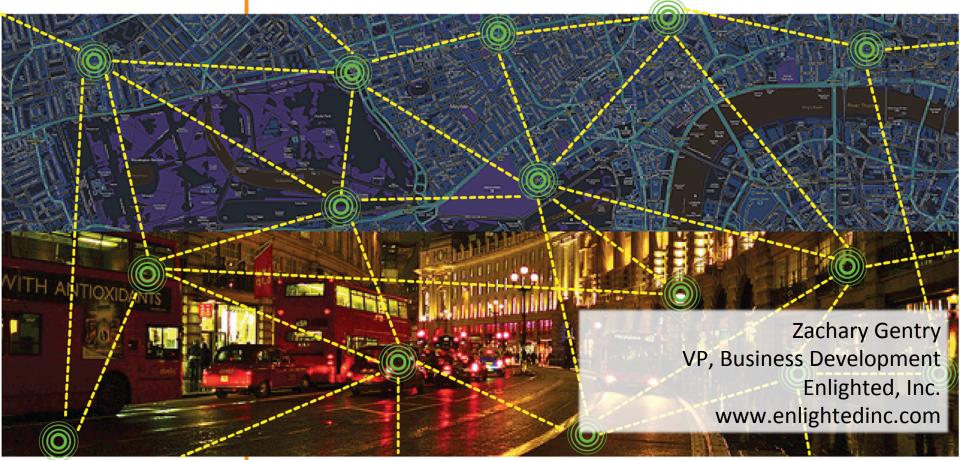
**SEMINARS** 



IES SF Education

# 2015 SPRING Lighting & Placemaking **Part 3- Smart City**



## **Smart City Concepts**

- Smart Transportation
- Smart Buildings
- Smart Citizens
- Smart Resources (Water, Energy, Waste)
- Every "Smart" connected to every other "Smart"

## Definition: Internet of Things (IoT)



Data is gathered, processed, filtered, and transmitted by a "terminal" or connected device.



Data passes over networks, which may be Wi-Fi, cellular, mesh radio, satellite, or fixed line.



Information from across the IoT network is gathered and stored, often in the cloud.



Through manual analysis or automated processing, insights are extracted and presented.



Based on these Insights, alerts are sent to people, enterprise systems, or IoT devices to take action.



IoT data is exchanged with other systems, monetizing it and enriching it with third-party data. In order to obtain value from remote objects, all components of an IoT system must be in place

# Where are the elements of potential value?

#### EFFICIENCY:

CONTROL AND REACT

Gathered data is actioned more systemically, with greater automation, remote control, and some trends analysis and reporting.

#### INNOVATION:

TRANSFORM AND EXPLORE

Data and insights are used to support entirely new business models, products and services, and data economies.

#### VISIBILITY:

CONNECT AND MONITOR

Individual assets, each gathering just a small amount of data, are connected to enable manual monitoring as part of a single organizational process, with simple threshold-based exception alerting.

#### AGILITY:

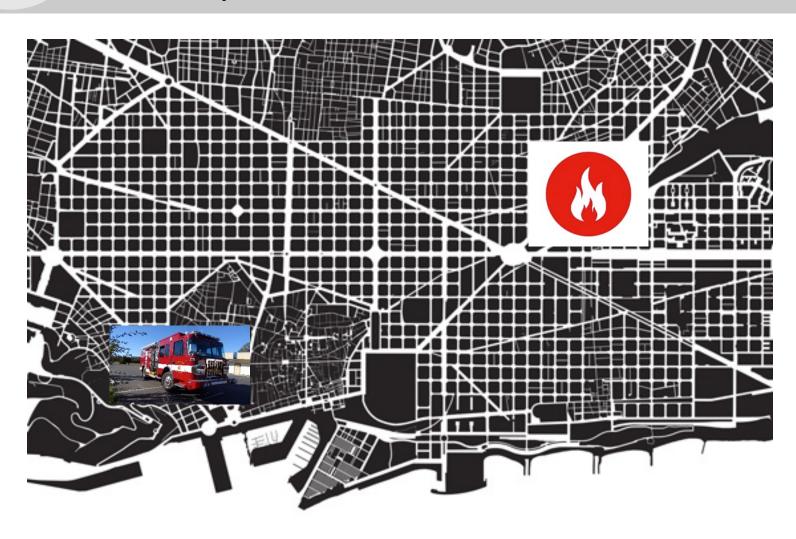
PREDICT AND ADAPT

Sensed data is augmented by external data sets for complex predictive analysis and preemptive action, closely integrated with a number of organizational processes.

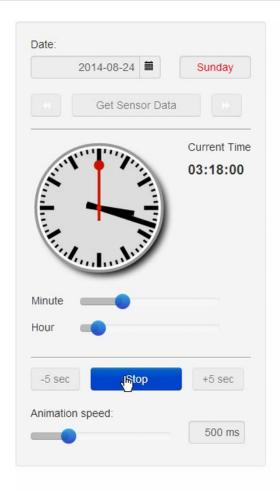
DEGREE OF ACTION

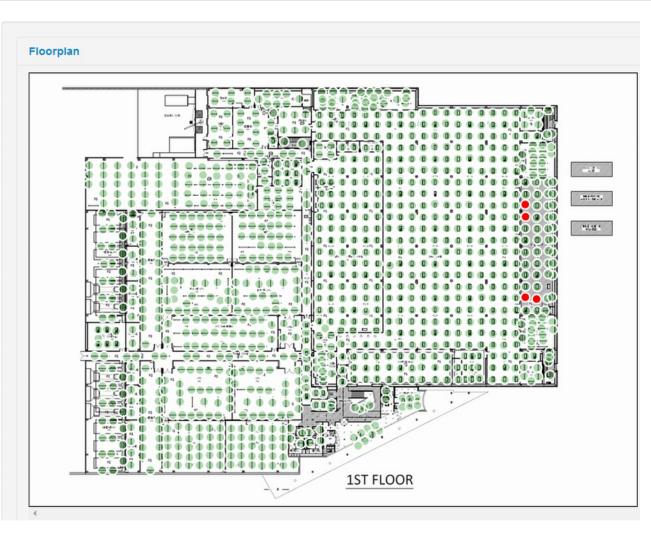
DEGREE OF SENSING

# Case Studies of Potential Value: Fire Safety



## Building IoT





### **Urban Realities**



Data is gathered, processed, filtered, and transmitted by a terminal or connected device.



Data passes over networks, which may be W1-F1, cellular, mesh radio, satellite.



Information from across the IoT network Is gathered and stored, often in the cloud.



Through manual analysis or automated processing, insights are extracted and presented.



Based on these insights, alerts are sent to people, enterprise systems, or IoT devices to take action.



IoT data is exchanged with other systems, monetizing it and enriching it with third-party data.

#### TRANSPORT:

Building, Personal and **Urban Network** Requirements differ

#### STORAGE:

Building, Personal and **Urban Storage** will not be held in common



### What is needed?

- Bridges and Gateways
- Security and Handshakes
- Automated Management
- Redundancy
- "Smart" Governance