

# IoT Edge Intelligence

## The Need for New Software Development Approaches

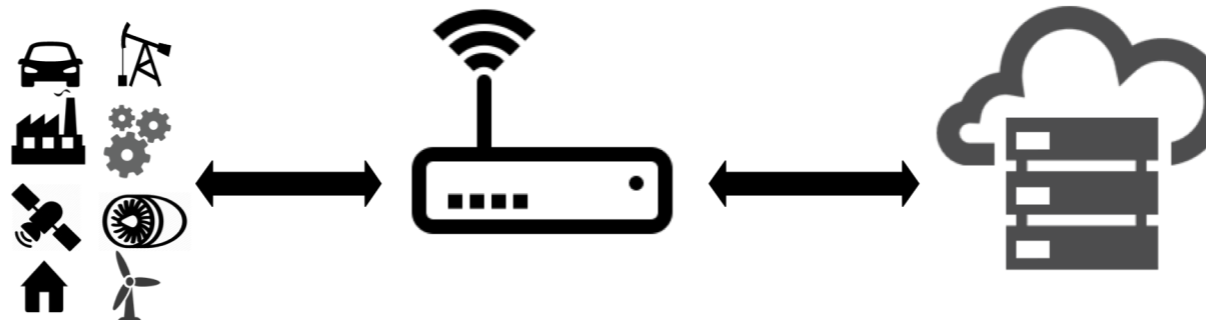
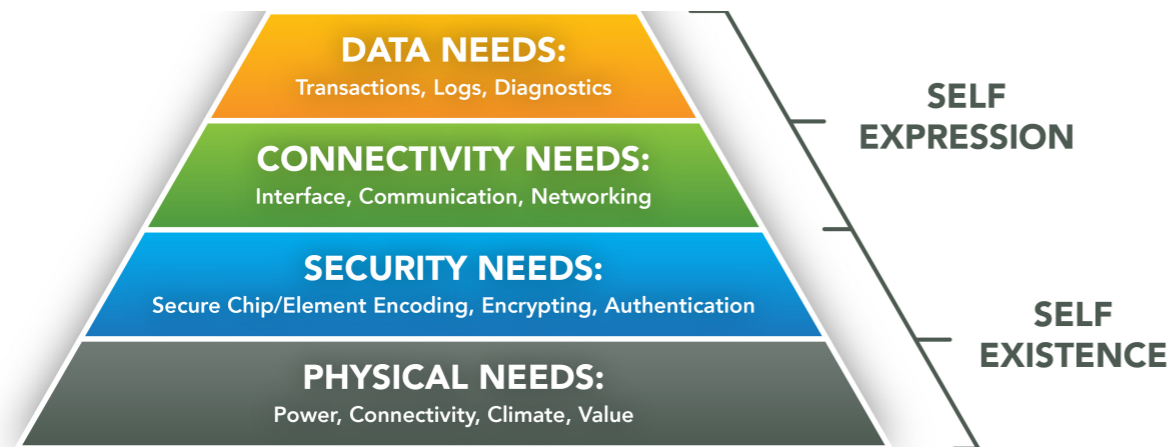
Bart Jonkers  
Bitreactive Sales & Business Development

Bitreactive AS  
Professor Brochs gate 2  
7030 Trondheim  
Norway  
+47 957 26339

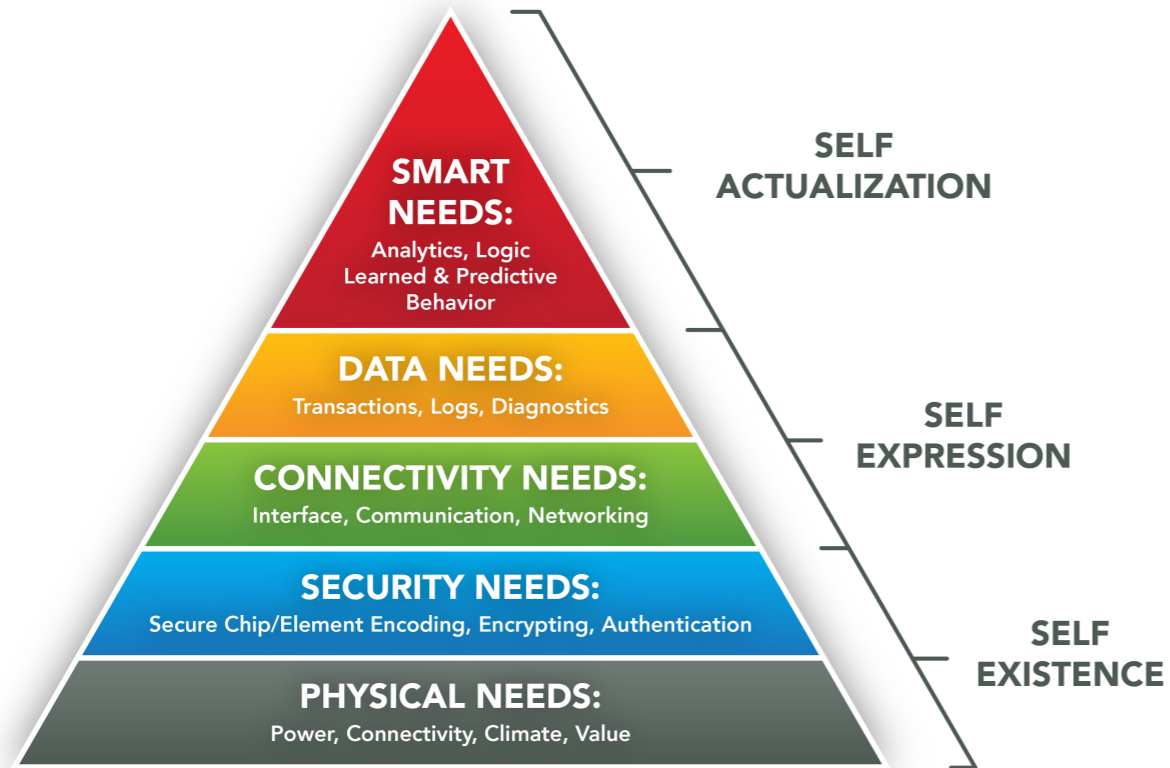
# HIERARCHY of IoT THING NEEDS

## First Wave of IoT solutions

- Acquire data at Edge
- Normalize Data
- Process in cloud



# HIERARCHY of IoT THING NEEDS

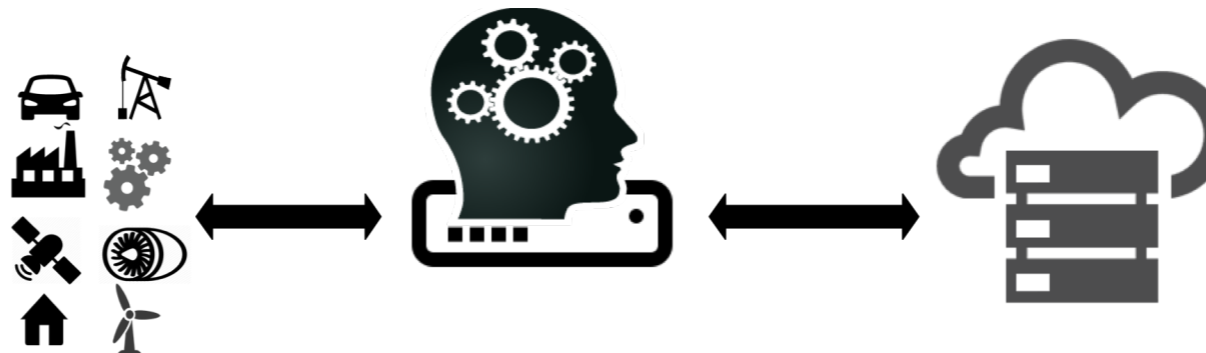


## First Wave of IoT solutions

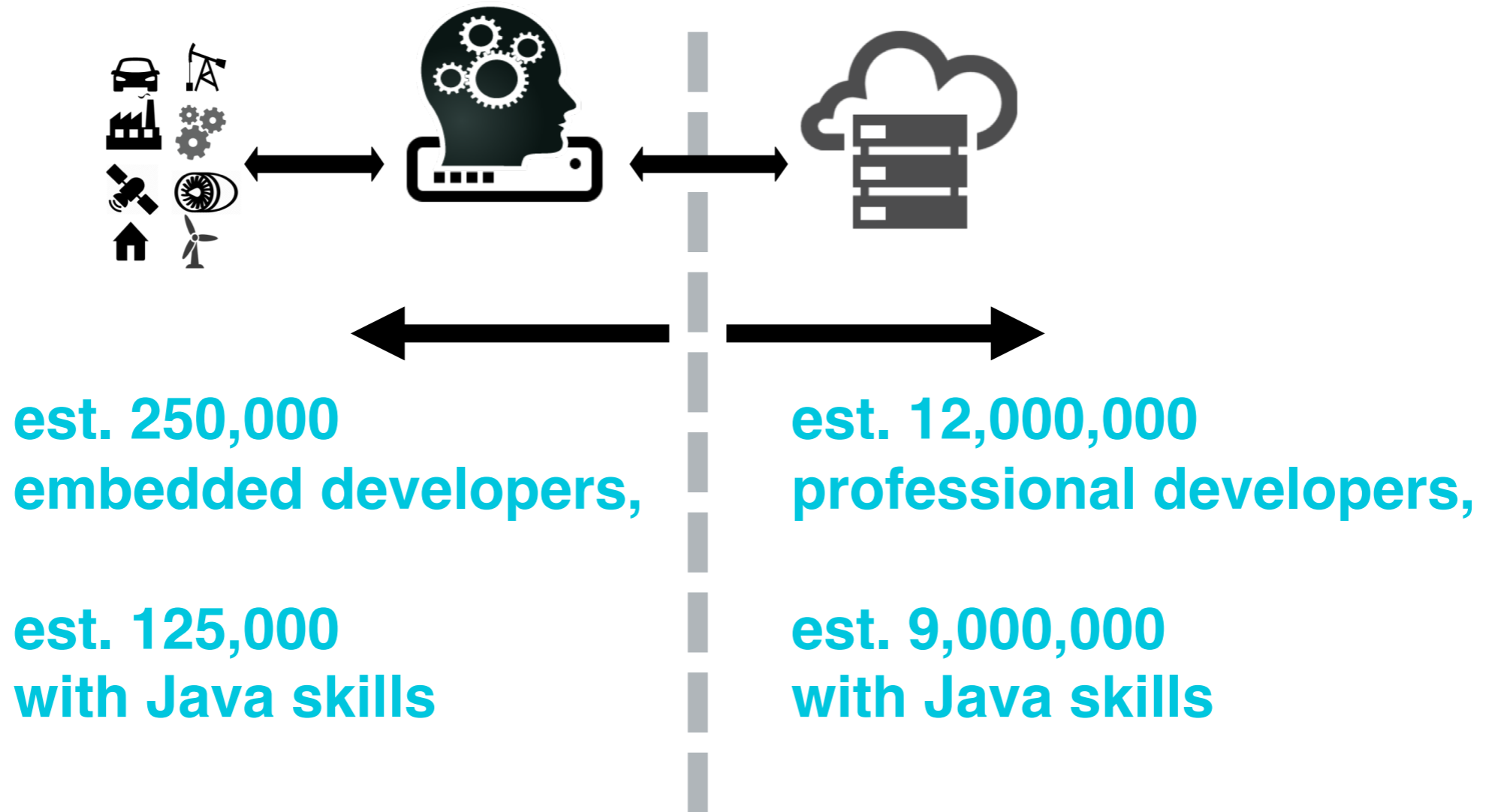
- Acquire data at Edge
- Normalize Data
- Process in cloud

## Second Wave

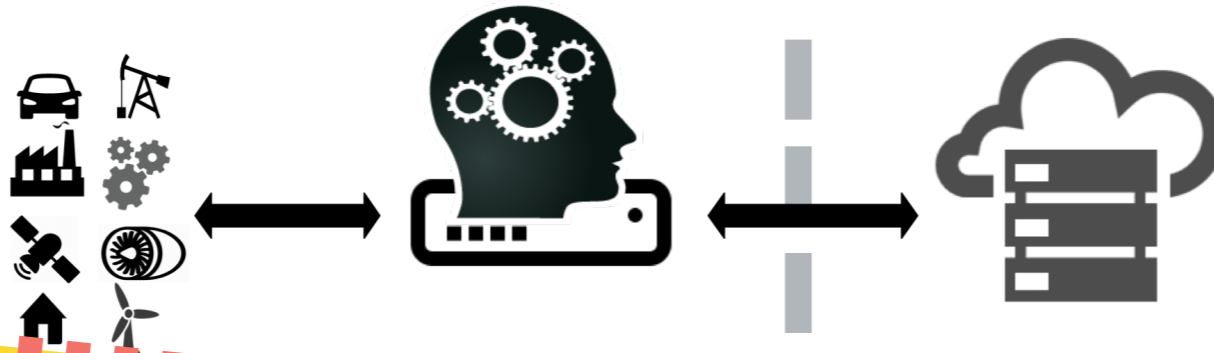
- **Intelligence in edge to make decisions locally**
- **Independent from cloud or network**
- **Real time, local analytics, secure**



## The IoT Skills Gap



## The IoT Skills Gap

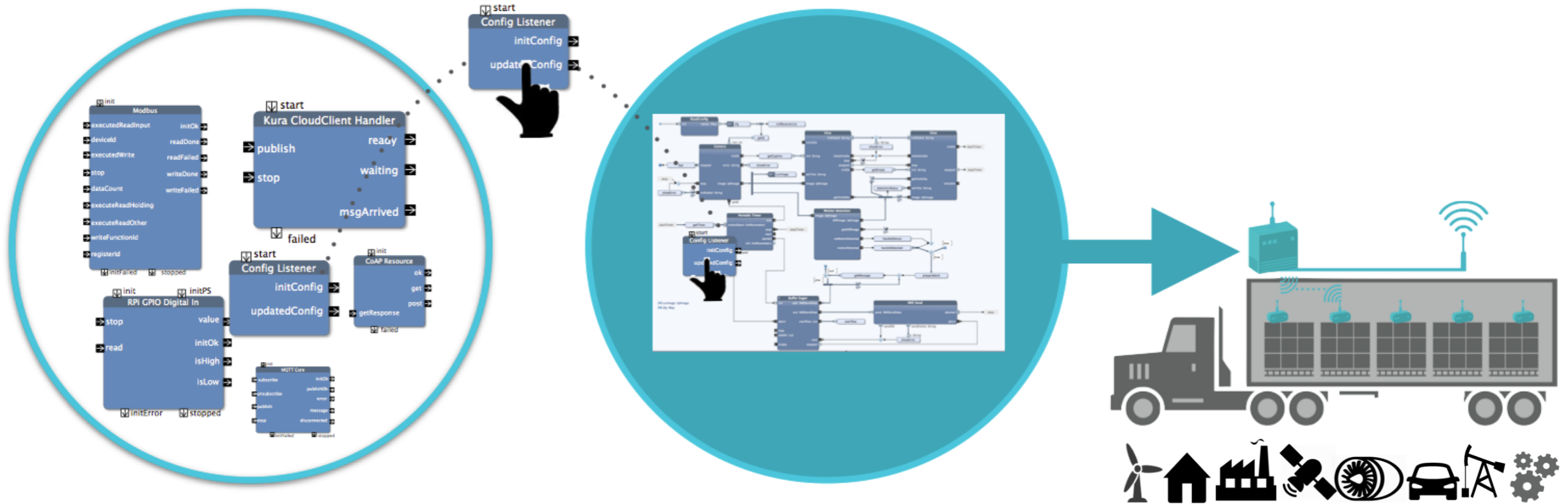


**50 billion devices by 2020?**  
**HOUSTON, WE HAVE A**  
**PROBLEM !**

with Java skills

→  
st. 12,000,000  
professional developers,  
st. 9,000,000  
with Java skills

# Reactive Blocks - Visually compose application from off-the-shelf Building Blocks

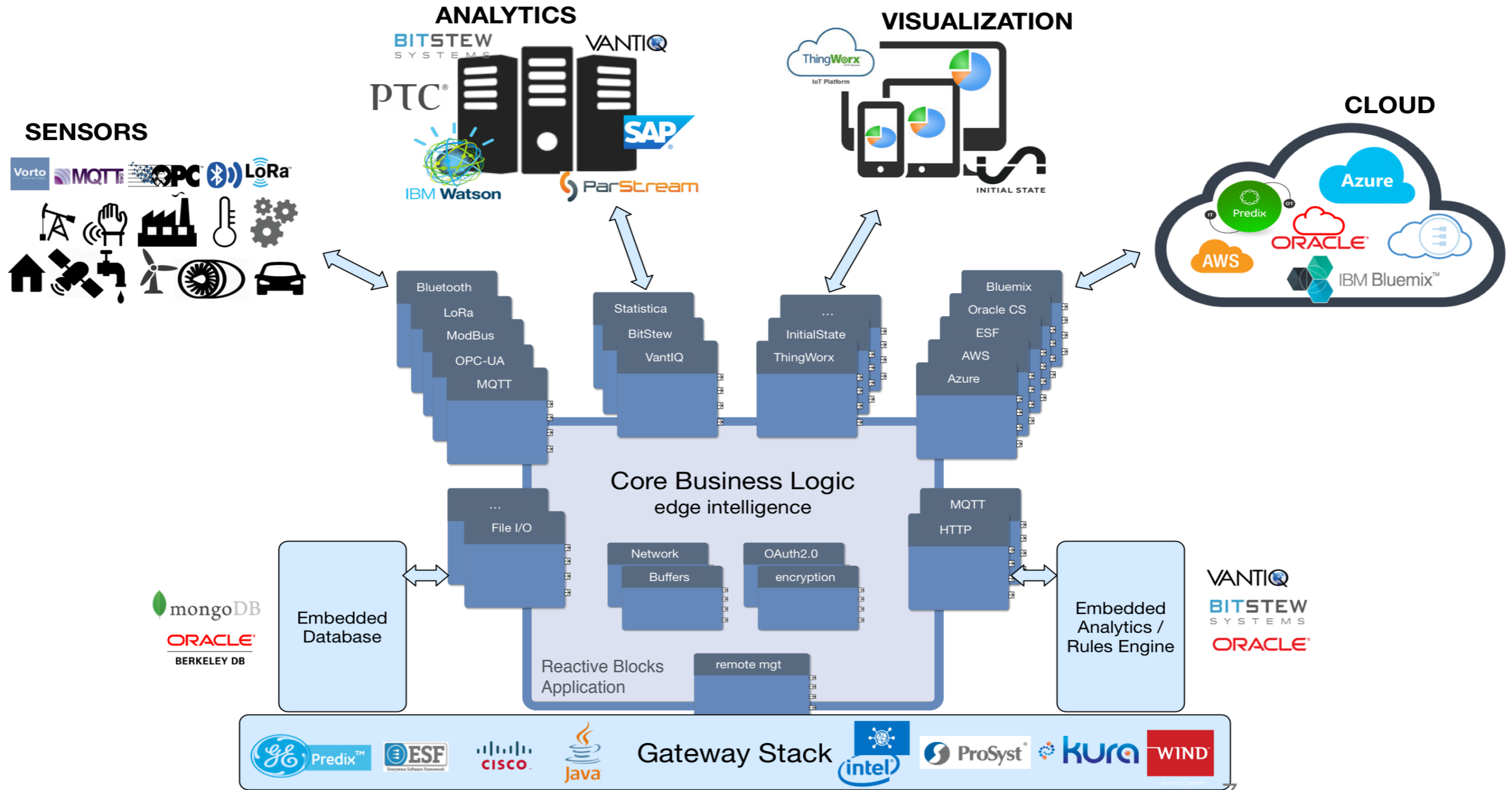


Pick Building Blocks From library

Compose application visually

Deploy intelligence on edge device

# Reactive Blocks – A framework for intelligent IoT gateways and edge devices



## Benefits

- **Rapid Prototyping** using ready components
- **Lowered barrier** to developing for embedded edge devices
- **Community development** of new open source components
- **Lowered development cost, shorter time-to-revenue**





bitreactive

## Bart Jonkers

Sales & Business Development

cell +31653707619, [bart@bitreactive.com](mailto:bart@bitreactive.com)

Bitreactive AS, Headquarters  
Professor Brochs gate 2  
7030 Trondheim  
Norway  
+47 957 26339

Bitreactive Sales Office  
Apollovlinderlaan 23  
5641BJ Eindhoven  
The Netherlands  
+31653707619

get started at [www.bitreactive.com](http://www.bitreactive.com)

# The IoT requires rethinking developer tooling

## Project Characteristics

- Many projects are unique
- Custom hardware, OS
- Deployments are relatively small

**Standardize on re-usable IoT components, Automate the plumbing**

## Edge Device Characteristics

- Explosion of hardware devices
- Explosion of operating systems
- Demand for intelligence at edge

**Abstract from hardware+OS with embedded Java**

## Business Characteristics

- Time To Market, Time To Revenue
- Longevity of deployments
- Cost of maintaining remote devices
- Cost of connectivity

**Offer high productivity tooling, Enabling resource-efficient, maintainable, edge intelligence.**

## Developer Characteristics

- Shortage in embedded specialists
- Field Application Engineers, Enterprise Developers, Process Engineers struggle to become embedded programmers

**Visual modeling to abstract from low level coding**

