Adoption & Maturation:
Advance Beyond Foundational IoT in Oil & Gas

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Why are companies investing in IoT?
Inefficient operations hurt the bottom line.

Non-productive time is expensive.

Data utilization is very low.
Stages of IIoT Maturity

1. **Device Connectivity**
   - On-board logic to collect data and transmit to cloud databases

2. **Data Monitoring**
   - Dashboards and visualization tools to monitor real-time data

3. **Data Analytics**
   - Machine learning and complex analytics used to develop device models (digital twins) and insight

4. **Automation**
   - Development and execution of logic rules that automate business activities and device configuration

5. **Edge Computing**
   - Distribution of analytics and orchestration to the device level
Survey Methodology

- Online survey conducted in the US **between Aug 15 and Sept 1**
- Companies with annual revenues of **more than $250M** for transportation/manufacturing, and **$400M** for O&G
- **310** respondents with operations or line of business titles
- **More than 80%** have decision-making or influence regarding IIoT
86% of industrial organizations have adopted IoT, yet fewer than half are using advanced analytics and only a quarter have taken steps to automate the application of insights.
84% consider their IIoT solutions to be extremely/very effective
Current IIoT Adoption: Oil & Gas

- **84%** Currently have an IIoT solution in place
- **10%** Plan to implement an IIoT solution this year
- **26%** have used IIoT for 12 months or more
- **77%** indicated their solutions are very or somewhat important for their company
- **63%** established their IIoT solution in the past 12 months

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IIoT Maturity Model

IIoT Use in Oil & Gas

IIoT Use (by % of responses)

- **Device connectivity and simple data forwarding**: 76%
- **Real-time dashboard and monitored activity through constant data stream**: 49%
- **Advanced analytics, such as machine learning, cluster analysis, and artificial intelligence, from data scientists**: 46%
- **Automated simple, single-step actions such as service-ticket requests**: 27%
- **Data processing on (or very close to) connected equipment, in addition to functions performed in gateways or in the cloud**: 7%

**Most Mature**

**Least Mature**

**74% decrease**

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IIoT Maturity Model

IIoT Use Compared to Other Industries

IIoT Use (by % of responses)

- Device connectivity and simple data forwarding: 78%
- Real-time dashboard and monitored activity through constant data stream: 56%
- Advanced analytics, such as machine learning, cluster analysis, and artificial intelligence, from data scientists: 48%
- Automated simple, single-step actions such as service-ticket requests: 28%

Overall Average: 42% decrease

Highest IIoT ROI

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Top Business Challenge in Oil & Gas
Enhancing Operations Performance with IIoT

73% consider their IIoT solutions to be extremely/very effective.

Organizational Performance Improvement:
- 13% Significant
- 73% A Fair Amount
- 14% A Little

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Other Top Business Challenges in Oil & Gas

- **95%** Machine health, including predictive failure
- **76%** Device connectivity
- **27%** Automated actions

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Top Business Challenges

Current adopters cite these top business challenges targeted by IIoT solutions:

**Transportation**
- 95% Vehicle performance
- 65% Logistics
- 23% Operating costs

**Manufacturing**
- 95% Logistics (including factory floor)
- 82% Machine health
- 34% Operating costs
This Year’s Business Challenges

Business challenges next on the docket include:

- **71%** Orchestrating single-step actions (such as service ticket requests)
- **24%** Orchestrating complex actions across multiple systems (such as equipment inventory)
- **24%** Historical data analysis

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Top Business Challenges

Current adopters cite these top business challenges targeted by IIoT solutions:

- **Transportation**: 24%
  - Orchestrating single-step actions (such as service ticket requests)

- **Manufacturing**: 29%
  - Orchestrating complex actions across multiple systems (such as equipment to inventory)

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Oil & Gas IIoT Future View
The Future of IIoT is Bright for Oil & Gas Businesses

In the next 12 months...

56%
Investment will increase
(such as service ticket requests)

41%
Investment will not change
(71% of IIoT adopters have less than 50% of deployed devices IIoT-enabled)

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Bsquare 2017 Annual IIoT Maturity Survey:
http://ow.ly/tWCi30gtmmD