

# Smarter and Greener:

## Delta's Smart Building Solution

– Delta EMEA HQ as example

Milo Tseng  
Smart Building  
Delta Electronics EMEA  
Dec. 8<sup>th</sup>, 2015





# Green and Smart Building

Innovative, Clean and Energy Efficient Solution

## Solar Decathlon Europe

Jul., 2014



**Joined the SDE, a leading housing experiment with Delta's building and energy technology**

## Delta Americas HQ

Oct., 2015



**Demonstrated Delta's commitment and capability of green and smart building**

## Delta EMEA HQ

Jun., 2016



**Showcasing Delta's system integration capability of total building energy management**

# Green Building vs. Smart Building

## Commonality

### Green Building

- Sustainable Site
- Water Efficiency
- Energy and Atmosphere
- Material and Resources
- Indoor Environment Quality
- Innovation and Design Process

- Optimize Energy Performance (with additional commissioning of measurement and verification)
- Carbon Dioxide Monitoring
- Controllability of Systems
- Permanent Monitoring Systems
- Innovation in Design

### Smart Building

- Data Network / VOIP
- Video Distribution/ AV Systems
  - Video Surveillance
  - Access Control
  - HVAC Control
- Power Management
- Programmable Lighting Control
- Facilities Management
- Cabling Infrastructure
- Wireless Systems

Environment Oriented

Technology Oriented

# Key Building Systems

## General Purpose Commercial Building



Enterprise System Information

Energy Information Management

Digital Video

Asset Locator

Security & Access Control

Intrusion Detection

Smoke Control

Fire detection & Alarm

Environment Control

Indoor Air Quality Services

Lighting Control & Retrofit

Water and Waste Management

Mechanical Maintenance  
& Retrofit

Energy Supply & Load  
Management

HVAC Maintenance Services

On-site Technical Services

# A Retrofit Project

Delta Electronics EMEA HQ at Hoofddorp, NL

**30 years-old building! We do need to upgrade this building for business and operation from a long term perspective**



**What/How could we create added value to this building?  
and with Delta's capabilities? Could we do it in a smarter and greener way?**

No energy label and is energy consuming with old technology

Lack of showroom and meeting room for business development

No reference case for smart building and integration business



# 30% Less Energy Consumption

2015 ~2016

To turn Delta Electronics EMEA HQ into an energy efficient and sustainable operation building with following goals

Build a reference case for business development

Certify to be energy efficient and sustainable building

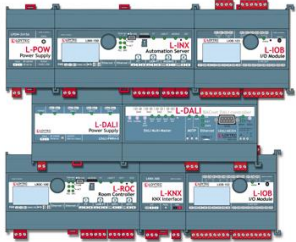
Utilize space for business growth in next 5~10 years



# Step by Step Approach

2015 ~2016

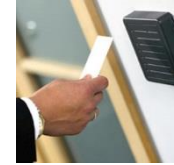
**BACS based on  
Loytec and Delta  
Platform**



**Integrated with Delta  
products available in  
EMEA markets**



**Using the software  
system platform by  
Delta**



**Dashboard to  
showroom as a full  
scale live showcase**



**BACS and BEMS  
(Building/Energy)**

4Q., 2015

**Power System**

1Q., 2016

**Surveillance / SI**

2Q., 2016

**Showroom**

3Q., 2016

# Creating Control Architecture

**BACS by Delta/Loytec**

Energy consumption  
and equipment's AST  
from all data points



L-Web Building  
Management  
System



Delta Energy  
Online System



# Setting Up Management Platform

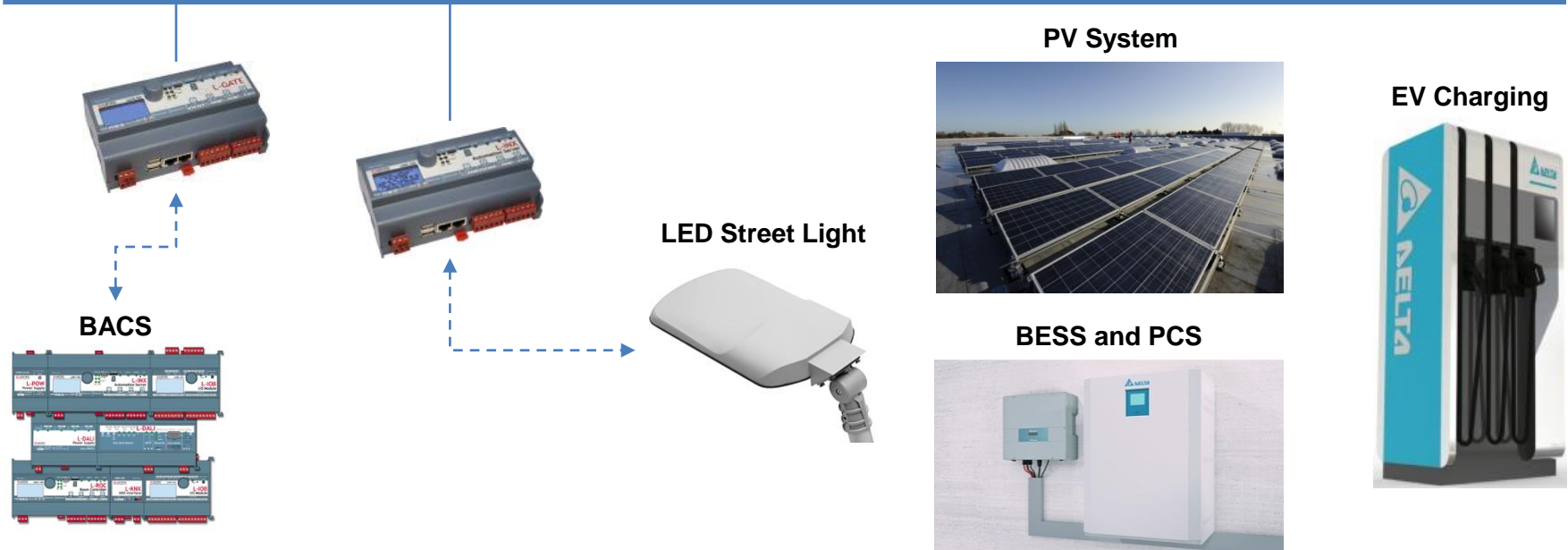
**BEMS by Delta**



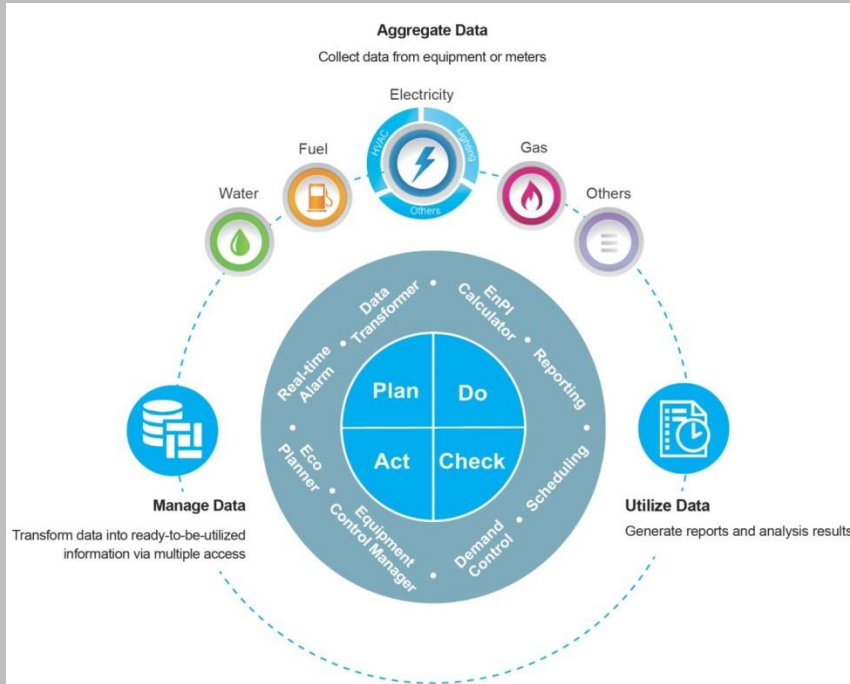
L-Web Building  
Management  
System



Delta Energy  
Online System



## Energy Online is an Enterprise-Grade Energy Visualization, Auditing and Analysis platform



Convenient Energy  
Monitoring



Smart Energy Diagnostics



Scalable Enterprise-Grade  
Energy Management



Cost-effective  
Maintenance

**Approximately 3 years ROI\* and will be able to feedback to the grid**

A pie chart illustrating the distribution of energy sources. The chart is divided into four segments: Gas (47%, red), Electricity (34%, green), Pipeline (17%, blue), and Water (2%, purple). The segments are labeled with their respective energy source names and percentages.

Energy Source	Percentage
Gas	47%
Electricity	34%
Pipeline	17%
Water	2%

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Energy Online is now serving Delta and customers' global sites

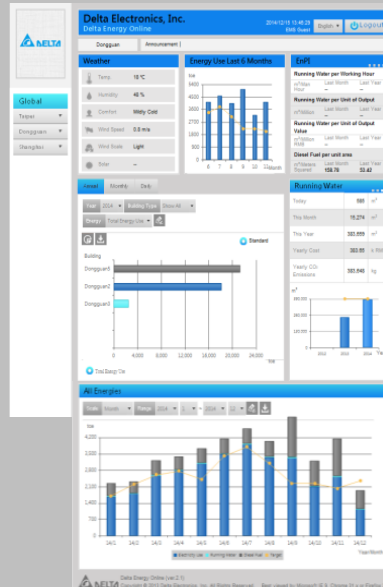
### Login System



### Global Overview



### Region Overview



### Building Overview



We could do the following with you for your customers ....

Work with EPC or end customers to design and implement green/smart building project



Work with SI or end customers to design and implement BACS/BEMS for retrofit project



Work with SI or end customers to improve existing energy performance in various fields

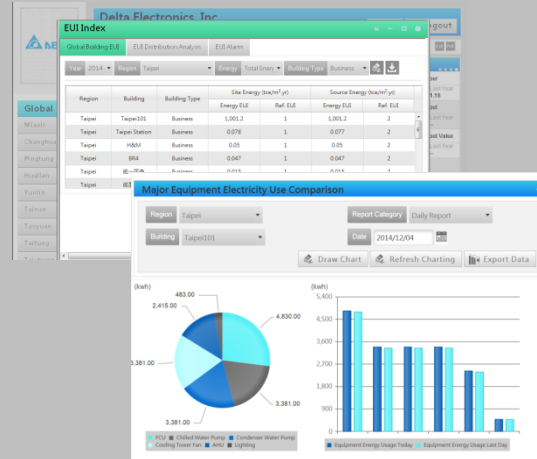


Delta's smart building solution is also suitable for the following field

### Facility Management



### Enterprises Energy Performance

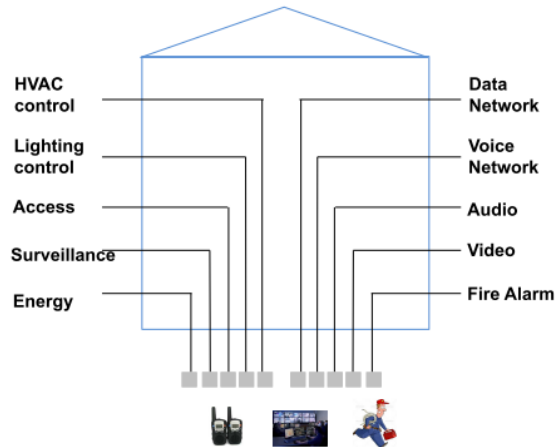


### Telecom Multi-site OPEX

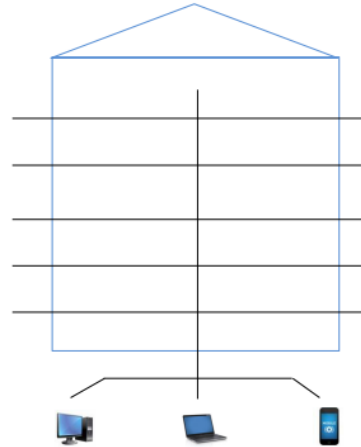


**By leveraging the technology, Delta is able to connect individual buildings and independent systems as a Smart City**

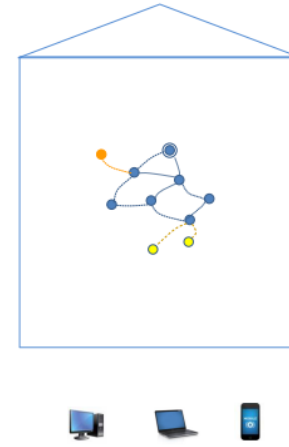
**Management Consoles for Individual Systems**



**Local and Remote Multifunction Management Console**



**IP, WSN, Mobile, Auto**



**Automatically Fine-tune the Control**



# Potential Business Opportunities

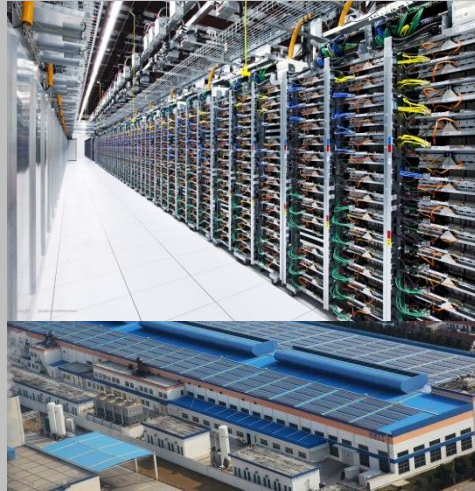
## Energy Management Solution

**Delta's EMS is for customers demands lower OPEX and higher energy efficiency**

### Commercial



### Industrial



### Multi-site Operation



Please visit us in  
Hoofddorp, NL in Jun., 2016



# Smarter. Greener. Together.

To learn more about Delta, please visit [www.deltaww.com](http://www.deltaww.com)

