Industrial IoT solution with sensors, platform and application to enhance manufacturing efficiency

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www.daviteq.vn
1. Spending of IoT in various vertical markets;
2. Benefits of IIoT for Manufacturing;
3. Connectivity in Manufacturing and Why is cellular preferred?
4. Proven IIoT applications has been done by Daviteq;
5. Key Components in IIoT Solutions;
6. About Daviteq & Contact information.
1. Spending of IoT in Vertical markets

**Spending on Internet of Things worldwide by vertical in 2015 and 2020**

(in billion U.S. dollars)

<table>
<thead>
<tr>
<th>Vertical</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discrete manufacturing</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Transportation and logistics</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Utilities</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>BTC</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Healthcare</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>Process</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Energy and natural resources</td>
<td>3</td>
<td>12</td>
</tr>
</tbody>
</table>

**IoT network connections – 2016 vs. 2017 % growth**

- Healthcare/pharma: 11%
- Energy/utilities: 41%
- Smart cities/communities: 19%
- Manufacturing: 84%
- Transportation/distribution: 40%

**Figure 1: Year-on-year growth in Verizon IoT network connections**

Source
BCG
© Statista 2018

Additional Information:
Worldwide: BCG; IDC; 2015
1. Spending of IoT in Vertical markets
2. Benefits of IIoT for Manufacturing

- Improve operational efficiency
- Reduce downtime
- Improve Productivity
- Maximize asset Utilization
- Increase Worker Skills & Productivity
- Reduce Cost
- Improve Product Quality

Sources: Morgan Stanley-Automation World Industrial Automation Survey, AlphaWise
### 3. Connectivity in Manufacturing and Why Cellular is preferred

<table>
<thead>
<tr>
<th>Connectivity Type</th>
<th>WiFi/Ethernet</th>
<th>Cellular</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantage</strong></td>
<td>• Data transmit internally; • High transmission rate (only for few applications);</td>
<td>• Low investment and operation cost; • Quick deployment; • High reliability by cellular supplier • High mobility;</td>
</tr>
<tr>
<td><strong>Disadvantage</strong></td>
<td>• High investment and operation cost; • Time-consuming deployment; • Less mobility; • Low reliability;</td>
<td>• Data transmit outside factory (but data is encrypted); • Low transmission rate (only few applications need high rate);</td>
</tr>
</tbody>
</table>
3. IIoT system architecture with Cellular network
Proven IIoT applications that Daviteq has done in MANUFACTURING
Energy Management Solution for Manufacturing

Key Benefits

• Reduce production downtime
• Improve operational efficiency
• Reduce cost
• Enhance worker safety
• Comply to authority regulations and customer requirements
Energy Management Solution for Manufacturing
Key Benefits

- Increase productivity
- Reduce cost
- Increase worker productivity
- Maximize asset utilization
- Reduce downtime
- Improve product quality
Factory Environment Monitoring Solution

**Key Benefits**

- Improve product quality
- Enhance staff satisfaction
- Improve worker productivity
- Comply to authority regulations and industry standards
Proven IIoT factory environment monitoring solution

Environment wireless sensors

Wireless coordinator

Cellular iConnector

IoT Globiots platform

Cellular iConnector, integrated wireless coordinator

Environment wireless sensors
5. Highlight Features of key components in IIoT

Smart IoT Gateway

iConnector

Highlight Features

- Support 3G/4G/NB-IoT
- Data logging Function with on-chip memory
- Local Event Processor
- Fieldbus connectivity: Modbus, EthernetIP, Cclink, Profinet...wireless sensor (Lora/Sub-Ghz)
- Ultra-low power design;
- Proven since 2014 by Industrial customers;

5. Highlight Features of key components in IIoT

- **TYPICAL APPLICATION**
  - Internet connection via Cellular network
  - 02 x Relays for Alarm or Local Control
  - RS485/ModbusRTU network

- **WIRELESS CONNECTION TO EQUIPMENTS**
  - RS485 Wireless Bridge W5433-B, Slave node
  - POWER METER
  - PLC
  - AC DRIVE
  - FLOW METER

STHC-H3.PNG

STHC-H4.PNG
5. Highlight Features of key components in IIoT
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Wireless Sensors & Actuators

- Wireless Sensor Transmitter
- Wireless Ambient Temperature Sensor
- Wireless Ambient Humidity Sensor
- Wireless Process Pressure Sensor
- Ambient Temperature Sensor Module
- Ambient Humidity & Temperature Sensor Module
5. Highlight Features of key components in IIoT

Highlight Features

Plug & Play
Pre-loaded Globiots software inside the server allows it to run automatically upon power up and connected

Heavy Duty
Industrial design with Fanless allows the server can work in extreme conditions like high temperature, high vibration, dust...

Powerfull IoT Functions
Pre-loaded of full functions of Globiots platform like Big Data storage, Data analytic, Visualization. It can be upgraded easily in future.

3-Year warranty
Warranty for both Hardware & Software

Artificial Intelligent
Optional software package utilize the Machine Learning technique to detect Anomaly and Prediction for Machine or Equipment healths.

Self-service Reporting
Optional software package allows user can build a report in minutes by drag & drop

Product link:
5. Highlight Features of key components in IIoT
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Industrial IoT Platform

- Globiots is an Global Industrial Internet of Things Platform, developed by Daviteq since 2012, gained from 10-year experiences in Measurement & Controls;
- Globiots platform allows customers easily connect their machine, process & people for Remote Management and Business Intelligent.
- Globiots can be deployed and installed everywhere in the World. All Globiots clusters can be connected worldwide to form a distributed world-wide IoT system.
We are EXPERT in:

✓ Sensor & Wireless Sensor
✓ IIoT Gateway
✓ IIoT Platform
✓ End-to-End IIoT Solutions
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