



# INTELLIGENCE FOR THE CONNECTED WORLD

## 2016 PHM CONFERENCE



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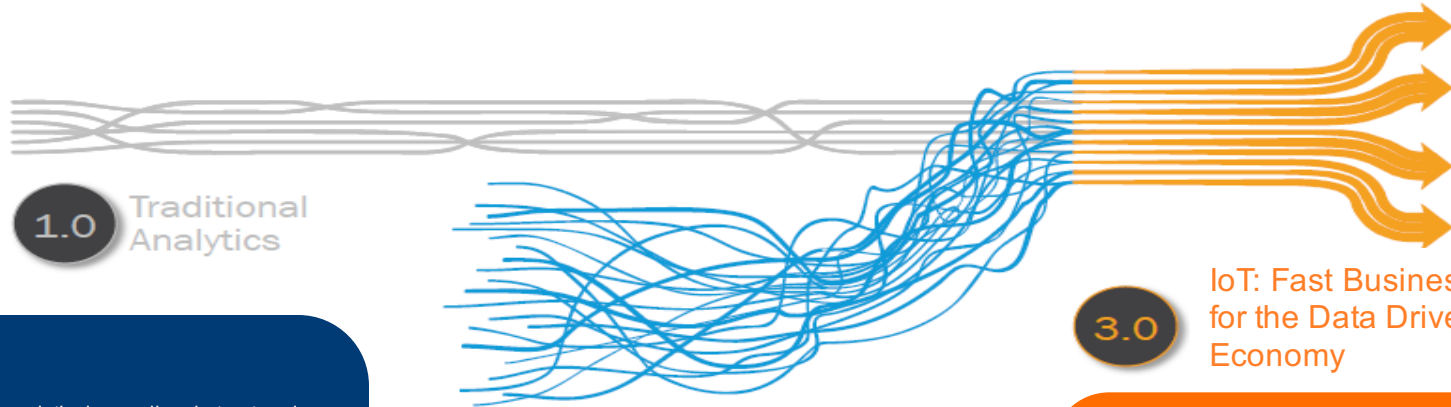
*IoT Global Practice*

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# IOT: THE DATA DRIVEN ECONOMY



## 1.0 Traditional Analytics

- Data sources relatively small and structured, from internal systems
- Majority of analytical activity was descriptive analytics, or reporting
- Creating analytical models was a time-consuming “batch” process
- Few organizations “competed on analytics”—analytics were marginal to strategy
- Decisions were made based on experience and intuition

## 2.0 Big Data

- Complex, large, unstructured data sources
- New analytical and computational capabilities
- “Data Scientists” emerge
- Online firms create data-based products and services

3.0

## IoT: Fast Business Impact for the Data Driven Economy

- Analytics integral to running the business; strategic asset
- Rapid and agile insight delivery
- Analytical tools available at point of decision
- Cultural evolution embeds analytics into decision and operational processes
- Businesses can create data-based products and services

Adapted from IIA 2014

# INSIGHTS AND ACTION DRIVE VALUE



# TRADITIONAL IT POSITION ON ANALYTICS

## Operational Platform



## Analytics



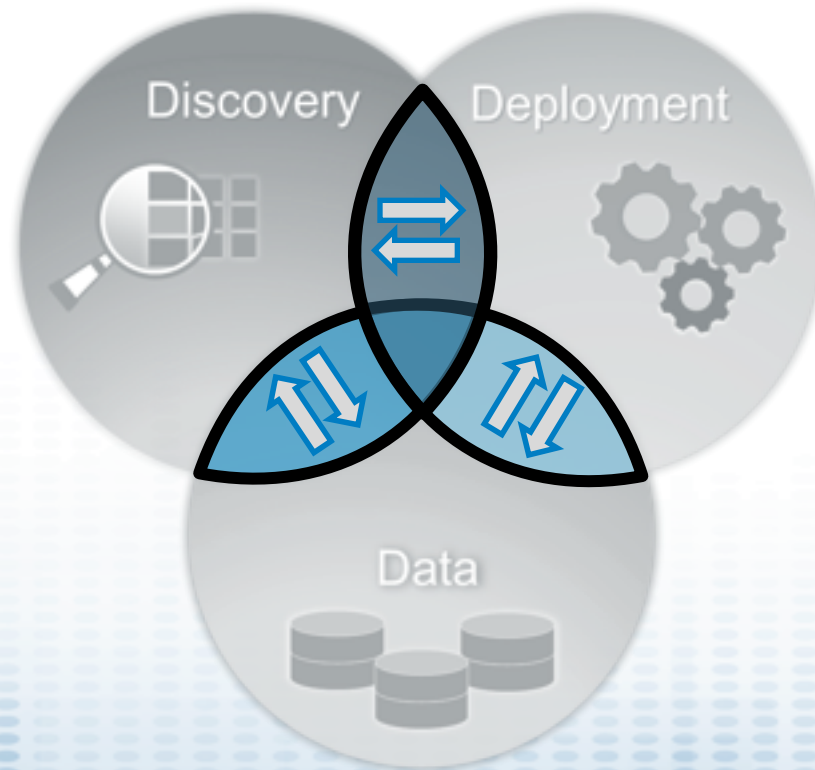
## Productivity Platform



# ANALYTICS PLATFORM

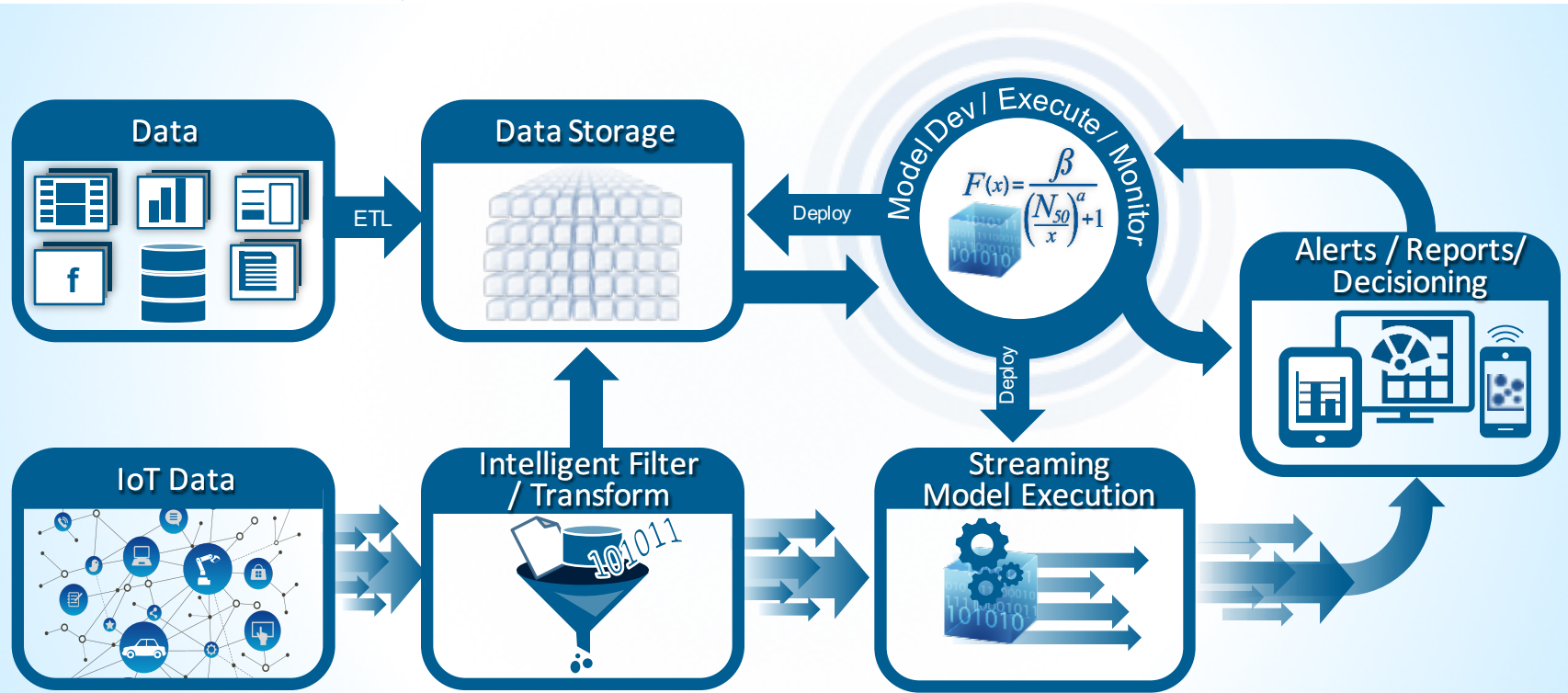


# ANALYTICS PLATFORM – VALUE IN THE OVERLAP



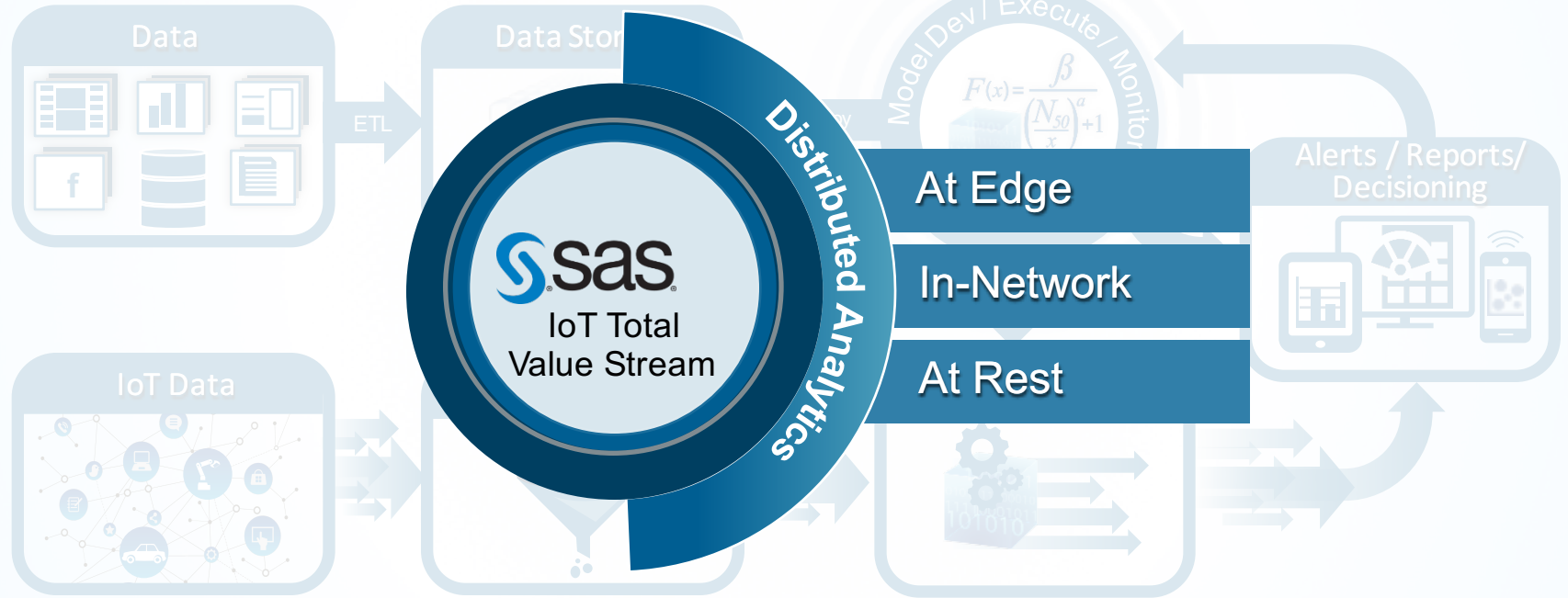
# INTERNET OF THINGS

## IOT ANALYTICS LIFECYCLE SENSE – UNDERSTAND - ACT



# INTERNET OF THINGS

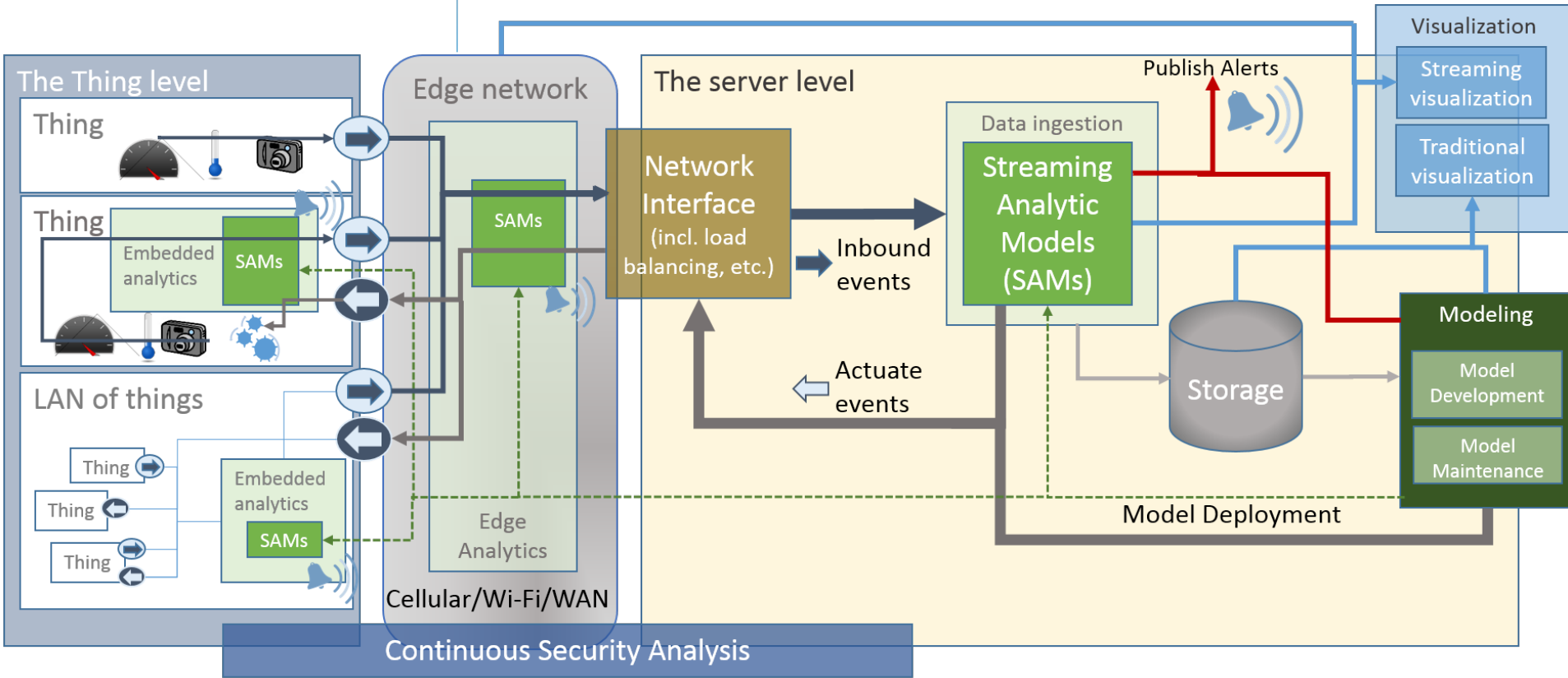
## IOT ANALYTICS LIFECYCLE SENSE – UNDERSTAND - ACT





# INTERNET OF THINGS

## CONCEPTUAL ARCHITECTURE





### Truck Fleet

- Correlate fault data to breakdowns and failures
- Predict breakdowns and component failures
- Perform reliability analysis on major parts



### Turbine Engines

- Model drivers of unscheduled downtime
- Identify optimal maintenance scheduling
- Predict failures



### Wind Turbines

- Identify turbines performing below average
- Model drivers of capital component failures
- Improve planned maintenance



### Gas Treatment

- Identify predictors of failures
- Identify optimal operational parameters
- Optimize amine utilization



### Oil Wells

- Identify Wells performing below expectations
- Model drivers of pumps failures
- Automate early-warning detection
- Identify optimal operational parameters