Manufacturing Analytics 101:

A Guide for Data-Driven Businesses

Everyone wants to make data-driven decisions to improve their manufacturing business.

Most companies have the data they need to do so...

... but few have a method of turning disparate data sources into crystal-clear insights.

That's where manufacturing analytics comes in.

A manufacturing analytics platform can give you a 360-degree view of your manufacturing process, ingesting data from dozens of sources to identify faults and highlight ways to improve.

So, put your spreadsheets to one side and learn how analytics software can help your manufacturing business identify hidden issues, scout out unprofitable products and shine a light on your business's health.

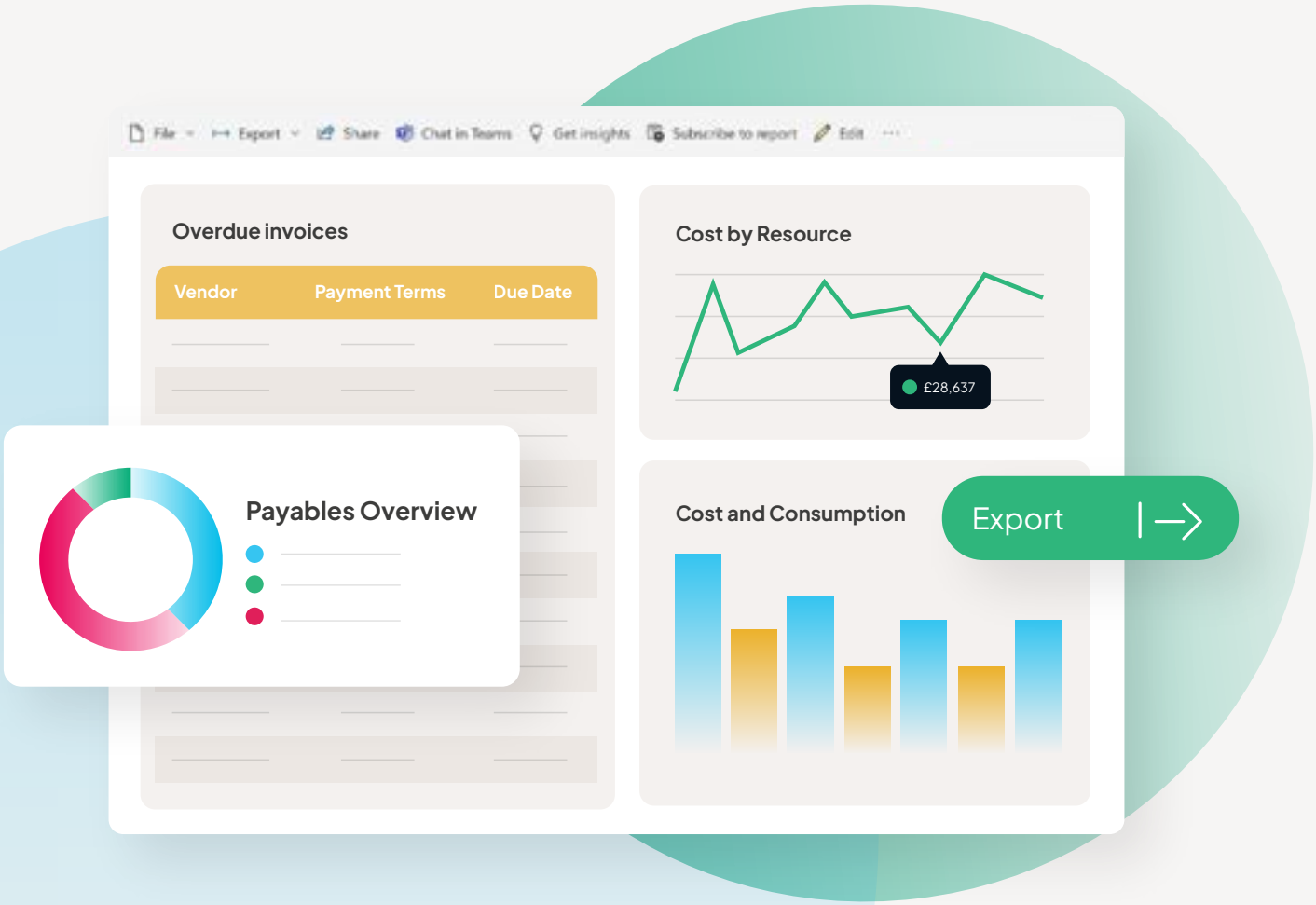
What is manufacturing analytics?

Manufacturing analytics is a purpose built software solution that collects and analyses your business' data.

Most businesses already have all the data they need to improve productivity or decrease defects courtesy of ERP software, IoT devices and third-party applications. A manufacturing analytics solution simply centralises, transforms and visualises that data.

These disparate data sources are transformed into dashboards, graphs and reports, generating otherwise undetectable insights that pinpoint problems and identify ways to improve the production process.

An analytics platform also makes it easy to track the health of your business, along with key manufacturing KPIs, such as Overall Equipment Effectiveness, First Pass Yield, and Downtime.



Benefits of data analytics in manufacturing

There are plenty of reasons to integrate a manufacturing analytics solution into your tech stack, from optimising production to reducing downtime and keeping an eye on the metrics that matter.

Optimise production processes

Who doesn't want a more efficient production process? It's hard to know how to improve your current workflows unless you have a way to analyse manufacturing data in real time.

That's exactly what manufacturing analytics does. By tracking KPIs like throughput and yield, you can understand how production levels change over time. Integrating machine learning algorithms can suggest ways to make your process more efficient, whether that's tweaking a machine's setup or using different materials.

Reduce unscheduled downtime

Is unscheduled downtime costing your business time and money in lost production? Manufacturing analytics can significantly reduce downtime by predicting when machines will fail.

Predictive maintenance is one of the most popular use cases of manufacturing analytics. By applying machine learning algorithms to standardised real-time data sets, you can predict when a machine needs maintenance or has a part that needs to be replaced.

This can significantly reduce unscheduled downtime, allowing your plant to produce at full capacity for longer and reducing the likelihood of defects.

Measure and manage KPIs

Manufacturing analytics makes it easy for anyone in your business — from the managing director to the CFO to the floor supervisor — to track key performance indicators and other metrics.

By combining and mastering disparate data sources into a unified dashboard, employees can monitor the health of your business in one place.

Reduce costs

Raw materials may be getting more expensive, but that doesn't mean your costs have to increase in step. You can use insights from a manufacturing analytics solution to reduce costs across your business. .

Manufacturing analytics help CFOs and finance teams gain a better understanding of the costs of production, including labour, overheads and materials. Are you ordering too many materials? Can production processes be altered to use fewer materials or produce more goods with the same amount? An analytics solution can provide the answers.

Improve product quality

Ultimately, manufacturing analytics can improve product quality and yield. By analysing your production process, an analytics platform can determine why defects are occurring, whether raw materials cause the most problems and if a machine needs recalibrating.

Real-time monitoring can help you spot issues with your production process as soon as they occur, allowing team members to jump in and make adjustments before product quality deteriorates. You can even look at historical data to identify where problems have occurred in the past, what caused them, and how to prevent product quality issues in the future.

What to look for when choosing manufacturing analytics software

With so many solutions on the market, how do you choose the best manufacturing analytics platform for your business?

We recommend considering the following important factors:

Consolidation

Can the platform centralise data from every single one of your sources?

Real-time

Does the platform ingest and consolidate data in real time?

Reporting

How many of your reporting requirements are met immediately? Do you have the ability to build custom reports?

Accessibility

Does the platform give everyone in your business, from the CEO to the CFO to the floor manager, the insights they need?

Continuous improvement

Will the provider work with you to continuously tweak the solution to your business's needs?

Find a platform with all of these features, and you'll find it easy to generate insights and take action.

4 best practices to improve your insights

There's a lot more to succeeding with manufacturing analytics than choosing a platform or hiring consultants to build a custom solution.

Follow these best practices to get the most from your chosen manufacturing analytics solution.

Connect every data source

Manufacturing analytics solutions work best when they connect with all your data sources. The more data sets you can integrate, the better your insights will be.

Ideally, these sources will connect automatically to your analytics solution via native or custom API integrations. The 5Y platform, for example, connects natively with Microsoft Dynamics 365 products, giving you 80% of your reporting requirements out of the box.

Create a single version of truth

Your analytics solution should act as a central repository and a single source of truth. To improve your insights, apply consistent formats, values and naming conventions to your data and clearly define hierarchies and relationships between data sources.

Everything should be stored in a robust cloud-based data vault that's accessible to everyone while improving data governance.

Get started quickly

When choosing a manufacturing analytics solution, speed should be the order of the day. The faster you can start transforming your data into insights, the quicker you'll be able to improve your processes.

That's why we've designed the 5Y platform to be as quick and easy to implement as possible. Our Microsoft-aligned architecture provides 80% of your reporting requirements out of the box and lets you start generating insights in as little as 30 days.

Generate insights in as little as

30 days

Embrace AI

A manufacturing analytics platform is the best way to get your data AI-ready. By transforming disparate sources into a centralised and consistent format, you'll be ready to unlock a range of transformational insights. This can include insights like:

- Identifying machines that need maintenance before they break down
- Reducing operational costs by identifying quality issues or production line inefficiencies
- Highlighting processes and materials that routinely result in defects

Implement manufacturing analytics with 5Y

5Y makes it easy to get started with manufacturing analytics. Our Unified Data Platform collects, consolidates and masters hundreds of data sources in one place and provides the vast majority of your reporting requirements out of the box.

But unlike off-the-shelf software solutions, our data experts are on hand to fine-tune our solution to your unique needs. This includes creating new reports and building custom integration solutions for your software.

Book a demo

About 5Y Technology

Our platform, solutions and company are dedicated to disrupting the traditional technical landscape and powering change through data. We aim to be the catalyst for a world where data-driven decision-making and operations are the norm, enabling organisations to unlock their full potential and achieve sustainable success.

Learn more about us by visiting **5ytechnology.com**

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