

The Business Value of Making Smart Manufacturing Real

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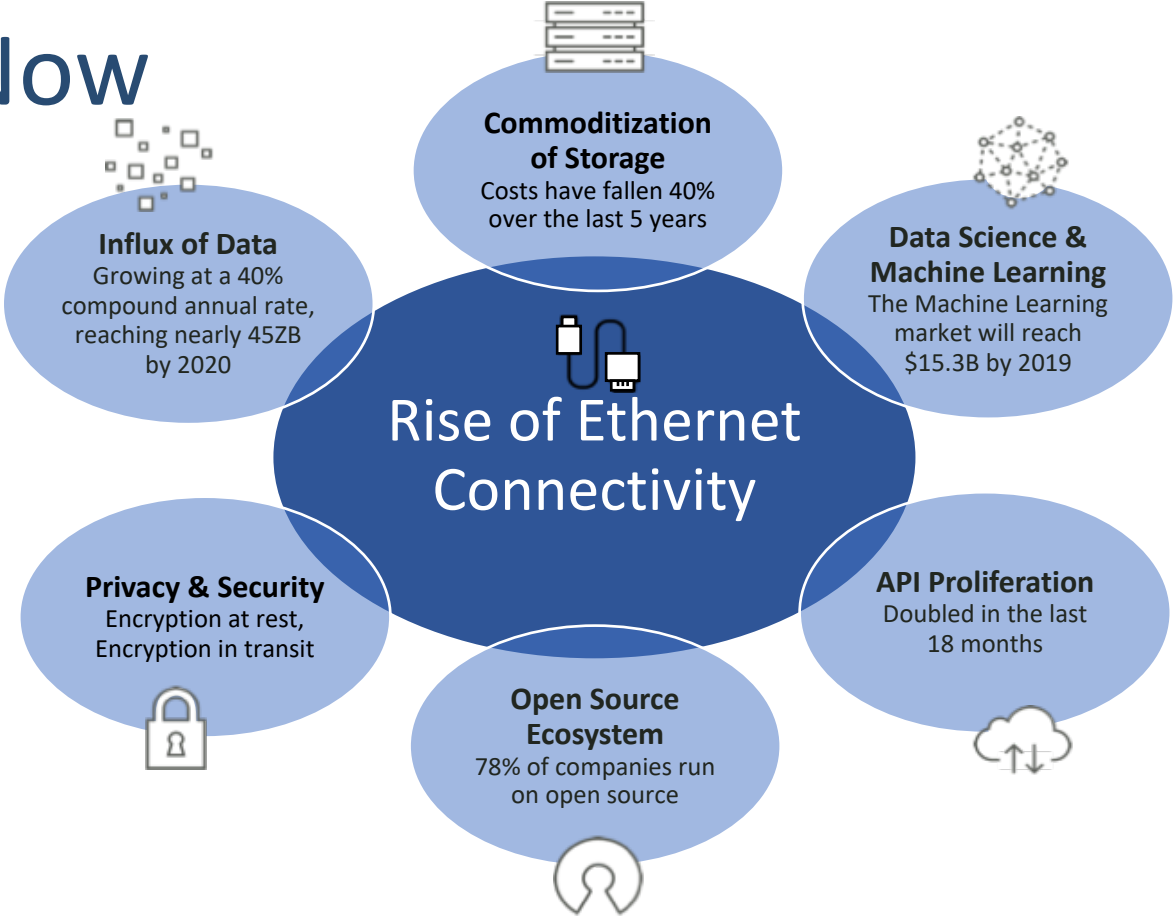
“ IOT will generate a staggering 400 zettabytes of data a year by 2018.”

A connected factory can produce up to a petabyte of data every day.

By using this data to improve production quality, drive efficiency, and guarantee machine uptime, manufacturers can potentially generate \$760B - \$2T in value creation

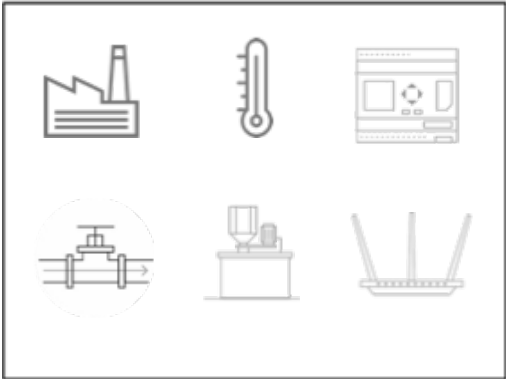
Reference: Cisco Global Cloud Index: Forecast and Methodology 2015 - 2020

Why Now



Where Does this Data Come From?

ASSET



SYSTEMS



CONTEXTUAL



Data Science connects information across the enterprise

How To Learn From Data?

Data analysis that **automates** analytical model building. Using algorithms that **iteratively** learn from data, machine learning allows computer to find **hidden insights** without being explicitly programmed **where to look**.



**Failure
Prediction
Engine**



**Anomaly
Detection
Engine**



**Recommendation
Engine**



**Event / Alert
Filtering**



**Imagery
Change Detection
Engine**



**Label
Correction
Engine**

What to Consider When Doing Machine Learning?



**Not just big data,
wide data**



**Predictions,
not causality**



**Signal vs.
Noise**



**Feature
extraction**



Regularization



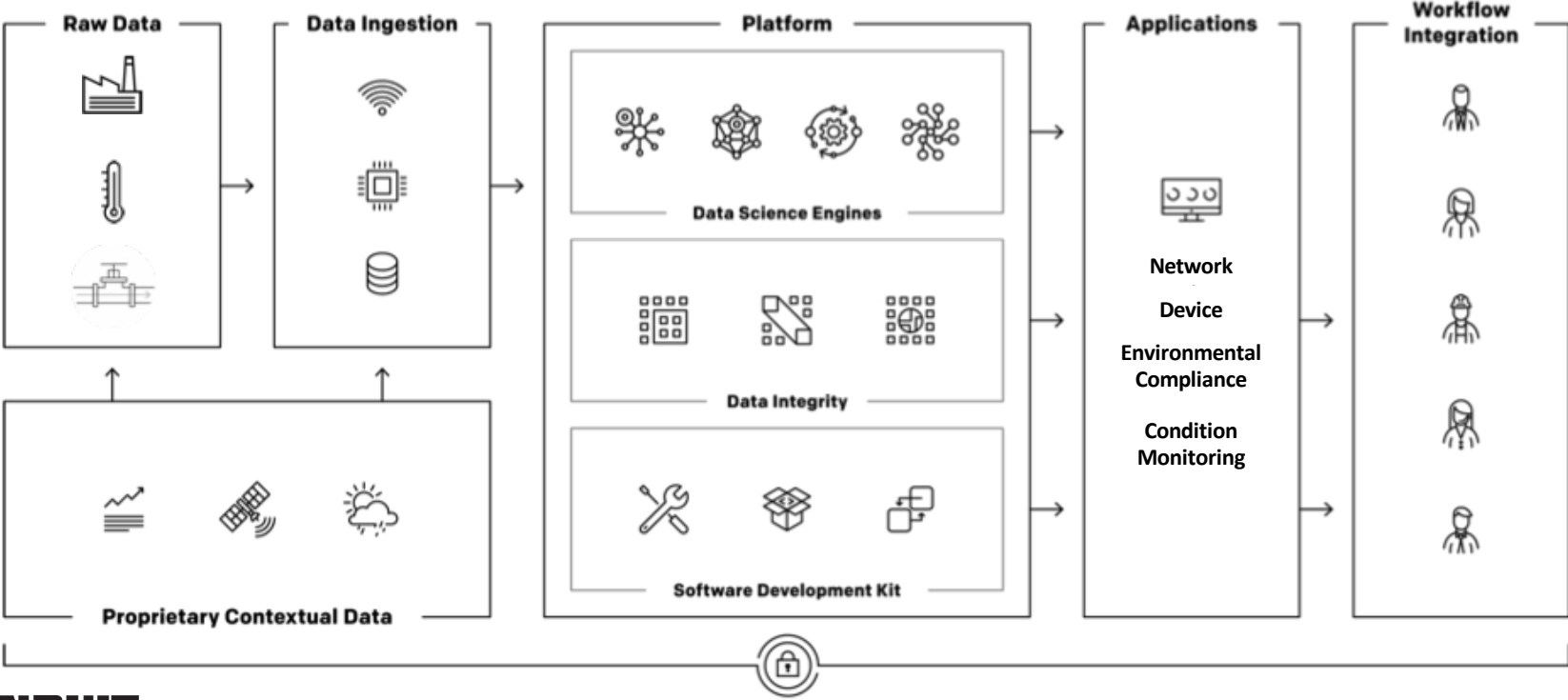
Cross-validation

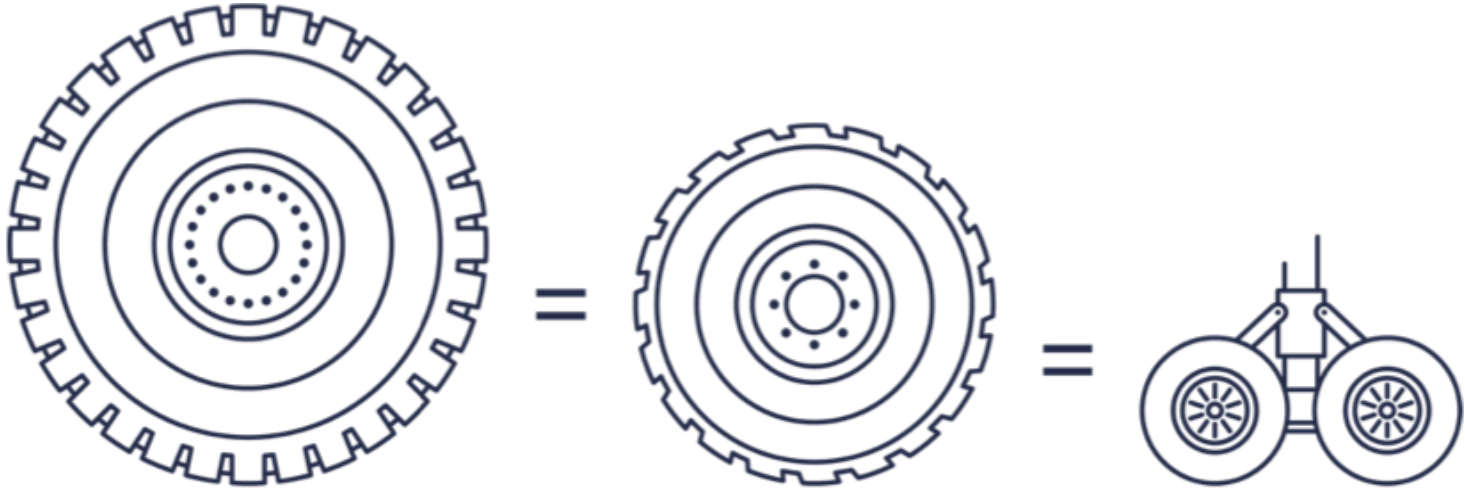


**Velocity, variety
and volume**

Reference: What Every Manager Should Know About Machine Learning

What's needed to process data?... data science at play





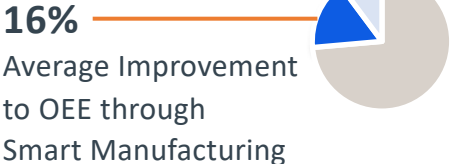
Single codebase identifies commonalities across industries

The Value of Analytics in Manufacturing

\$760_B - \$2_T

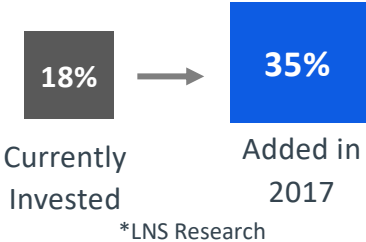
Total Addressable Market

State of the Industry OEE



*IndustryWeek

Manufacturers Invested in IoT



TARGET VERTICAL MARKETS

- Food and Beverage
- Pulp and Paper
- Chemicals and Pharmaceuticals
- Automotive

POTENTIAL PORTFOLIO EXPANSION

- Beyond Manufacturing: Retail
- Smart Building Software: Smart Lights
- Edge Optimized Data Science
- Hardware + Software

MARKET PAIN POINTS

- Sub-optimal OEE
- Complex Regulatory Compliance
- Increased Complexity to manage
- Need for Skilled Labor

Thank You