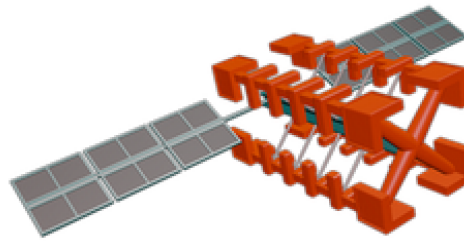


Go real-time with "Internet of Things"



RealTime communication and IoT walks hand in hand

Uffe Bjorklund - @ulfbjo

About Me

- In RealTimeWeb since 2009.
 - *Web (mostly backend, and you will see why)*
 - *Kinect, Arduino, Netduino, RaspberryPI, AR Drone etc*
 - *P2P (like WebRTC)*
 - *M2M*
 - *...Full-Duplex communication in general...*

Today's agenda

- Intro to "realtime" development
- Show that state is important
- Communicate cross-protocol
- Add "things" to the mix

HTTP/REST/AJAX

- Designed for delivering resources (HTML, JS, CSS)
- Half-Duplex (stateless)
- ~870 bytes average header

Why is "RealTime" important

- Well...
 - *Event driven architecture*
 - *Should decrease complexity*
 - *Will increase speed*
- But...
 - *A client should never (or rarely) ask for data*
 - *You should never send data to a client that does not need it*
- So...
 - *Simple*
 - *Fast*
 - *Saves resources*

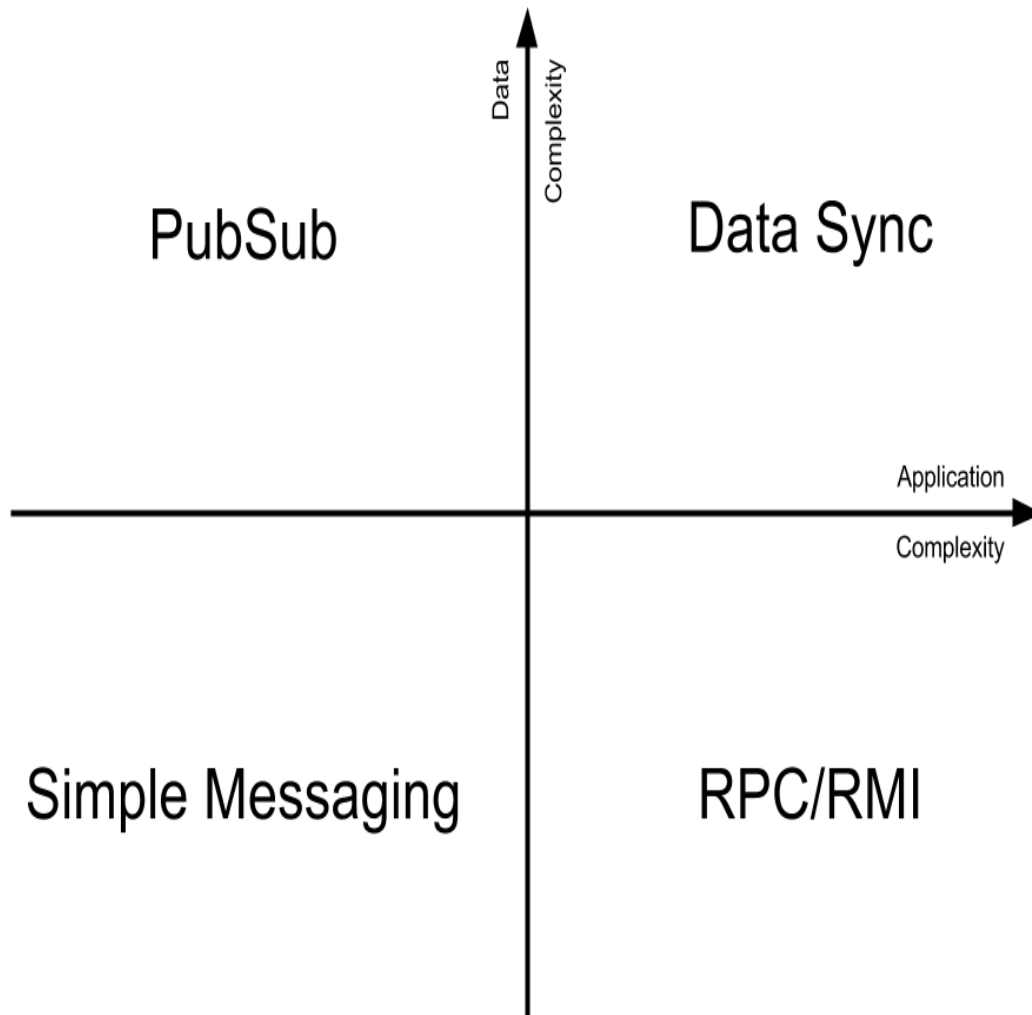
RealTime Frameworks

- NodeJS/Socket.io
- XSockets.NET
- SignalR
- Pusher *
- Fleck
- Realtime.co *
- PubNub *
- Tornado
- Kaazing **
- Firebase *
- Autobahn

* SaaS

** SaaS and SelfHosted

Communication Patterns

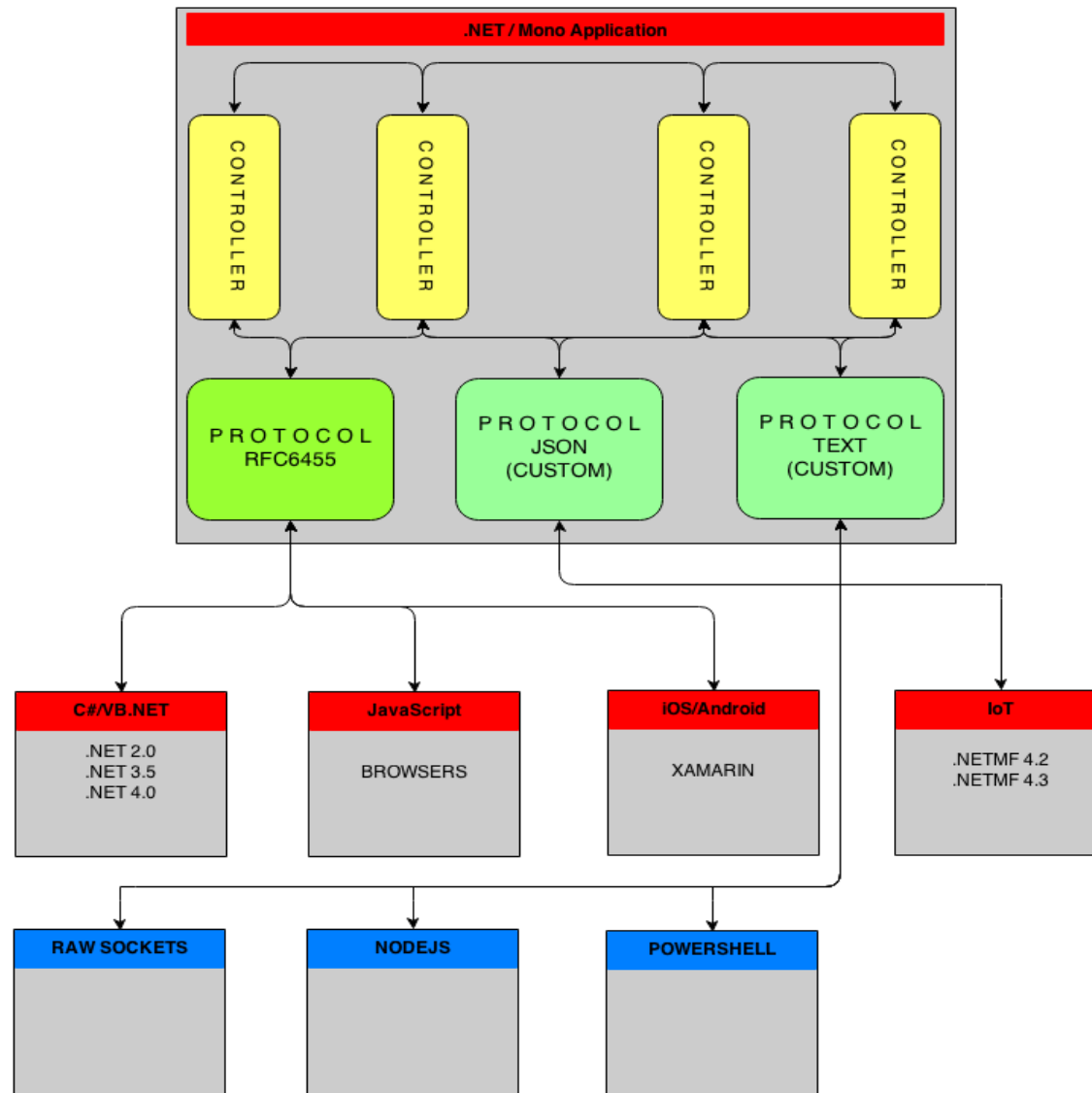


Framework Capabilities

The most important parts (IMO) of a "real-time" framework?

- Modular architecture
 - *So that functionality can be overridden/added in a smooth way*
- State
 - *So that we get control over where messages are sent*
- Cross-Protocol Communication
 - *So that we can connect things/systems regardless of protocol*
- But also...
 - *Scaling*
 - *Security*
 - *Etc...*

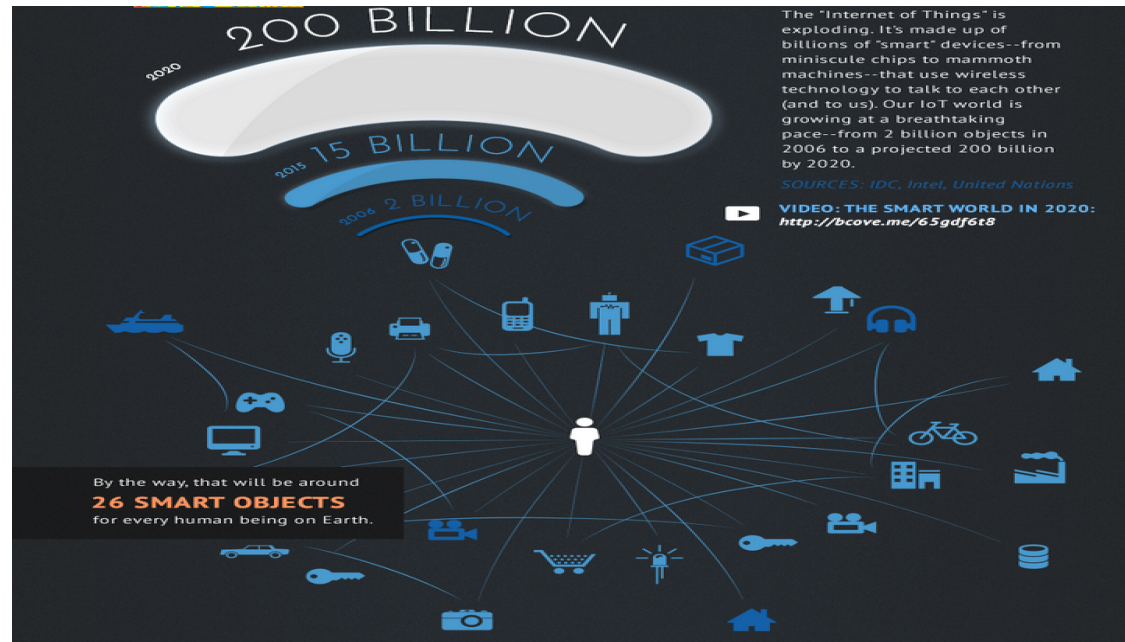
How it works... kind of...



<CODE/>

Code available at: <https://github.com/codeplanner/NDC-InternetOfThingsDay-2014-11-06>

Why should I care about IoT?



Today there is ~300.000 developers in IoT. By 2020 that number is expected to be ~4.500.000.
An annual growth by 57 %

Thank You!

Questions?

Uffe Bjorklund

email: uffe@xsockets.net

twitter: [@ulfbjo](https://twitter.com/ulfbjo)

Sources/Credits

IoT statistics 1: Intel

IoT statistics 2: ReadWrite.com

Image of "Communication Patterns" by Phil Leggetter

Graphs by Wijmo

Game by html5quintus

Code samples by XSocket.NET

MissileSharp by Christian Specht

SharpDX by Alexandre Mutel

RevealJS by Hakim El Hattab