



Mokoversity

Connected Devices and Web of Things

Mokoversity 農場計畫 Week #1

2015.06.02

www.mokoversity.com

Connected Devices Portfolio

Smart City

Smart Home

Smart Activity

Transport & Logistics

Transport & Logistics

Wearable & Watch

Internet of Things

Web of Things

“The Internet of Things is the network of physical objects that contain embedded technology to communicate and sense or interact with their internal states or the external environment.” —Gartner

"The growth in IoT will far exceed that of other connected devices" —Gartner

Apps for Connected Devices

Fitbit

Up by Jawbone

Garmin Connect

Nike+ Fuelband

Misfit Shine

Dropbox

Veebeam

Camera A

Vuze

Rdio

Chromecast



News

More Connected Devices Means More Data Therefore More Risks

<https://wtvox.com/2015/06/more-connected-devices-means-more-data-therefore-more-risks/>

Non-smartphone connected devices sales on the up

<http://channellife.co.nz/story/non-smartphone-connected-devices-sales/>

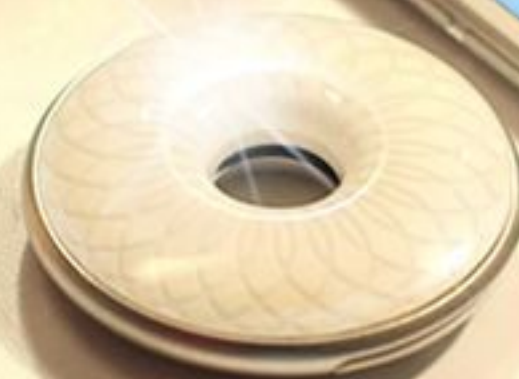
Way is a connected device that provides personalized skincare advice

<http://www.gizmag.com/way-skincare-device/37598/>





Personal Skincare Companion



www.helloway.co

Readings

Understanding Web of Things

<http://www.slideshare.net/zdshelby/coap-tutorial>

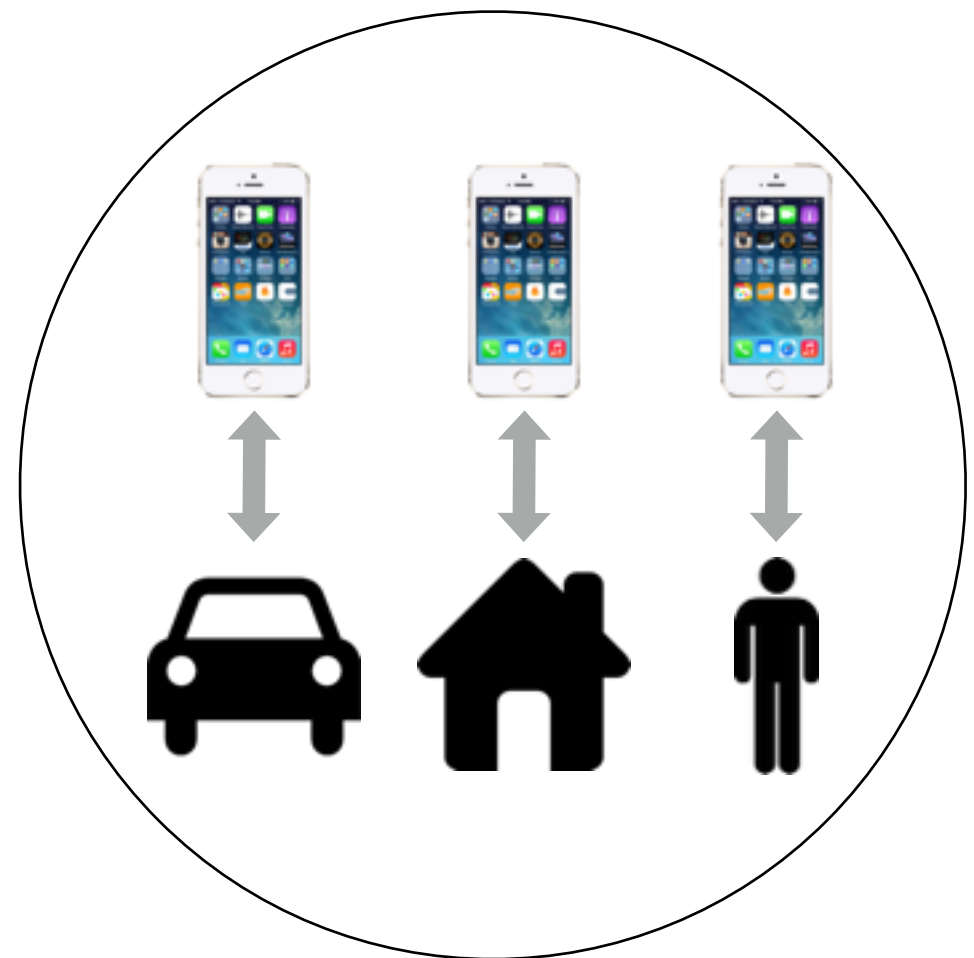
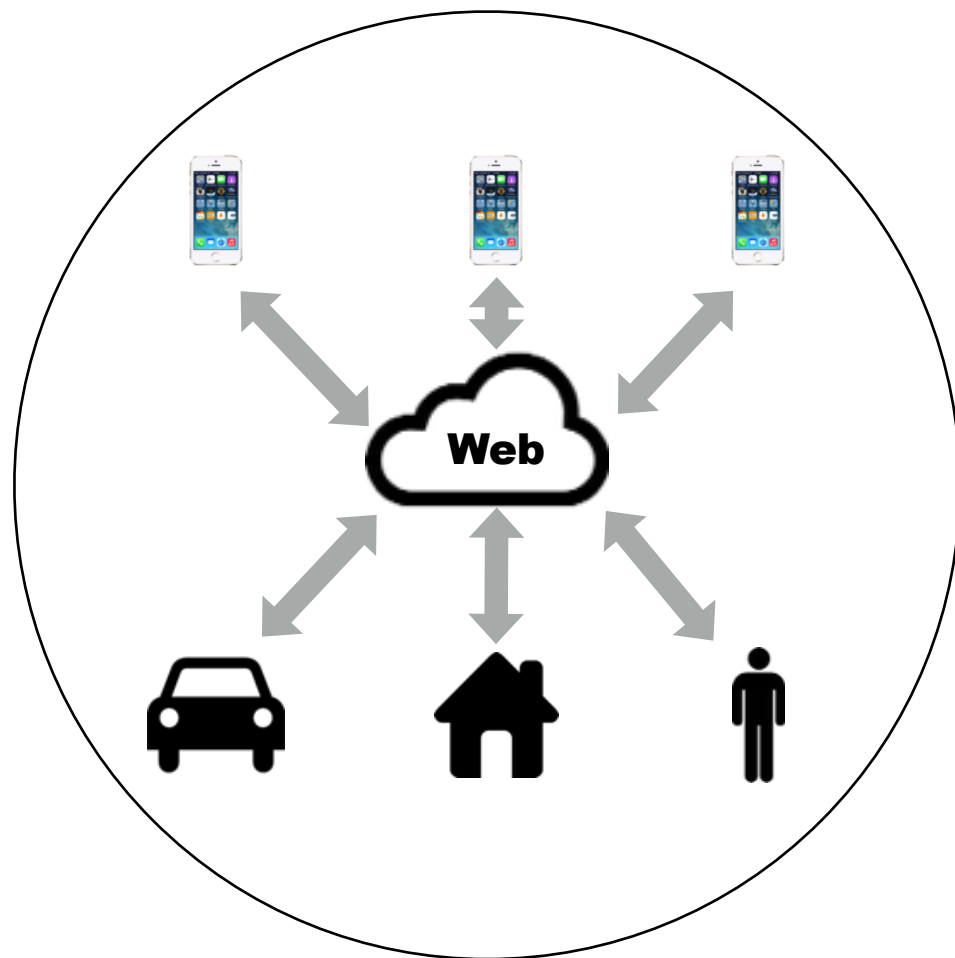
<http://www.w3.org/2007/Talks/0926-dsr-WDC/slides.pdf>

<http://www.w3.org/2014/11/05-dsr-wot.pdf>

<https://github.com/w3c/web-of-things-framework>

<http://www.w3.org/2015/05/wot-framework.pdf>

From M2M to WoT

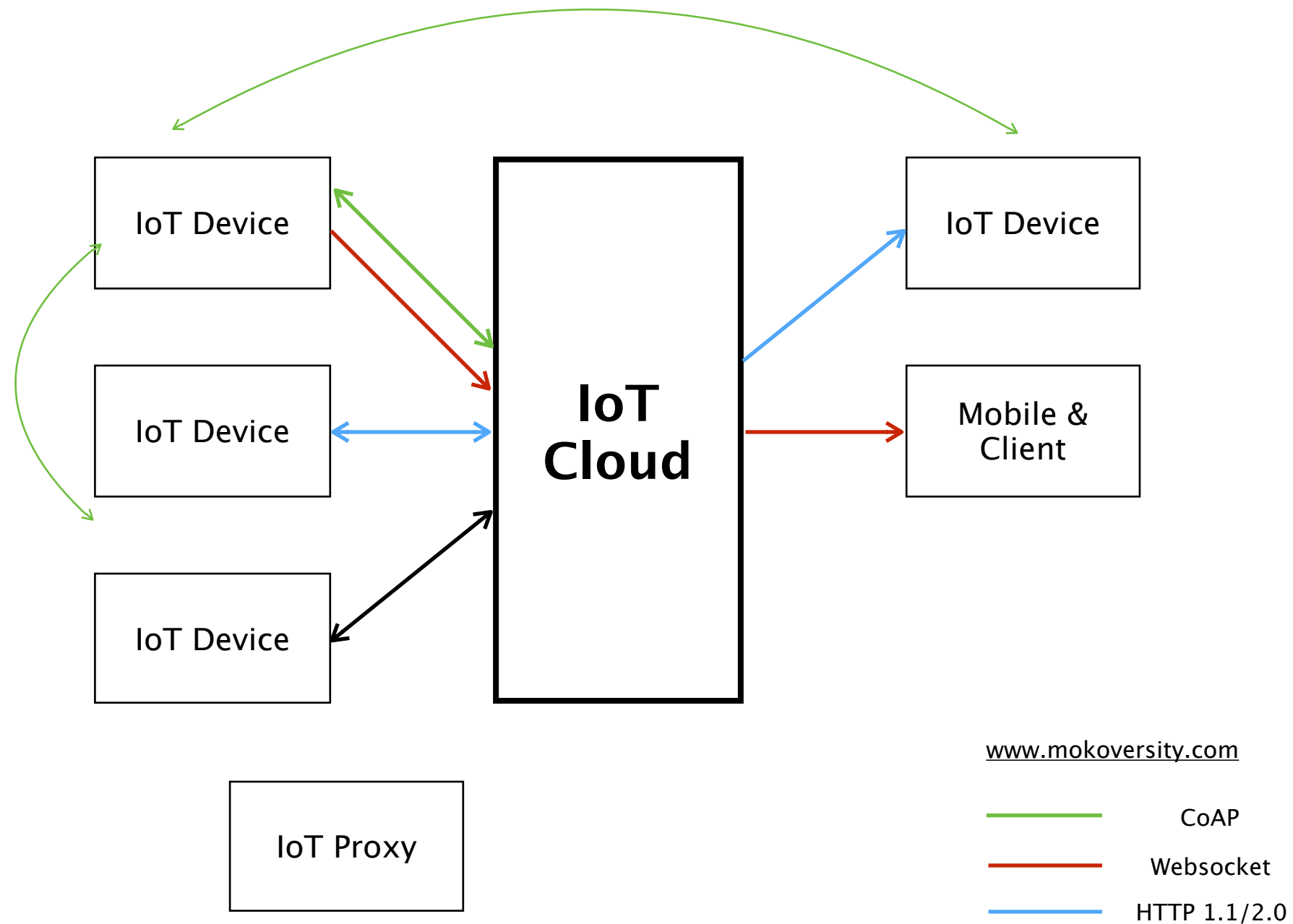


HTTP
WebSocket
CoAP



http://
ws://
coap://

Web of Things Architecture



Web of Things

HTTP Use Case

Light-weight
Web server

Web
Frontend



<http://wot.city/1/jollenchen/sensor/dust/a>

Web of Things

HTTP with WebSocket Use Case

Physical
Object

IoT
Device

Streaming Data



Broker

HTTP 1.1/2.0



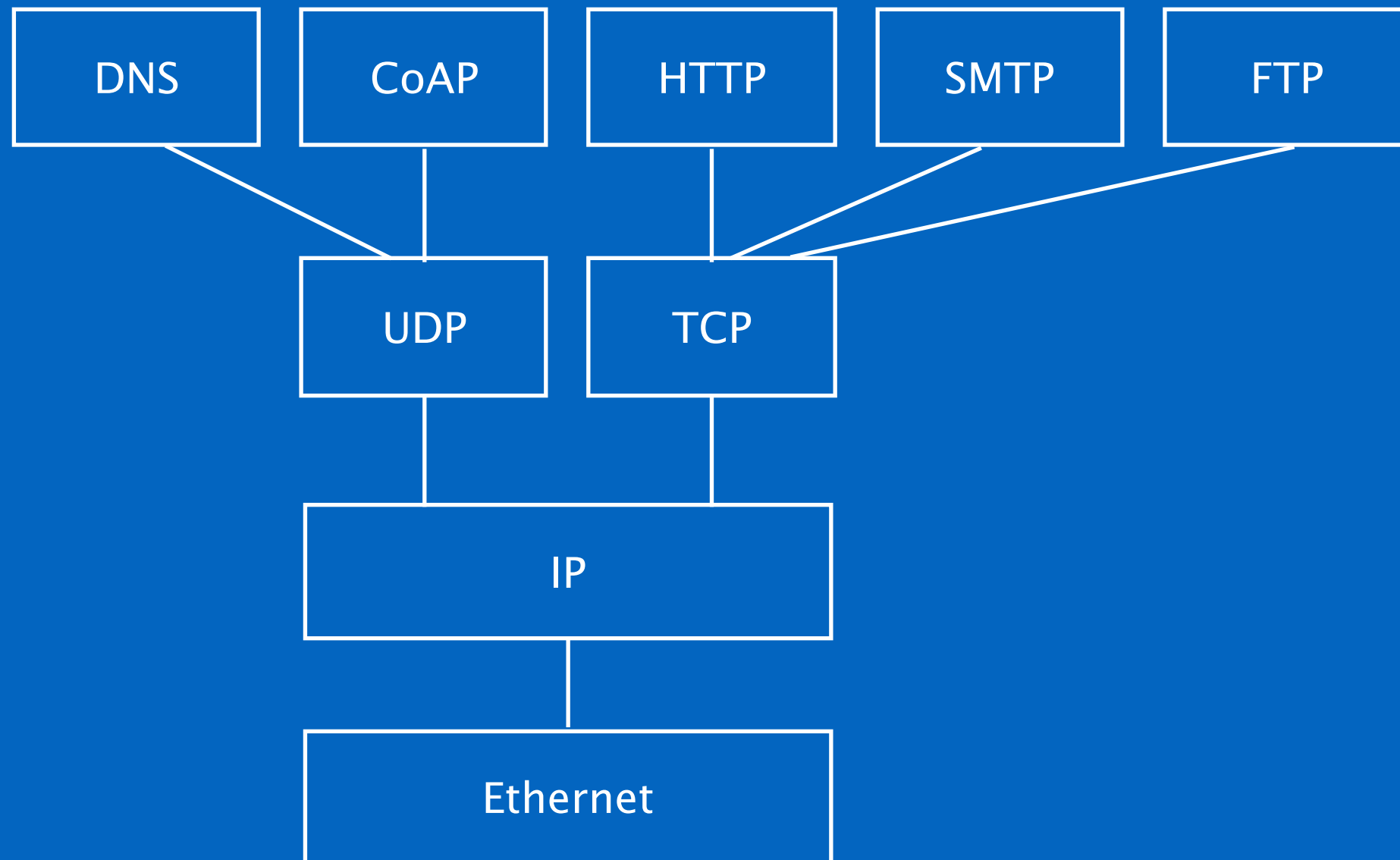
Real-Time Data

Web
Frontend

Mobile

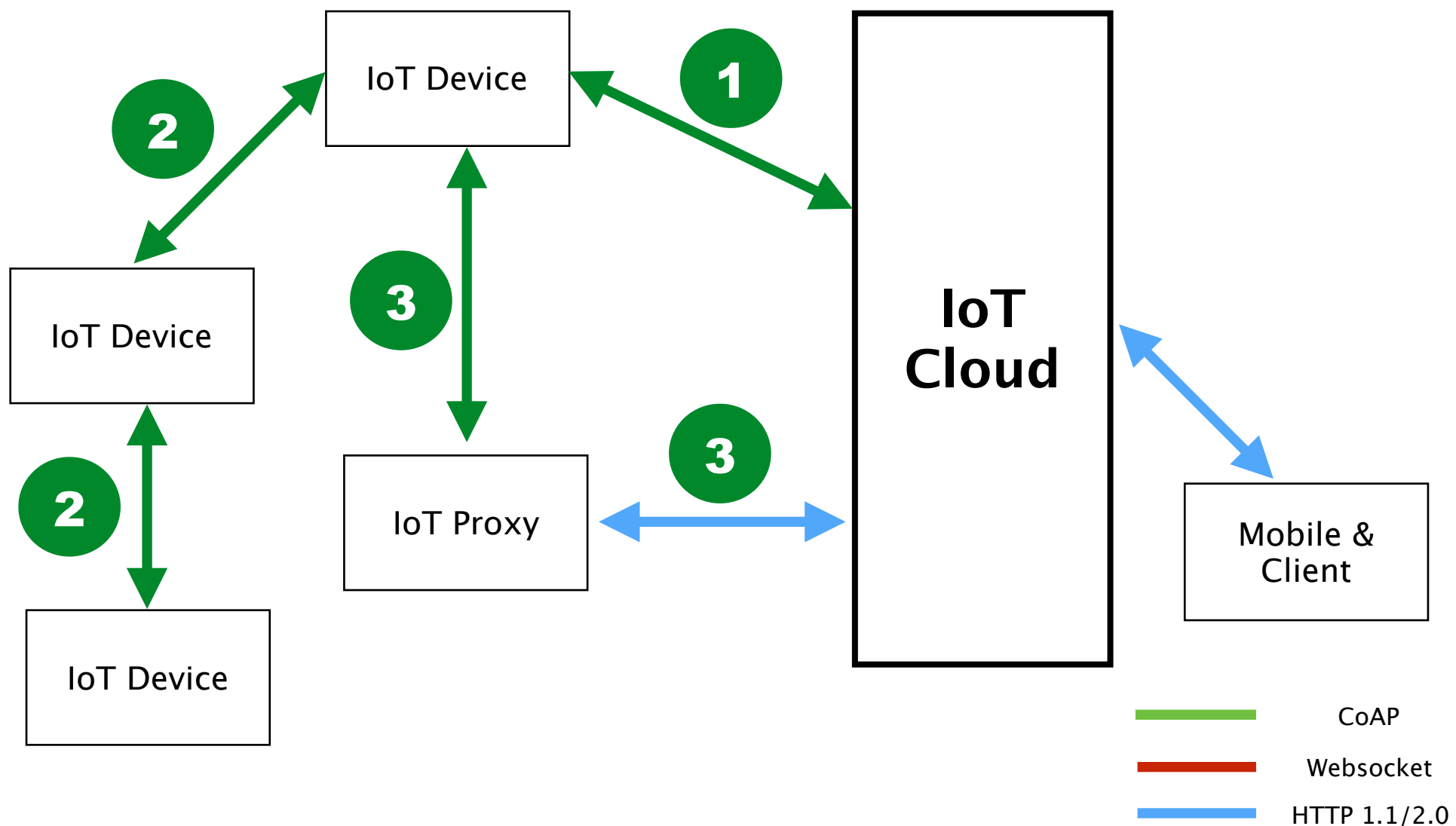
<ws://wot.city/object/jollenchen/sensor/dust/a>

Layering of Protocols



CoAP

The Web of Things Protocol



CoAP Features

RESTful

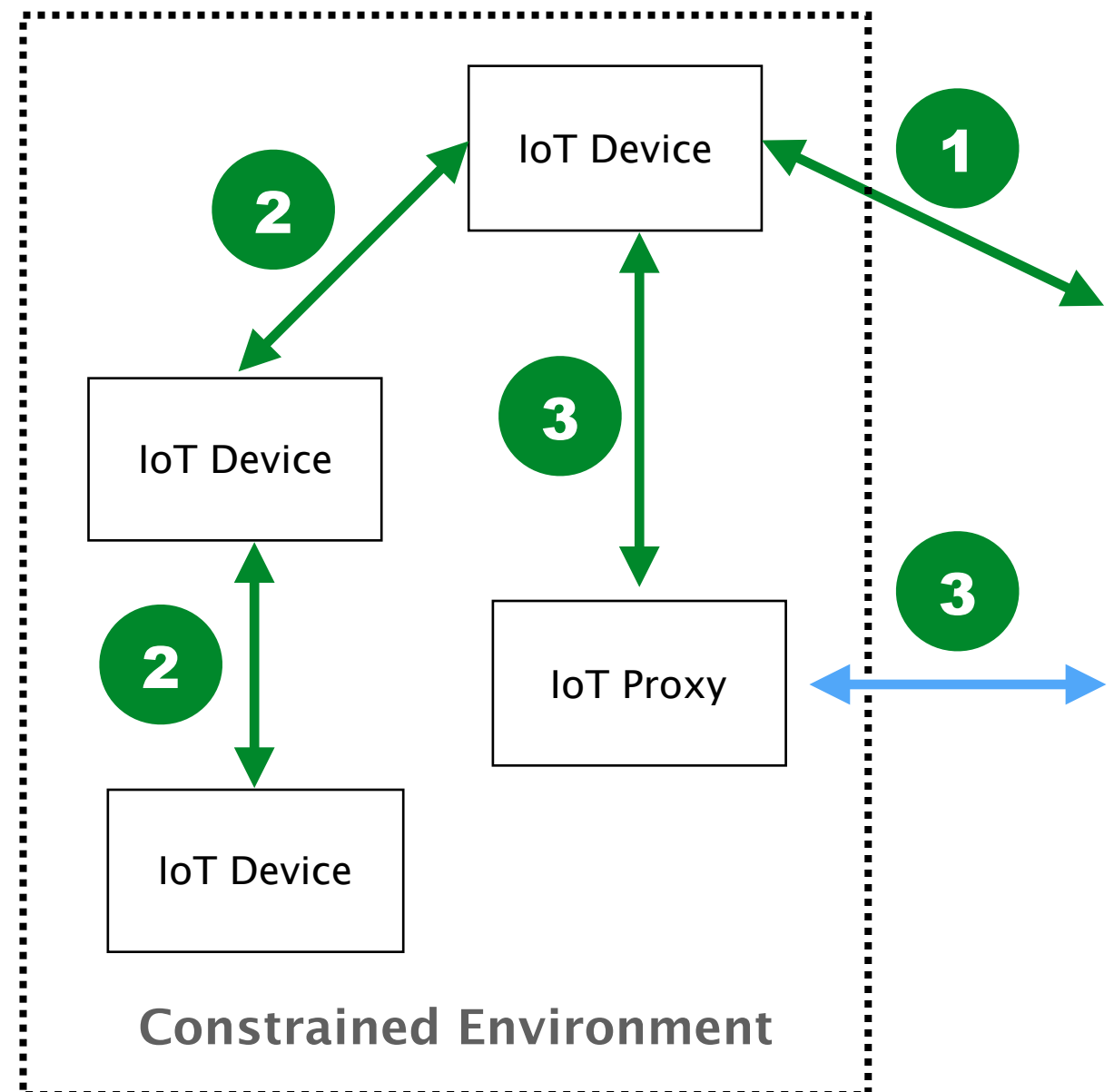
UDP

M2M

Wireless Sensor Network

HTTP in Uniform way

Simple Cache



Web-Technology Matrix

	HTML5/ CSS/JS	REST	SPA	WebSoc ket	CORS	Frontend Patterns
Web Pages	V					
Web App	V	V				
SPA	V	V	V (Backbone)			
Web Service		V		V (Server)	V	
IoT / WoT	V	V		V (Client)		V (jQuery 、Module 、 Closure)

IoT vs WOT

Figure: Thinking in WoT. Copyright (C) 2014 Mokoversity Inc.

	IoT	WoT
連結方式	Bluetooth	HTTP
數據管理	Centerlized	Decenterlized
Things	Objects	RESTful Objects
應用開發模式	Native	Web (SPA)
硬件概念	Sensor Device	Physical Web (Sensor Fusion)

Connectivity

Figure: Thinking in WoT. Copyright (C) 2015 Mokoversity Inc.

	IoT	WoT
Connectivity	Machine to Machine	LWM2M Machine to Web
Networking	TCP / UDP	HTTP / REST / CoAP
Things	Sensor Device	RESTful Objects
Data	Streaming Data	Time-Series Data
Discover	MQTT	Publish / Subscribe