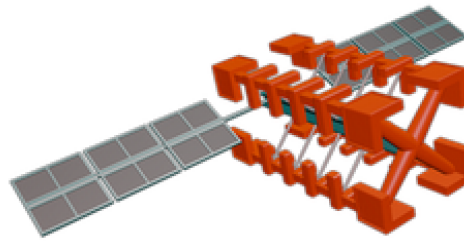# Go real-time with "Internet of Things"

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...*

Todays agenda

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

XSockets

NDC
EVENTS

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*
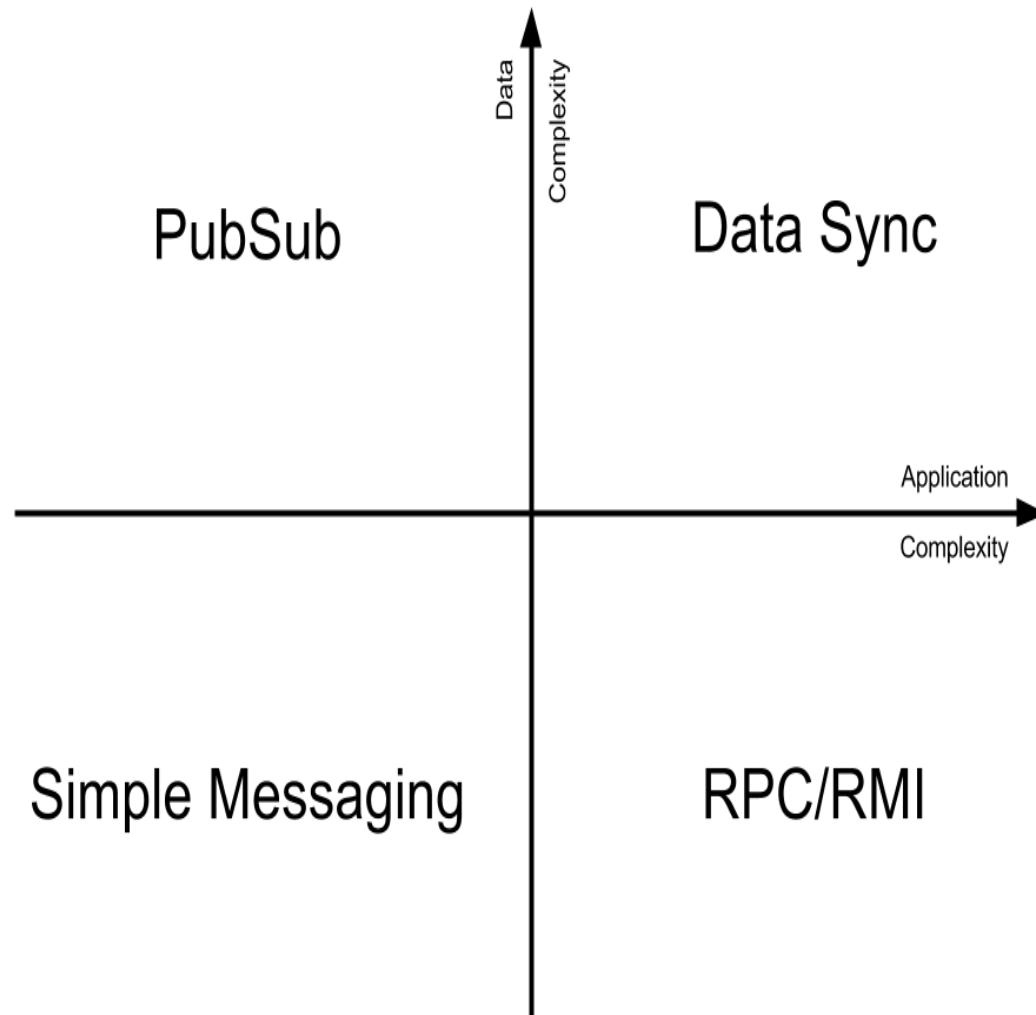- So...
  - *Simple*
  - *Fast*
  - *Saves resources*

RealTime Frameworks

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

* SaaS
** SaaS and SelfHosted

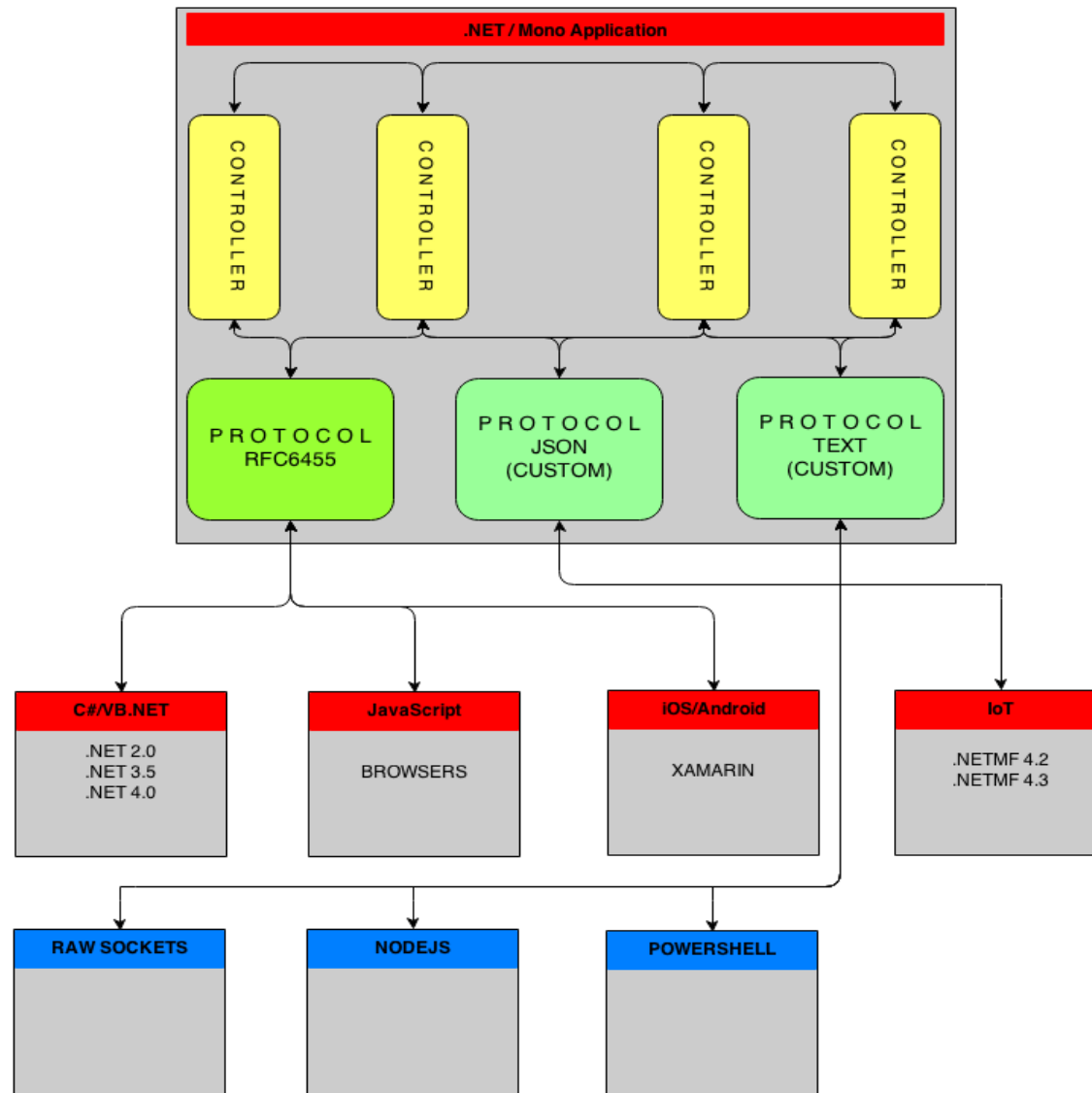# Communication Patterns

Framework Capabilities

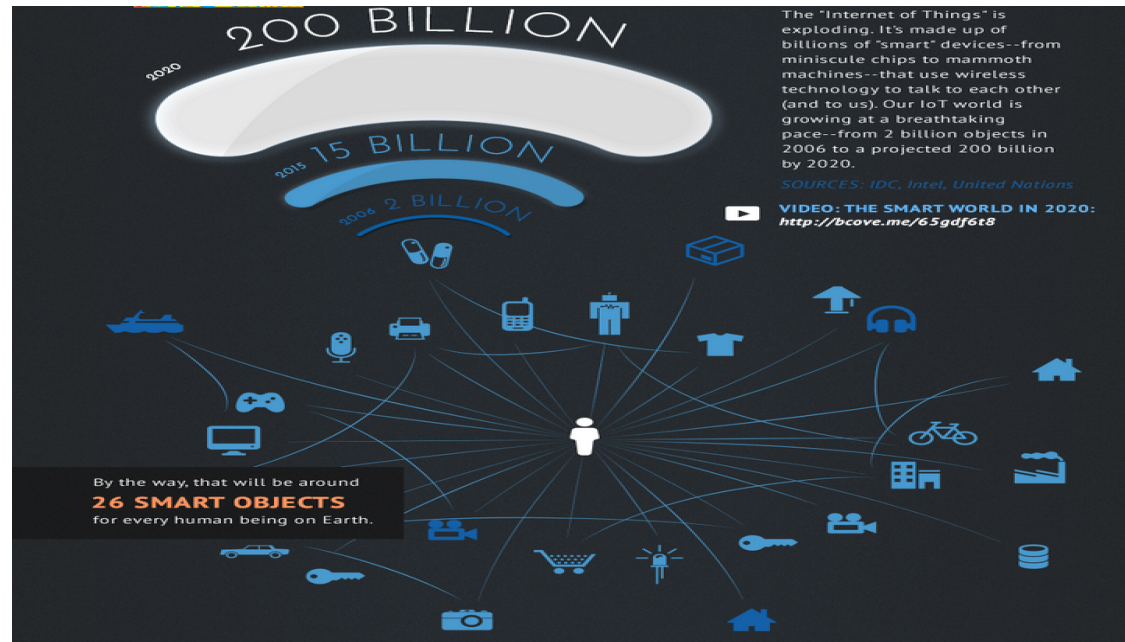The most imporant parts (IMO) of a "real-time" framework?

- Modular architecture
  - *So that functionality can be overriden/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 regardles of protocol*
- But also...
  - *Scaling*
  - *Security*
  - *Etc...*

How it works... kind of...

\<CODE/>

Why should I care about IoT?

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

Thank You!

Questions?

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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 XSockets.NET
MissileSharp by Christian Specht
SharpDX by Alexandre Mutel
RevealJS by Hakim El Hattab