Solution Guide

mnubo SmartObjects™

Analytics Solution for IoT Manufacturers and Service Providers

Insights for Product Manufacturers

Analytics for Connected Products

Looking at the use and importance of analytics in the web, mobile application and social spaces, it is evident that data-driven decision-making is a crucial factor in determining competitiveness and relevance for today's companies. Most websites, mobile applications and social engines – new and existing – have analytics as an integral part of their product and business strategy. Their primary motivator for adopting analytics is (1) real-time usage/performance feedback to drive better and more-focused development, as well as (2) valuable insights for improvement and optimization of value-added services to spur new monetization avenues. IoT is no different. Connected product manufacturers and service providers must embrace analytics as the cornerstone of their connected product experience and associated service delivery.

Purpose-built for IoT Product Manufacturers and Service Providers

SmartObjects is a Software-as-a-Service Analytics solution purpose-built for IoT Product Manufacturers and Service Providers. It facilitates the exploration and analysis of sensor timeseries and events in order to obtain insightful and actionable information about connected products. SmartObjects equips manufacturers with insights that allow them to improve product performance, increase customer engagement, reduce customer churn and lower costs of operations. SmartObjects helps unlock the hidden value of past data (historical), present data (real-time), and future data (predictive, prescriptive).

Enterprise Ready

SmartObjects offers a fully managed SaaS model that requires no IT resources. It runs on the world's most scalable public clouds, but can also be deployed on a private cloud or on premise. SmartObjectsTM leverages the latest Big Data and Analytics technologies and architectures so you do not have to. These include, for example, ElasticSearch, Cassandra, Hadoop HDFS, Micro Services, Kafka, Scala, Spark, Docker, ZooKeeper, Mesos, Kubernetes, etc. SmartObjectsTM scales horizontally and vertically at will.

Focus on KPIs and ROI

mnubo's SmartObjects is designed to analyze the various aspects of IoT sensor data (i.e. data from, about and around the products). This 360 view on IoT data allows SmartObjects to offer valuable insights throughout the entire connected product development process (i.e. design, field trials, production and beyond) both from an R&D, product management, operations, marketing and C-level perspectives. Here are a few examples of the KPIs covered out-of-the-box by SmartObjects:

Data **ABOUT** the product

Product attributes
eg. firmware, versions, make, etc.
Customers of the Product and their attributes
eg. gender, location, etc

Data **AROUND** the product

Contextual data (derived, enriched, linked)
eg. where is it? (weather, geolocation, etc.)
eg. when was it serviced? (ERP, SKUs, etc)

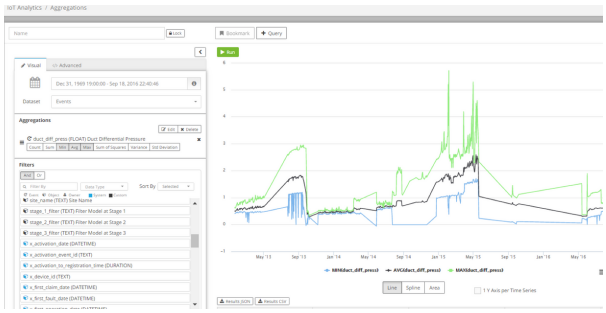
connected product

Data **FROM** the product

Scheduled events and timeseries
eg. temperature, etc.
Unscheduled events and timeseries
eg. failures, triggers, mobile events

Out-of-the-box Analytics

Product Usage Feedback

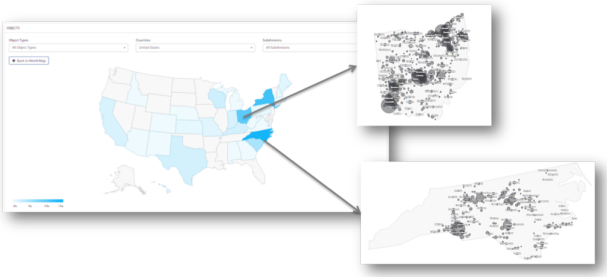


- What, when and where are products being used
- Most and least popular features
- What data are products sending, when and where
- When and where events are triggered by customer (e.g. open door, button pressed, panel off.)
- Active/inactive products (where, when, how many, why, etc.)
- Purchasing and consumption rates (e.g. battery, ink, stocks, etc.)

Product Performance Monitoring

- How are my products performing and behaving
- Products reporting any or specific errors
- Session analytics including time to first fault, uptimes/downtimes
- Distribution of product misuses, failures, errors
- Anomaly detection

Customer Engagement



- New and active customers (where, when, how many, etc.)
- Reengagement and retention rates
- Customer Lifecycle Management (e.g. created, has claimed, operating, churned, etc.)
- Product pairing with mobile app (where, when, how many, etc.)

Operational Efficiency

- Predictive replenishment and replacement (e.g. battery life, supplies)
- Predictive maintenance (e.g. MTBF, Days-to-Failure, etc.)
- Predictive timeseries (engagement, temperature, interactions, etc.)

Software & Integrations

- Secure OAuth2 JSON REST API
- SDKs available in Java, JavaScript, .NET, Python, Squirrel, iOS, Android
- MQTT enabled
- Data encryption at REST

Partner Ecosystem

- Cloud platform neutral (e.g. AWS, Softlayer, Azure, Cloud.ca, Google I/O etc.)
- Native integrations with Arrayent Connect IoT , AT&T M2X/Flow, Ayla Networks, Electric Imp, Gemalto SensorLogic, IBM Node-RED, Kepware, OSIsoft, REEKOH, Samsung ARTIK, Sierra Monitor Corp., etc.