




# Optimising Manufacturing Operations with Microsoft ERP Solutions

**Driving efficiency  
and improving visibility  
With Business Central**





# Using Microsoft ERP Solutions in Manufacturing



When it comes to improving profitability in manufacturing, efficiency is essential.

Microsoft Business Central offers a comprehensive, cloud-based enterprise resource planning (ERP) system designed to meet the unique demands of modern manufacturing operations.

Cloud-based ERP systems are designed to meet the intricate demands of modern manufacturing, seamlessly integrating core business processes such as finance, sales, service, and operations. And Microsoft's solution, Business Central, can provide the real-time insights essential for strategic decision-making.

From managing complex supply chains and production schedules to maintaining stringent quality controls and meeting fluctuating customer demands, Business Central equips manufacturers with the agility and precision needed to stay ahead of the competition.



# Why Adopt Business Central?

Adopting Business Central is a strategic move towards optimising your manufacturing operations. Its core appeal lies in the significant benefits it delivers in cost savings and data accuracy.



## Cost-Savings in Production

An advantage of Business Central is its ability to reduce production costs. By harmonising production processes, Business Central optimises resource utilisation and streamlines operations. Advanced planning and scheduling features ensure materials and resources are allocated precisely where and when they're needed.

Intelligent analytics enable predictive maintenance, reducing unexpected downtimes and extending the lifespan of machinery and equipment. This proactive approach to maintenance prevents costly interruptions and maximises productivity.

Business Central's role in enhancing operational efficiency is complemented by its inventory management capabilities. By maintaining optimal inventory levels and reducing excess stock, companies can avoid unnecessary storage costs and minimise the risk of obsolescence.

Furthermore, Business Central's fully integrated approach ensures procurement aligns closely with production needs. This alignment allows users to leverage economies of scale and negotiate better terms with suppliers, thereby reducing material costs further.





## Accuracy in Data

The value of accurate, real-time data in today's manufacturing environment can't be overstated. Business Central excels in this area by providing a single source of truth for all organisational data, ensuring consistency and reliability across departments.

This accuracy is crucial for informed decision-making, allowing managers to make strategic decisions based on up-to-date and comprehensive information.

The impact of this data accuracy extends to operational efficiency. With real-time visibility into production processes, inventory levels, and customer orders, organisations can respond more swiftly and effectively to changes in demand, supply chain disruptions, or production bottlenecks. This agility not only enhances customer satisfaction by improving order accuracy and reducing lead times, but also supports lean manufacturing initiatives by identifying and eliminating inefficiencies.

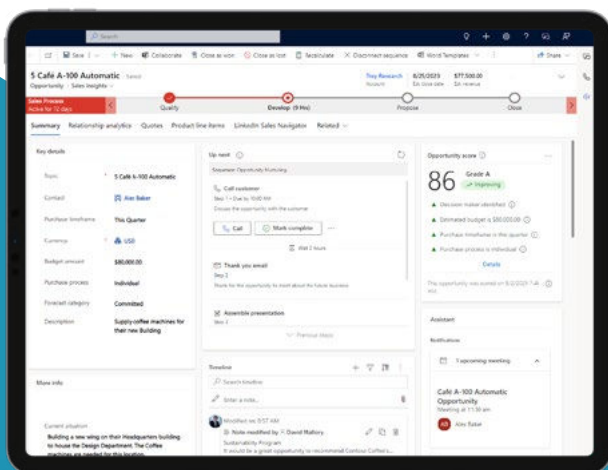
Accurate data also facilitates better financial management. By providing precise and timely financial reporting, Business Central enables companies to monitor their financial health in real-time, make cost-effective decisions, and forecast with greater accuracy.

## Managing Outsourcing to Reduce Costs

In the manufacturing industry, outsourcing has become a strategic tool for organisations aiming to reduce costs without sacrificing quality.

Business Central offers a centralised platform for detailed and precise sub-contractor management, which allows for enhanced decision-making. Businesses can gain real-time visibility into outsourced operations, ensuring seamless integration with in-house processes.

Automated procurement and payment features reduce administrative tasks and, in turn, human error, maintaining efficient transactions and fostering positive vendor relationships.





# Adopting a Material Requirements Planning (MRP) System

Implementing a Material Requirements Planning (MRP) system optimises inventory levels and synchronises production schedules.

Business Central's advanced MRP features help refine procurement strategies and improve load levelling. This ensures resources are utilised efficiently, production meets demand needs precisely, and excess inventory is minimised.

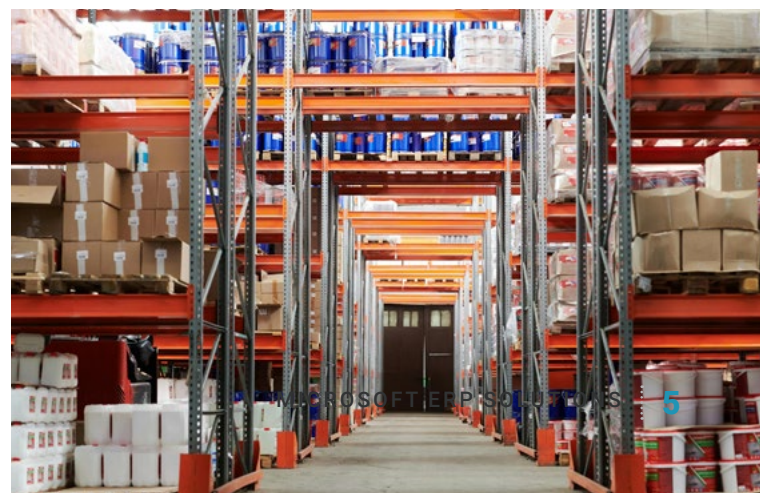
## Streamlining Procurement Strategies

The MRP capabilities within Business Central enable organisations to refine their procurement processes by providing precise forecasts of the materials and components needed for production. By analysing current inventory, production requirements, and lead times, the system helps avoid shortages and overstock situations, significantly reducing holding costs.

This precision supports just-in-time inventory practices, minimising the amount of capital tied-up in unused inventory and enhancing available cash flow. Additionally, the system's advanced analytics offer insights into supplier performance and delivery schedules, allowing companies to negotiate better terms and optimise order quantities.

Business Central's MRP functionality can also facilitate seamless communication across departments, ensuring that procurement aligns with production and sales. This integrated approach not only improves efficiency but also enhances overall supply chain visibility, enabling proactive adjustments to meet market demands and reduce operational risks.

By leveraging Business Central's comprehensive MRP capabilities, organisations can achieve a more agile, responsive, and cost-effective procurement strategy, ultimately driving greater profitability and competitiveness in the market.





# Optimising Load Levelling with Master Production Scheduling

Load levelling is crucial for balancing production workflows and maximising resource capacity. Business Central's Master Production Scheduling capabilities assist in evenly distributing production loads over available machines and work centre capacities, preventing bottlenecks and underutilisation. This systematic approach ensures a balanced workload, optimising the use of all available resources.

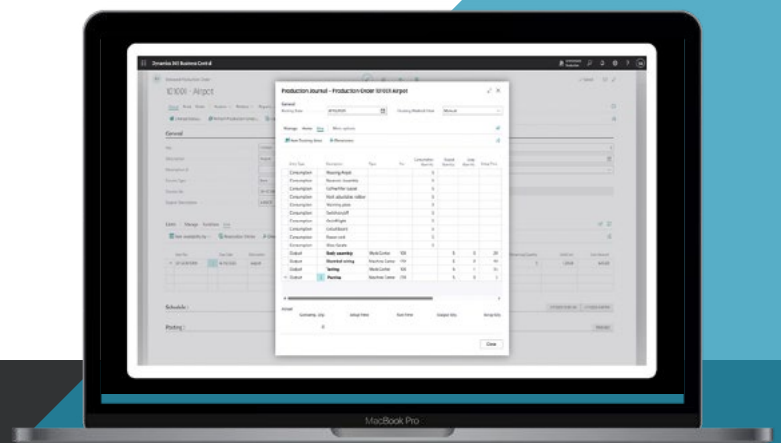
Not only does this method improve operational efficiency, but it also maximises the lifecycle of machinery by preventing overuse and excessive wear and tear. By distributing the production load more evenly, organisations can avoid the costly downtime associated with machine breakdowns and maintenance, ensuring continuous production flow.

## Controlling Labour

Additionally, by smoothing out production capacity, organisations can better manage labour costs. Effective load levelling helps in scheduling shifts more efficiently, reducing overtime expenses, and improving overall labour productivity. This leads to a more predictable and stable production environment, where workforce resources are used optimally.

Furthermore, with improved load levelling, organisations can enhance their ability to meet customer timelines and specifications. By avoiding production delays and ensuring a consistent workflow, companies can improve their on-time delivery rates, boosting customer satisfaction and reinforcing their reputation for reliability.

Business Central's Master Production Scheduling therefore not only optimises resource utilisation but also contributes to cost savings, improved machinery longevity, and enhanced customer satisfaction. This holistic approach to load levelling enables manufacturers to increase operational efficiency.





# Business Central as a Process Manufacturing Solution

Microsoft Business Central offers tailored features that enhance production efficiency and ensure compliance with industry standards:

## BOM Management

Accurate Bills of Materials (BOMs) are crucial for manufacturing efficiency, cost management, and product quality. Microsoft Business Central holds BOMs that are precise and version-controlled.

Business Central's sophisticated BOM management capability allows manufacturers to define and manage detailed BOM for each product, including quantities, raw materials, and routing instructions.

Any changes to BOMs are version-controlled and updated in real-time across the system, ensuring that all production teams have the latest information, minimising errors and waste.

Version control also allows users to reuse BOMs without having to recreate them whenever the needs arise.

## Key Features:

### Version Control and Change Log Control:

This feature allows manufacturers to track every change in a BOM - crucial for maintaining compliance and quality control.

### Integration with Design and Production Systems:

Seamless integration with CAD and production planning tools ensures that BOMs align perfectly with design specifications and manufacturing schedules (using an API).

**Real-time Visibility:** One of the standout features of Business Central is its real-time visibility of data. Manufacturers can track inventory levels, monitor production progress, and make data-driven decisions instantly. This visibility is invaluable in ensuring on-time deliveries.



# Dealing with the Planning Horizon

Business Central provides robust tools for long-term planning and forecasting, essential for aligning production with market demand.



## Sales and Inventory Forecast: Long-Term Planning

The Sales and Inventory Forecast extension in Microsoft Dynamics 365 Business Central harnesses the power of Azure AI to predict future sales based on your sales history, helping you avoid inventory shortages.

It provides a visual representation of estimated sales for each item, enabling proactive stock management. This stateless, on-demand

predictive web service doesn't store data, ensuring your information's security.

With the ability to customise the forecasting period and granularity, it's a versatile tool that anticipates stockouts and associated losses, empowering you to manage your inventory and sales effectively.

### Using the forecasts:

The extension uses Azure AI to predict future sales based on your sales history to help you avoid inventory shortage. For example, when you choose an item on the Items page, the chart in the Item Forecast pane shows the estimated sales of this item in the coming period. This way you can see if you're likely to run out of stock of the item soon.

### Integrated Planning Systems:

Business Central's integrated planning systems facilitate collaboration across departments. Sales forecasts, production schedules, and inventory levels are all interconnected, providing a cohesive view that enhances decision-making and operational efficiency.

### Demand Forecast Planning:

Business Central enables Demand Forecasting to prepare for various market conditions. Organisations can model different outcomes based on potential market changes, such as economic shifts or changes in consumer behaviour, allowing them to adjust strategies proactively rather than reactively.



# Lot and Serial Traceability in Business Central

Lot and Serial traceability is a critical feature in Business Central, designed to enhance safety, facilitate recalls, monitor expiration dates of products and improve quality management across manufacturing processes. Features include:

## Recall Efficiency

In the event of a product recall, Business Central's lot and serial traceability enables companies to swiftly identify affected products and trace them back to their source or forward to their current location. This efficiency minimises the impact of recalls on business operations by ensuring that only the correct batches are targeted, thus reducing errors and associated costs.

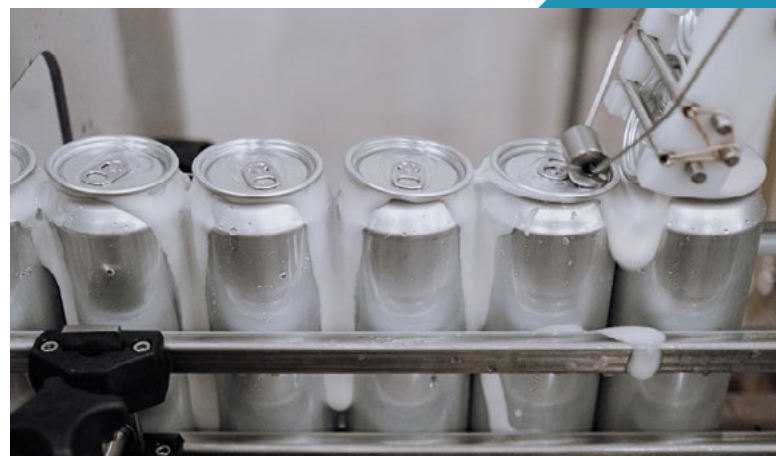
## Expiration Date Monitoring

Business Central also facilitates the monitoring of product expiration dates, ensuring that products are used or sold within their viable periods. This feature helps prevent the distribution of expired goods, enhancing consumer safety and compliance with regulatory standards.

## Quality Management

Enhanced traceability supports overall quality management by providing detailed records of each product's journey through the supply chain. This data can be invaluable for identifying trends, pinpointing issues, and implementing corrective actions to maintain high standards of product quality.

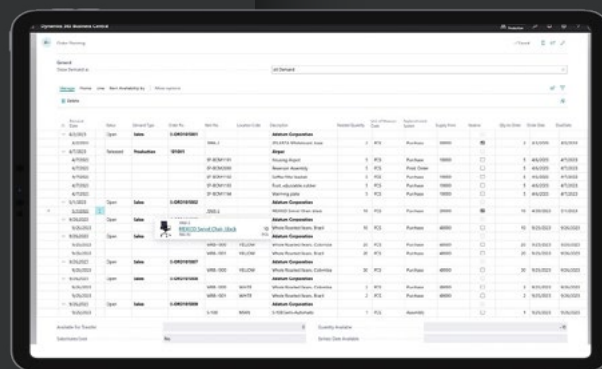
By leveraging these traceability features, manufacturers can significantly improve their operational safety, efficiency, and product quality, while also ensuring compliance with industry regulations.





# Production Monitoring and Analytics

Business Central enhances operational efficiency by enabling real-time monitoring of production processes. This system allows manufacturers to have immediate visibility into their production activities, helping to quickly identify and address inefficiencies or disruptions.



Order No.	Item	Quantity	Unit Cost	Value	Order Date	Due Date	Status	Location	Created By
4710001	Assembly	1	1000	1000	2023-01-01	2023-01-05	Released	Warehouse	System
4710002	Assembly	1	1000	1000	2023-01-01	2023-01-05	Released	Warehouse	System
4710003	Assembly	1	1000	1000	2023-01-01	2023-01-05	Released	Warehouse	System
4710004	Assembly	1	1000	1000	2023-01-01	2023-01-05	Released	Warehouse	System
4710005	Assembly	1	1000	1000	2023-01-01	2023-01-05	Released	Warehouse	System
4710006	Assembly	1	1000	1000	2023-01-01	2023-01-05	Released	Warehouse	System
4710007	Assembly	1	1000	1000	2023-01-01	2023-01-05	Released	Warehouse	System
4710008	Assembly	1	1000	1000	2023-01-01	2023-01-05	Released	Warehouse	System
4710009	Assembly	1	1000	1000	2023-01-01	2023-01-05	Released	Warehouse	System
4710010	Assembly	1	1000	1000	2023-01-01	2023-01-05	Released	Warehouse	System

## Stock and Inventory Control

Business Central enables businesses to maintain optimal inventory levels through automated replenishment rules, which predict and respond to stock needs based on the assigned rules for each item, sales forecasts, outstanding purchase orders, stock on hand, outstanding sales orders and historical data. This system ensures that organisations can balance having enough stock to meet demand without overstocking, which ties up capital and storage space.

Inventory optimisation in Business Central also involves refined inventory tracking that allows businesses to know exactly where items are in real-time, whether in a warehouse or in transit. This capability supports efficient management of stock levels, reduces losses from misplaced or obsolete inventory, and improves overall supply chain responsiveness.





# Security and Regulation

Any modern ERP system should also support an organisation in its security and regulatory requirements. Business Central is geared to do this in the following ways:



## Compliance Tracking

Business Central supports compliance tracking by offering extensive reporting capabilities, comprehensive audit trails, and robust data security features.

The system provides extensive reporting features, comprehensive audit trails, and robust data security measures, ensuring that all compliance needs are met efficiently. Generating compliance reports is straightforward and precise, and the system maintains detailed transaction logs, offering a transparent view of all activities. These audit trails are crucial for identifying and addressing any compliance issues quickly.

Data privacy is also of great importance. As such, Business Central employs encryption and role-based security to safeguard sensitive information, meaning only authorised personnel can access specific data, significantly reducing the risk of data breaches. Automated workflows are a game-changer in maintaining compliance, helping to follow specific procedures consistently, reducing human error, and ensuring that all regulatory steps are adhered to meticulously.

For industries requiring product traceability, the system provides tools to track the movement and history of products. Additionally, it helps manage employee certifications and training to meet compliance standards, ensuring the workforce adheres to necessary regulations.

Regular updates from Microsoft also assist with evolving regulation. These updates ensure that Business Central remains aligned with the latest compliance requirements, allowing businesses to stay compliant without the need for significant manual intervention. By leveraging Business Central's comprehensive compliance tracking features, businesses can ensure regulatory adherence, enhance data security, and streamline their compliance processes effortlessly.



# Finance and Tax Requirements

When it comes to financial regulation, Business Central can help organisations to simplify tax compliance, delivering accurate tax calculations and statutory reporting.

Document management features also allow for the centralised storage and retrieval of compliance documents, facilitating easy access during audits.

Business Central's HMRC reporting function is particularly valuable for UK businesses. It supports accurate and timely submission of VAT returns and other necessary tax reports directly to HMRC.

With real-time data integration, businesses can ensure that their financial records are always up-to-date and compliant with HMRC requirements. Automated calculations and built-in checks minimise errors, reducing the risk of penalties.

Furthermore, Business Central's seamless integration with HMRC's Making Tax Digital initiative simplifies the digital submission process, ensuring businesses meet regulatory obligations efficiently and with minimal manual intervention.





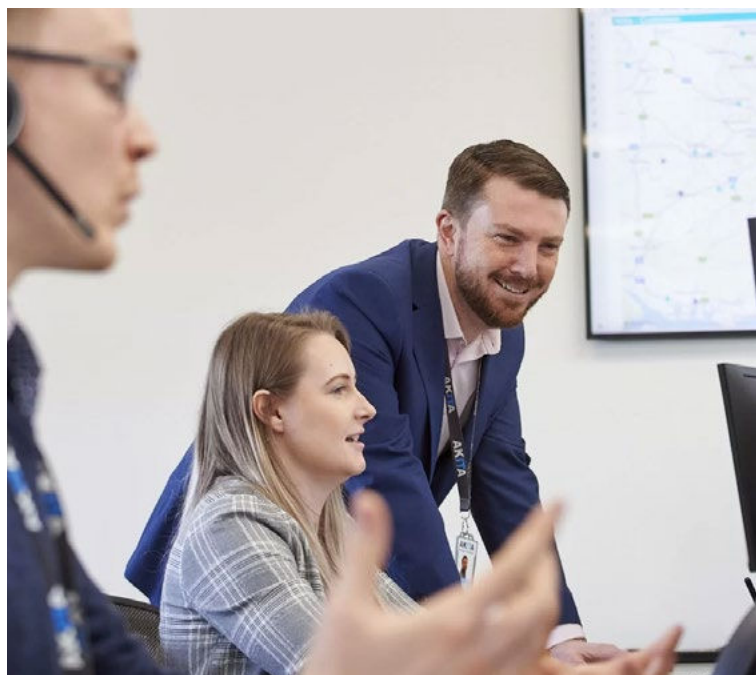
# Integrating Business Central Across Operations

Adding Business Central's ERP, MRP, and finance management capabilities is only the start of a journey. The application supports seamless integration with external software tools.

Notably, there's robust connectivity with CRM systems (Microsoft or other), analytics platforms, and industry-specific tools, facilitating the smooth flow of data across business functions and eliminating silos.

Additionally, Business Central can integrate with e-commerce platforms, ensuring a unified approach to inventory management and sales tracking. It also connects with project management tools, allowing for real-time monitoring and resource allocation across projects. Furthermore, its compatibility with supply chain management systems enhances visibility and efficiency in procurement and logistics processes.

Integrating IoT devices enables real-time data collection and analysis, optimising operational efficiency. These integrations empower businesses to achieve a cohesive and streamlined operational environment, driving growth and efficiency.



## Discover More

Akita is a leading developer of manufacturing ERP solutions.

To explore more of the manufacturing, finance and operations functionality of Business Central on a tailored demo.

**For more email: [info@akitais.com](mailto:info@akitais.com)**

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