

# Real-Time Analytics For Manufacturing

The manufacturing industry has witnessed a massive transformation from mechanized engine powered production phase to cutting edge digitized production environment. Revolution in the digital sector has paved way to garner innovative ways to optimize and automate production. The 4<sup>th</sup> industrial revolution along with the wave of digitization has resulted in induction of embedded system technology in manufacturing environment. Real time data transferred from sensors embedded in machines, components or stages of work processes needs to be constantly analyzed and processed to gain insights and adjust the current processes accordingly.

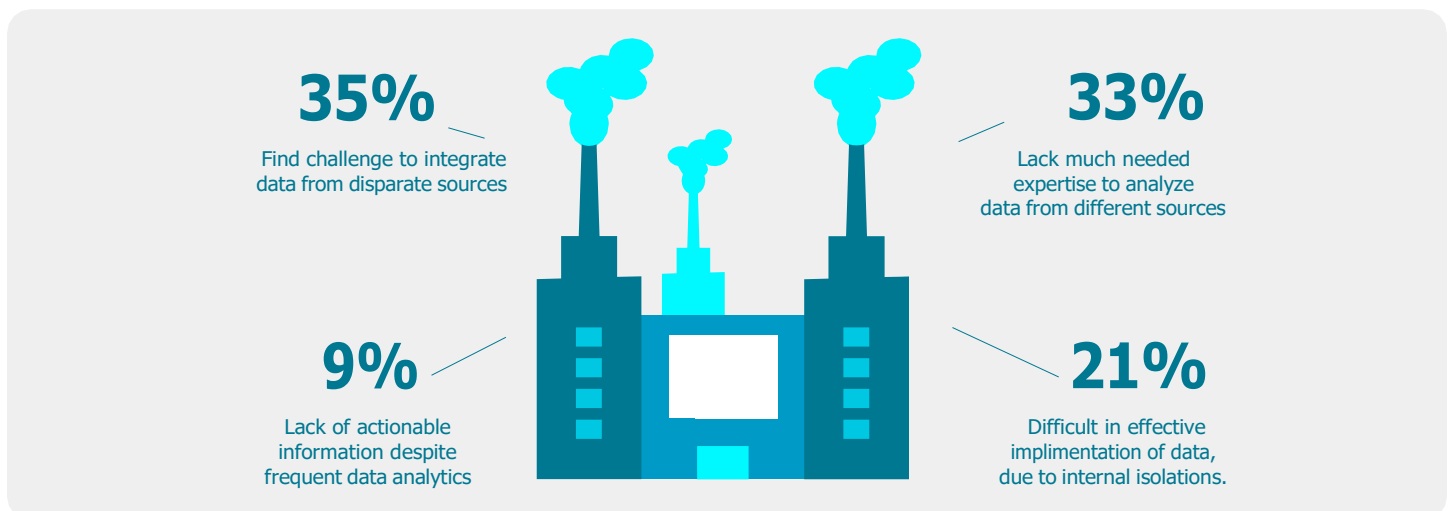
However, apart from sensors, data is also available from various sources like product or machine data, process quality data, manual operation records, etc. Extracting valuable insights from this vast amount of data is more challenging compared to its generation and storing.

Conventional IT systems lack the ability to leverage data and extract insights, and thus the data just sits wasted on isolated systems. Advanced data analytics is need of the hour today to diagnose and correct process flaws.

## Data Analytics Scenario in Manufacturing Sector

As per a recent report by Wipro, about 86 percent of manufacturers report increase in gathering of data and about 90% companies claim to have mature data analysis capabilities for manufacturing. This poses the question of effective usage of these huge volumes of data to derive insights. However, only 22% of companies have predictive analytical solutions to increase production.

Illustration below summarizes different problems faced in managing manufacturing data by corresponding percentage of users.



# How BIRD Supports Manufacturing Analytics

BIRD provides the much-needed full stack data management and augmented business intelligence platform to extract meaningful insights not only from tons of batch data, but also IOT data, and make strategic and astute business decisions accordingly. Get real time unparalleled insights into your manufacturing performance using our data analytics platform.

## Improve Effectiveness

- Garner data from direct sources like embedded sensors or indirect sources like operators.
- Track equipment failure and shortage to measure direct cause and effect of manufacturing activities.
- Track and improve performance and quality by detecting and analyzing slow cycles, idle times, process defects, etc.

## Preventive Maintenance

- Use real time data and advanced machine learning models to identify patterns indicating potential failures.
- Proactively reduce non-production time and prevent loss to down-time.
- Track usage data patterns to alert consumers on replacement times.

## Optimize Supply Chain Management

- Use advanced statistical and machine learning models to improve forecast accuracy and inventory planning.
- Monitor supplier performance in terms of delivery, service and price, and devise strategies to improve supply quality.
- Effectively analyze and plan inventory turns, handle out-of-stock situations, and other resources.

## Warranty Cost Reduction

- Detect increase in failure rates or claim rates for assets or dealers and raise subsequent alerts.
- Track frauds or possible outliers on claim submissions.
- Automate claim processing, thus reducing cost and time on manual resources.
- Analyze customer feedback and complaints on services and products and address them accordingly.

## Key Benefits with BIRD



### Eliminate Data Silos

Use our connectors to integrate your data at one place.



### Self-Service

Avail real time analytics with advanced visualizations.



### Modern ELT

Use high performance and extensive data preparation features.



### Predictive Insights

Use multiple ML models for forecasting, prediction, and text analytics.



### Universal Data Model

Create single data model with multiple fact tables.



### Big Data Architecture

Event driven architecture to ingest and process real time data.

## Augmented Analytics through BIRD

While artificial intelligence can be considered the hot burning topic in field of data analytics, augmented analytics is the next thriving technology in AI's evolution. Utilize BIRD's augmented analytics feature to carry out the following functionalities:

- Understand factors effecting key performance indicators and comprehend subsequent behavior using simple language.
- Improve asset repairing through natural language generation feature with semantic approach.
- Visualize possible defects in process or products by using imaging or video technologies.
- Get machine efficiency data for various factors like weather, product specifications, geographical location, etc.

BIRD comes along with different models like linear regression, clustering, classification, forecasting, random forest, text analytics, density based clustering and logistic regression.

REACTIVE TO PROACTIVE

POST-MORTEM TO  
PRE-EMPTIVE

STATIC TO DYNAMIC

## Get into Action from Insights

Leverage BIRD's automated insights to take relevant business actions by identifying growth opportunities and prevailing loopholes. BIRD uses artificial intelligence and machine learning techniques to transfer raw data into recommended actions. It delivers personalized in-context information and helps save time from analysis to action.

The powerful and collaborative on-the go storyboards ensure that the insights are displayed seamlessly, regardless of user location, and more importantly, on time to take key business decisions.

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