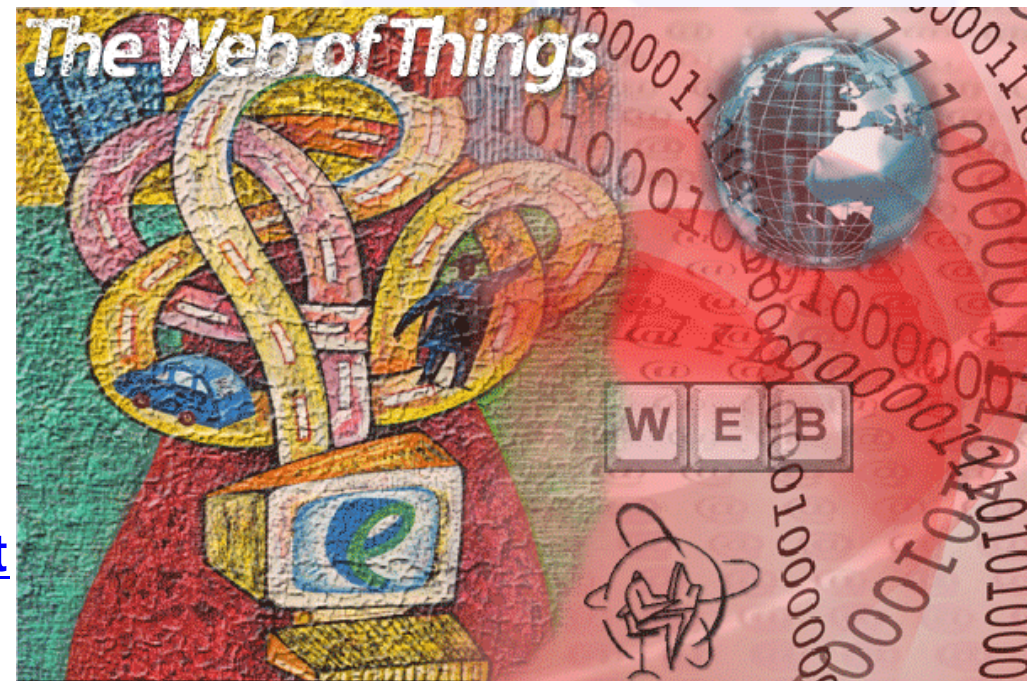


Simple WoT Architecture for small connected device

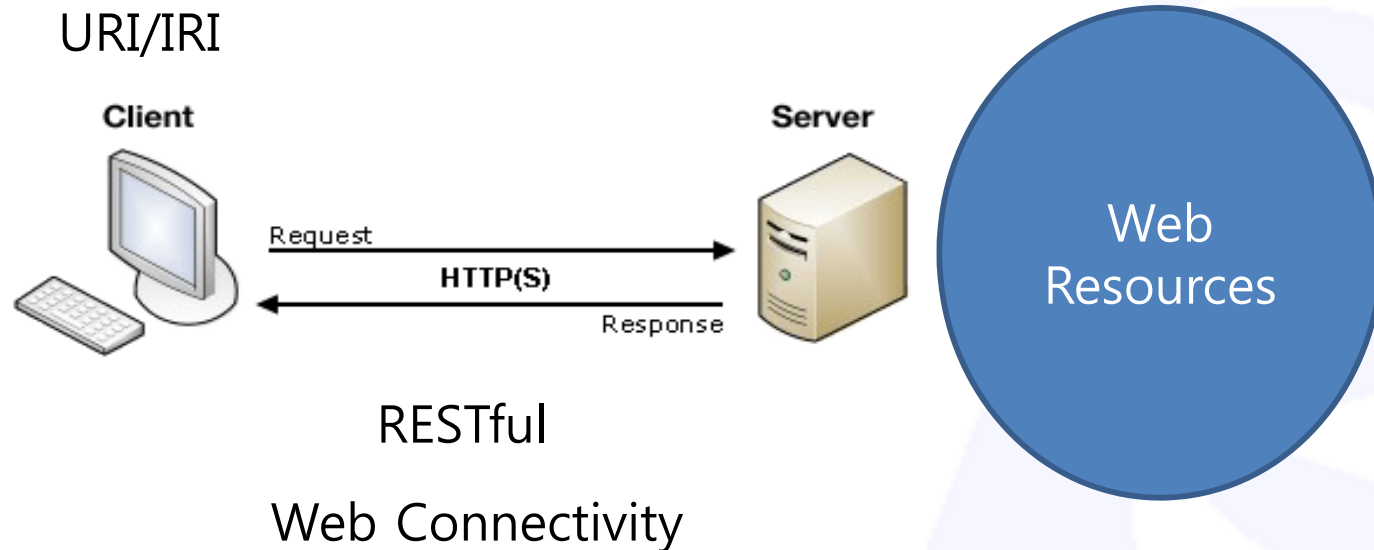
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<http://twitter.com/hollobit>

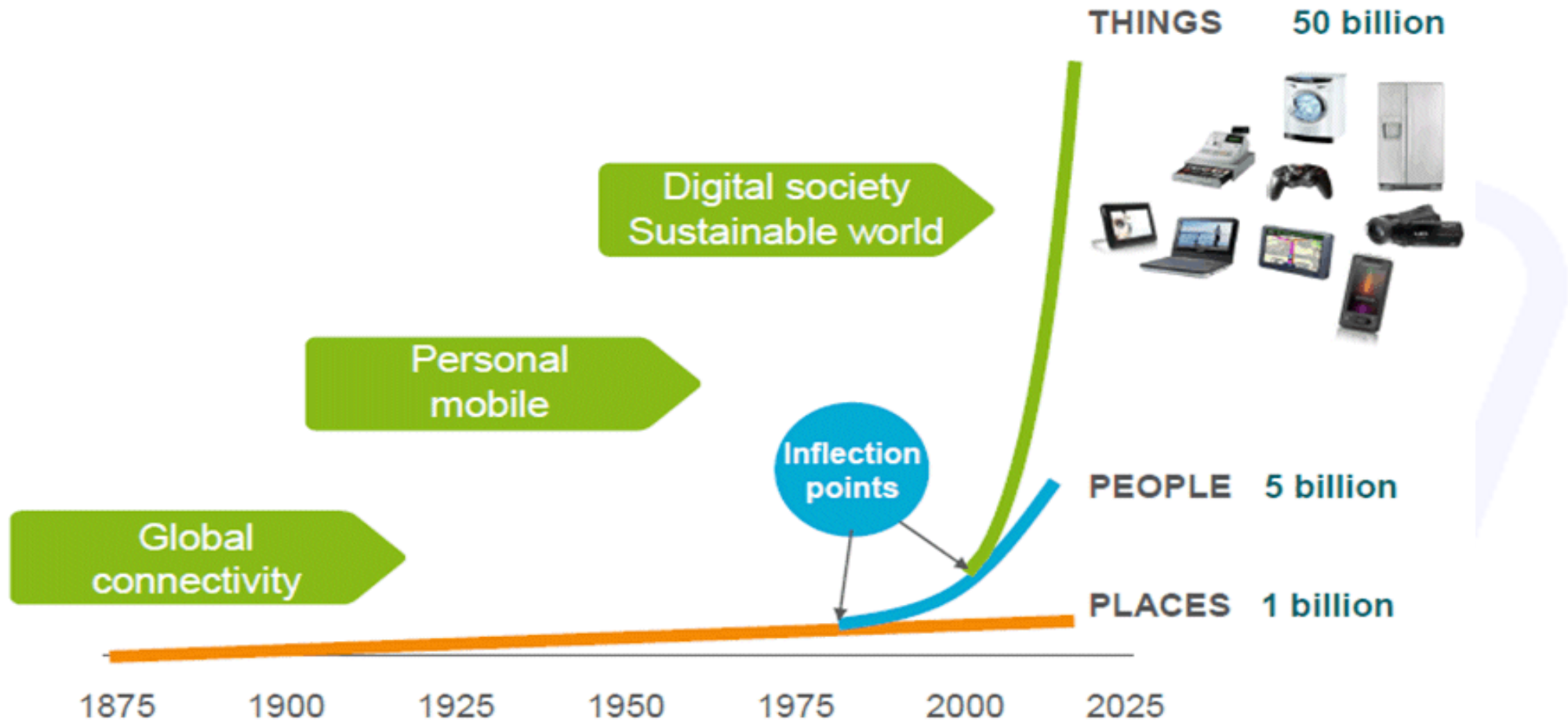


Presentation purpose
(for human interaction)



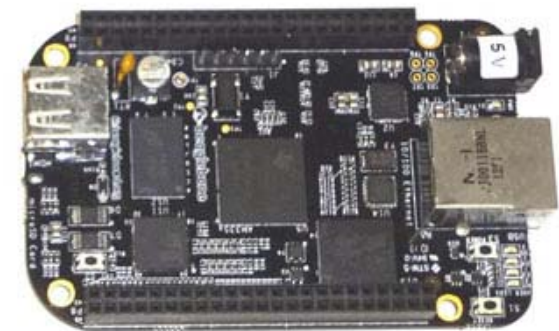
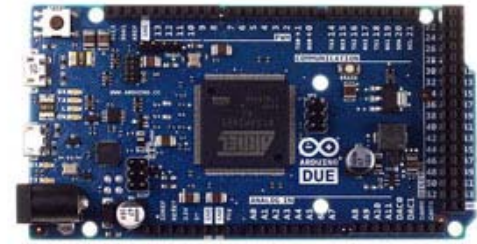
Changes - Connected Things

More things are connecting to the Internet than people — Cisco’s Internet Business Solutions Group (IBSG) predicts some 25 billion devices will be connected by 2015, and 50 billion by 2020



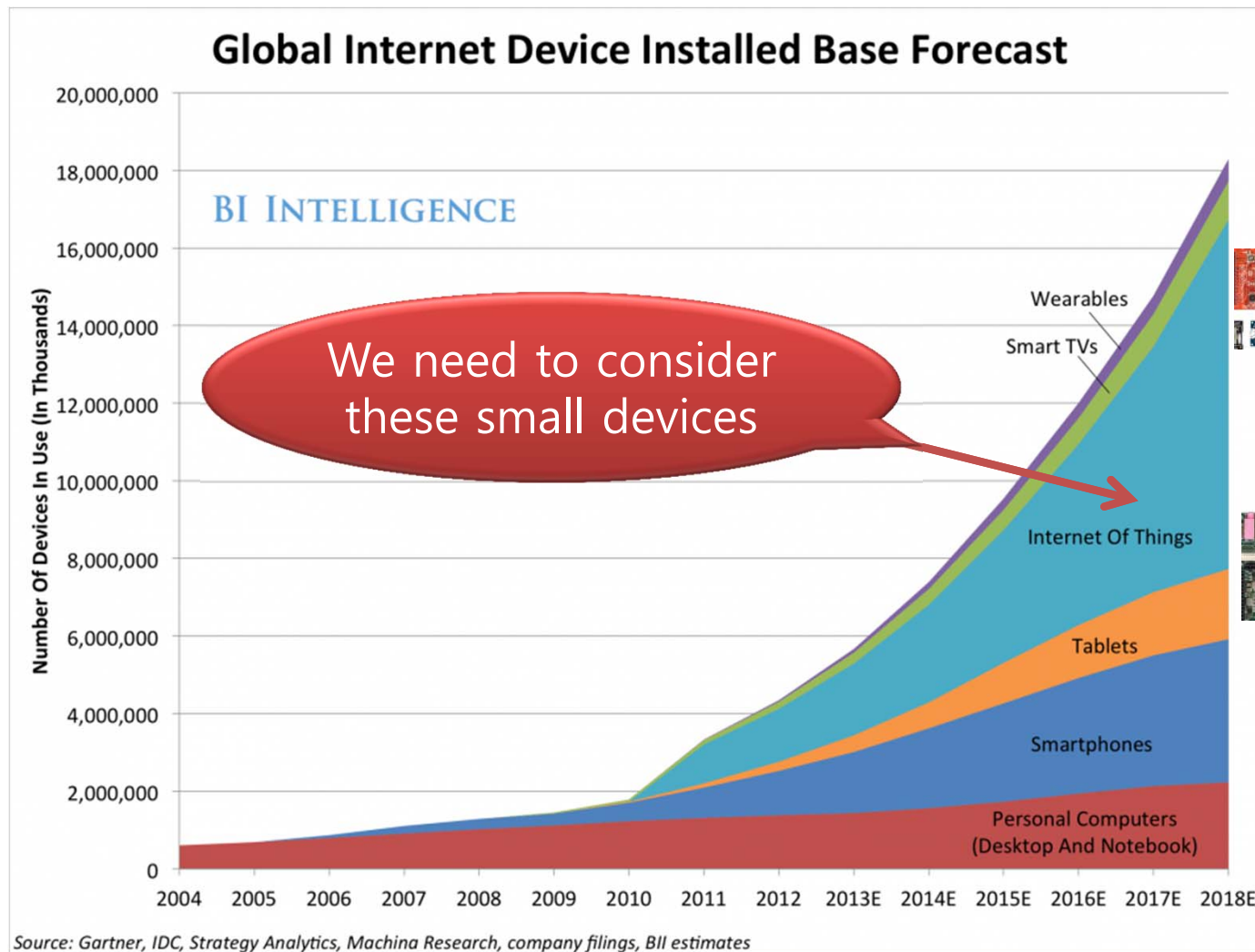
Source: Ericsson AB, "Infrastructure Innovation - Can the Challenge be met?," Sept 2010

Changes – Emerging Open Source Hardware



But , Web Technology for Small Connected Things ?

Half of connected devices will be small IoT devices
(how we can bring those devices into the web ecosystem)



Characteristics of Small Connected Thing

Connectivity

- Locally, Globally
- Wired, Wireless

Controllability

- One way, Two way
- Immediately, ...

Interactivity

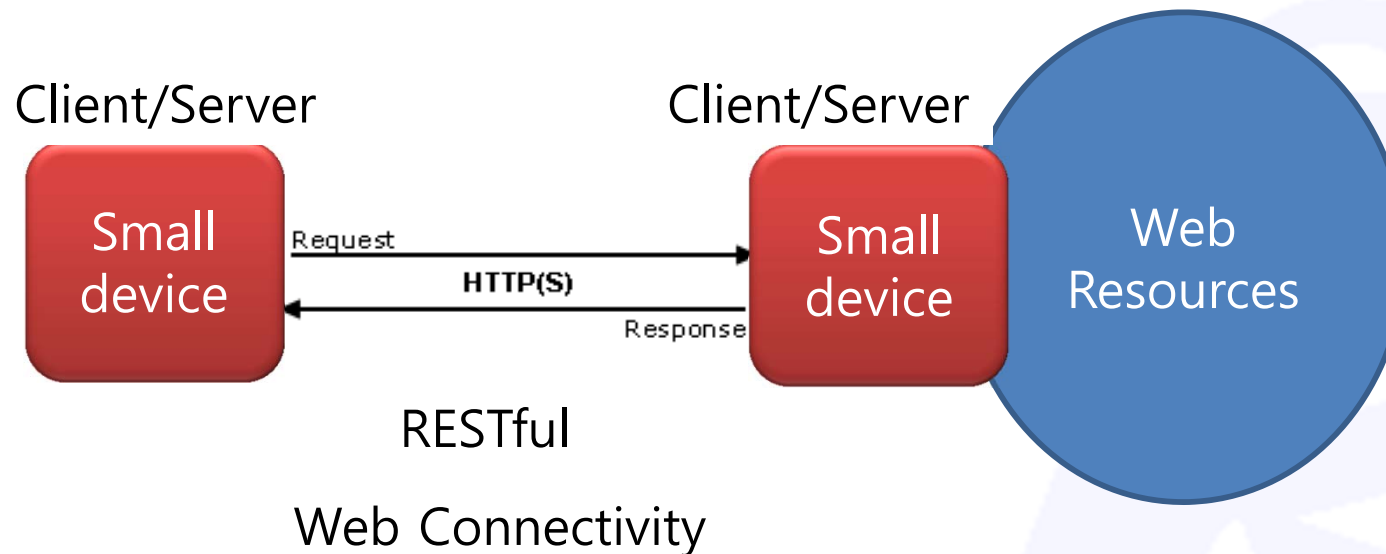
- Interaction ability – screen, sound, light ...

Limitations

- Low Computing power
- Device capability
- Non-screen



Control purpose
(for automatize interaction)

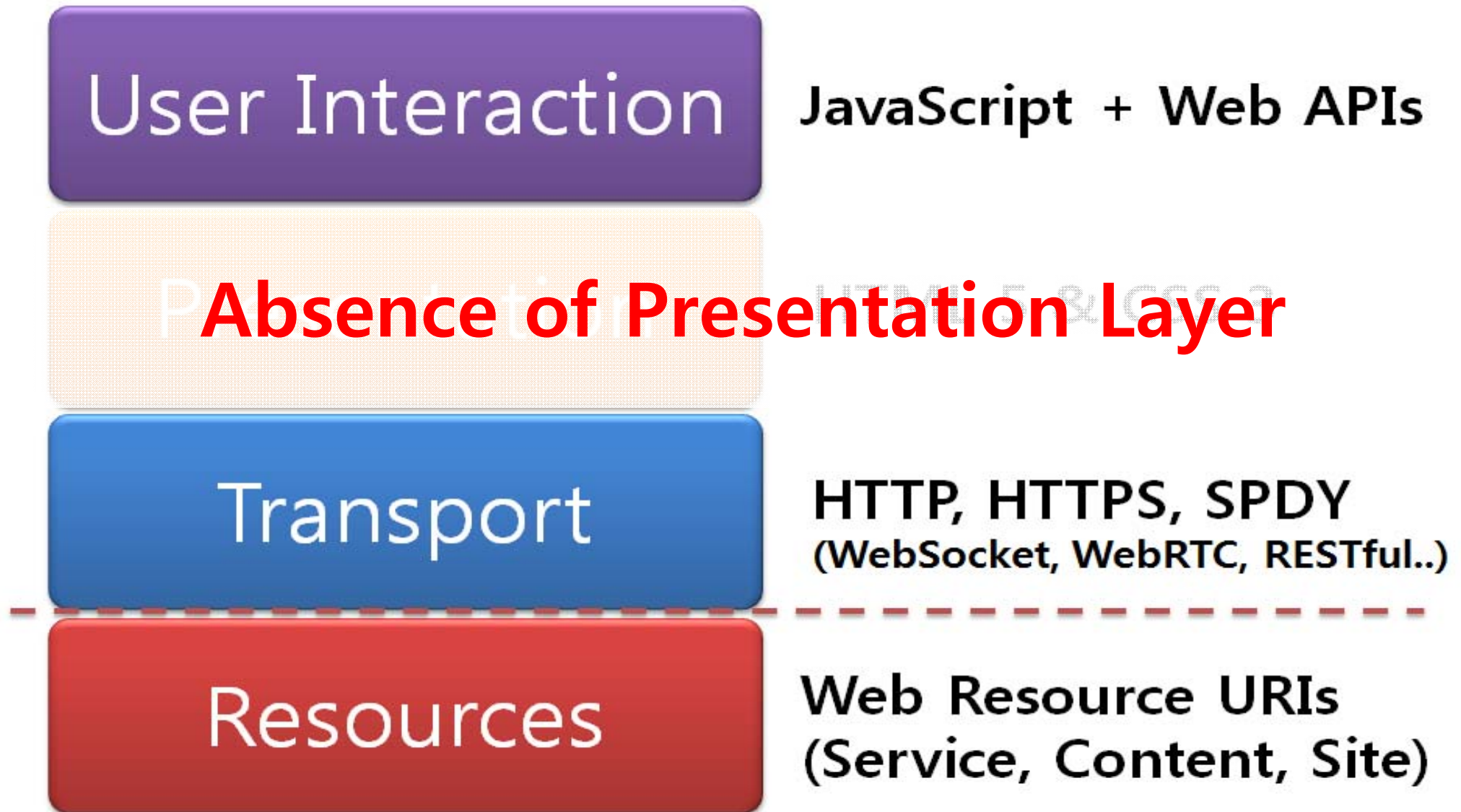


What kind of request ?

What kind of response ?

Do we need to use HTML/CSS markup ?

which kind of web client do we need ?



Consideration Point

- ❑ We need to make considerations for things (as small connected devices)
 - How we can bring those things into the web ecosystem

- ❑ New client/server technology for things (small devices)
 - Redefine of architecture model - Web Client & Server
 - Do we need to use HTML/CSS markup ?
 - Do we need the user agent (for presentation purpose) in small device environment
 - which kind of web client do we need ?
 - Web Application Framework for Things

- ❑ How can we standardize the APIs for WoT
 - Generic IO, Sensor, System APIs

- ❑ Do we need to consider new connectivity model for WoT
 - lightweight protocol ? – WebSocket, MQTT, CoAP



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Other issues

Robustness issues

- Device Management, Settings, Monitoring, Fault Tolerant

Security / Privacy issues for Things

- Authentication, Authorization, Trust, Identification

Network related issues

- caching, cloud, NAT/Firewall, offline access

....

