

MRP

White Paper

COMPARISON

300code, SAP Business One, Netsuite, Microsoft Dynamics



2023

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Introduction

Introducing MRP offers available today

With multiple software options for each step of the manufacturing process - from production planning to quality control and inventory tracking - it can be challenging to identify a solution that meets every manufacturer's needs. While many ERP systems cover several of these functional areas, only a few genuinely offer everything out of the box.

Additionally, selecting the right system has implications beyond meeting the needs of the manufacturers. It will significantly impact its future growth and profitability. To shape a successful company, the right tool will require a proper implementation, and the stakes are high as the resources needed for implementation can be substantial, requiring time and input from employees across your organization.

The business software industry has recently shifted towards a software-as-a-service (SaaS) model. This trend provides businesses with increased flexibility and eliminates the need for a local server or other network hardware. Smaller deployments can see significant cost reductions by avoiding the need for local infrastructure.

In this white paper, we've carefully selected four popular solutions, including 300code, SAP, Netsuite, and Microsoft Dynamics. For all of these, we've created comparison tables highlighting the hosting proposition, pricing, and availability of key features in several areas, such as inventory management, quality control, maintenance, and production management, to name a few.

***But first, let's discover
the different solutions*** 



MRP Software

300code

300code brings the best of the major ERP systems into one hosted platform, built by ERP specialists who spent years implementing them. With more than 40 business apps fully integrated on one database, it covers every sector and company size: start with one app and add the rest as you grow. From our headquarters in Tambov, Russia, and our office in Damietta, Egypt, we serve customers across Egypt, the Gulf and Russia, competing directly with suites like NetSuite, Shopify, PrestaShop and Microsoft.



Amazing employees deserve amazing software



10 million+

support included



1

hosted platform



2

backup continents



0

hidden fees

Netsuite

NetSuite was founded in 1998 as NetLedger, a cloud-hosted accounting software. It has since grown into a full spectrum suite of business software applications. True to its name, NetSuite is available exclusively through the cloud.

NetSuite employs a modular structure, with each deployment comprised of

4

SAP Business One

SAP, born from the ashes of the Xerox business computing division, is the venerable purveyor of enterprise software, primarily selling built-to-suit solutions for large enterprises. In 2002, SAP made its first foray into the SME market segment by purchasing what is now SAP Business One (SBO). SBO is the lowest-cost ERP offering from SAP, designed to be deployed quickly and with minimal customization. Business One is designed to cover every business software need of small to mid-sized businesses, from CRM to Manufacturing, deployed in the cloud or on premises. SBO is best suited to light manufacturing as it lacks advanced planning and shop floor control features when deployed out of the box.



The best businesses run SAP



200 million

monthly users



300 +

apps



**3 to 10
months**

to be implemented



5,000 +
employees

a selection of its core modules or “apps.” NetSuite offers preconfigured “suites” of apps to match the needs of different market segments. Some modules exist as basic and advanced versions. In our comparison, we used the more advanced modules when available.

5



*The world's number one cloud
business management suite*

Microsoft Dynamics AX

Microsoft Dynamics AX is the most feature-rich of the five products in the Microsoft Dynamics ERP line. AX was initially released as a collaboration between IBM and Damgaard Data (as IBM Axapta) in 1998 before being acquired by Microsoft in 2002 and re-branded under its current name. AX is designed for mid-to-large sized enterprises operating across multiple locations, countries, or currencies. Dynamics AX has particular strengths in manufacturing and distribution. It is commonly deployed by companies with revenue greater than \$50 million annually, though smaller implementations are also possible. For this comparison, we chose the latest release, AX 2012 R3, in the on-premise configuration.



Microsoft's ERP solution



No Info

(customers in Egypt,
the Gulf and Russia)



300 +

apps



4 million

monthly users



15

apps



**3 to 6
months**

to be implemented



4,600 +

employees



3 to 24 months

to be implemented



10,000 +

employees



Inventory Management

Feature Comparison

Inventory management is like juggling: it takes practice and skill to keep all the balls in the air.

300code

General Scope

Multi-Warehouse	✓
Storage Locations	✓
Bin Replenishment	✓
Mobile Device Support	✓
Multi-Company	✓
Multi-Currency	✓
Multi-Language	✓
Automatic ASN (Advanced Shipping Notice)	✗
Package Management / Cartoning	✓
Freight Carrier Integration	✓
Manage Consignee Stocks	✓
EDI (Electronic Data Interchange)	✗

Products

Non-Stocked Inventory	✓
Multiple Variants	✓
Multiple Units of Measure	✓
Inter-Classe UoM Conversion	✓
Variant Matrix	✓

SAP Business One

Netsuite

Microsoft Dynamics

✓	✓	✗
✓	✓	✓
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✓	✗	✓

300code

Traceability

Lots / Serial Numbers	✓
Up / Down Traceability	✓
360° Traceability	✓
Expiration Dates	✓
Cycle Counting	✓

Reporting

Inventory Forecasts	✓
Inventory Valuations	✓
ABC Analysis	✓

Barcode Support

QR Code Support	✓
RFID Support	✗
Lots / Serial Numbers Support	✓
Receptions	✓
Picking	✓
Internal Moves	✓
Delivery Orders	✓
Inventory Adjustments	✓

SAP Business One

Netsuite

Microsoft Dynamics

✓	✓	✓
✓	✗	✓
✓	✗	✓
✓	✓	✓
✓	✓	✓

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✓	✗	✓

300code

Routing

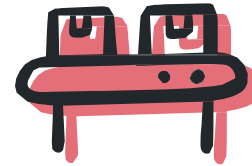
FIFO / LIFO	✓
Customizable Routes	✓
Putaway Strategies	✓
Wave Picking	✓
Batch Picking	✓
Zone Picking	✓
Cluster Picking	✓
Cross-Docking	✓
Putaway Locations	✓

SAP Business One

Netsuite

Microsoft Dynamics

✓	✓	✓
✗	✗	✓
✓	✗	✓
✓	✗	✓
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✓	✗	✗
✓	✗	✓



Supply Chain

Feature Comparison



A well-managed supply chain is essential for success
in today's global marketplace.

Features

Vendor Data Management	✓
Vendor Pricelist Management	✓
Inbound Quality Control	✓
Dropshipping	✓

Purchase

Purchase Requests	✓
Purchase Orders	✓
Purchase Approval Workflow	✓
Request for Quotations	✓
Contracts / Purchase Agreements	✓

Automated Procurements

Minimum Stock Rules	✓
Make-to-Order	✓
Master Production Schedule	✓

✓	✓	✓
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✓	✗	✓



Manufacturing

Feature Comparison

Manufacturing is like a magic trick. We take raw materials and transform them into products that people use every day.

300code

Master Data

Multi-Level BoM	✓
By-Products / Co-Products	✓
Routings	✓
Subassemblies	✓
One BoM for Multiples Product Variants	✓
BoM Versioning	✓
Multiple BoM / Routing	✓

Planning

Demand Forecasting	✓
MRP Scheduler	✓
Gantt Chart Scheduling	✓
Kanban Planning	✓
Production Calendar	✓
Infinite Capacity Scheduling	✓
Finite Capacity Scheduling	✓
Multiple Scheduling Plans	✗
Delivery Date Calculation	✓
Production Order Splitting / Merging	✓

SAP Business One

Netsuite

Microsoft Dynamics

✓	✓	✓
✓	✗	✗
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✓	✗	✗

Operations

Manufacturing / Production Orders	✓
Job Tracking	✓
Work Orders / Operations	✓
Automated Time Tracking	✓
Disassembly Orders	✓
Subcontracting	✓
Rework / Repair	✓
Scrap	✓
Disposal Strategies	✓
Kits	✓
Edit Individual Production BoMs	✓

Costing

Perpetual Inventory Valuation	✓
Periodic Inventory Valuation	✓
Standard Price	✓
FIFO / LIFO	✓
Landed Costs	✓
Actual Production Labor	✓
Production Order Costing	✓

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✓	✓	✓

300code

Shop Floor Control

Shop Floor Terminals	✓
Production Activities	✓
Non-Production Activities	✓
Time Tracking	✓
Messages on Work Orders	✓
Barcode Support	✓
Equipment / Maching Management	✓
Work Instructions on Work Orders	✓
Maintenance Requests from Shop Floor Terminal	✓

Human Resources

Schedule Management	✓
Touchscreen Attendance	✓
Timesheets	✓
Breaks	✓
Overtime	✓
Vacation / Injury	✓

SAP Business One

Netsuite

Microsoft Dynamics

✓	✗	✗
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✓	✗	✗

300code

Reporting and Forecasting

Overall Equipment Efficiency	✓
Work Time	✓
Demand Forecast	✓
Maintenances KPIs	✓
Production Costs Analysis	✓
Analytic Accounting	✓
CSV Export	✓
Dynamic Pivot Tables	✓
Dashboards	✓
Save Custom Reports	✓

SAP Business One

Netsuite

Microsoft Dynamics

✗	✗	✗
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✓	✓	✓



Maintenance

Feature Comparison

Don't wait until something breaks to fix it.
Maintenance is cheaper than repairs.

Schedule and Request Handling

Schedule Preventive Maintenance	✓
Maintenance Kanban	✓
Maintenance Calendar	✓
Shop Floor Integration	✓
Multiple Teams / Sites	✓
Asset Management	✓
Subcontract Repair	✓
Job Tracking	✓

Parts Management

Inventory Management	✓
Purchasing Integration	✓
Rotating Asset Location	✓
Equipment Serial Numbers	✓
Equipment Maintenance History	✓
Dealer Portal	✓

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Feature Comparison

Quality is never a matter of price.

Quality Control

At Reception	✓
In-Process	✓
Before Delivery	✓
Inventory Quarentine	✓

Quality Checks

Quality Control Plan	✓
Pass/Fail Checks	✓
Measurement Checks	✓
Quality Alerts / Nonconformance Documents	✓
Print Nonconformance Documents	✓
Corrective Actions	✓

ISO9001 Tools

Documentation Management	✓
Customer Satisfaction Surveys	✓
Customers Complaints Management	✓
Traceability of Operations	✓
Resources Management	✓

Reports

Nonconformance Costs	✗
----------------------	---

✓	✗	✗
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✓	✗	✗
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Feature Comparison

PLM is the glue that holds together the product development process.

Features

Engineering Change Orders (ECOs)	✓
BoM Versioning Management	✓
Routing Version Management	✓
MRP Integration	✓
Centralized BoM Management	✓

ECO Management

Approval Workflows	✓
BoM Version Difference Viewer	✓
Bulk BoM Updates	✓
Notification Mechanism	✓
Project eMail Gateway	✓
ECO Costing	✗

Third-Party CAD Integrations

AutoCAD	✗
SolidWorks	✗
Autodesk	✗

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✗	✗	✗
✗	✗	✗
✗	✗	✓



Usability, Pricing & Conditions

Feature Comparison

300code

User Interface

Full Web Interface	✓
Mobile App	✓
App Store / Add-ons	✓

Subjective Ratings

Navigation and Search	5 / 5
Data Entry	5 / 5
Mobile App	4 / 5
Reports Flexibility	4.5 / 5

Pricing and Conditions

Monthly Pricing	24.90€ / user 1
Number of Users	Unlimited
Contract Duration	Monthly
Free Trial	✓
Hosting	Cloud + On Premise

1. 300code Online includes every app, MRP among them, for 24.90€/user/month, with a free trial and no add-on licences.

SAP Business One

Netsuite

Microsoft Dynamics

✓	✓	✓
✓	✓	✓
✓	✓	✓

199\$/user	999\$+99\$/user	95\$/month/user 2
Unlimited	Unlimited	Unlimited
Yearly	Monthly	Perpetual
✗	✗	✗
✗	✗	✗
Cloud + On Premise	Cloud	Cloud + On Premise

2. The first app is available at \$95/user/month. Starting from the second app, every new app will be invoiced \$20/user/month.

User Interface

When evaluating enterprise software, the user interface is a crucial factor that is often overlooked but holds significant importance. It directly impacts users' efficiency within the system and the ease of implementation, and will even contribute to reducing costs associated with user errors.

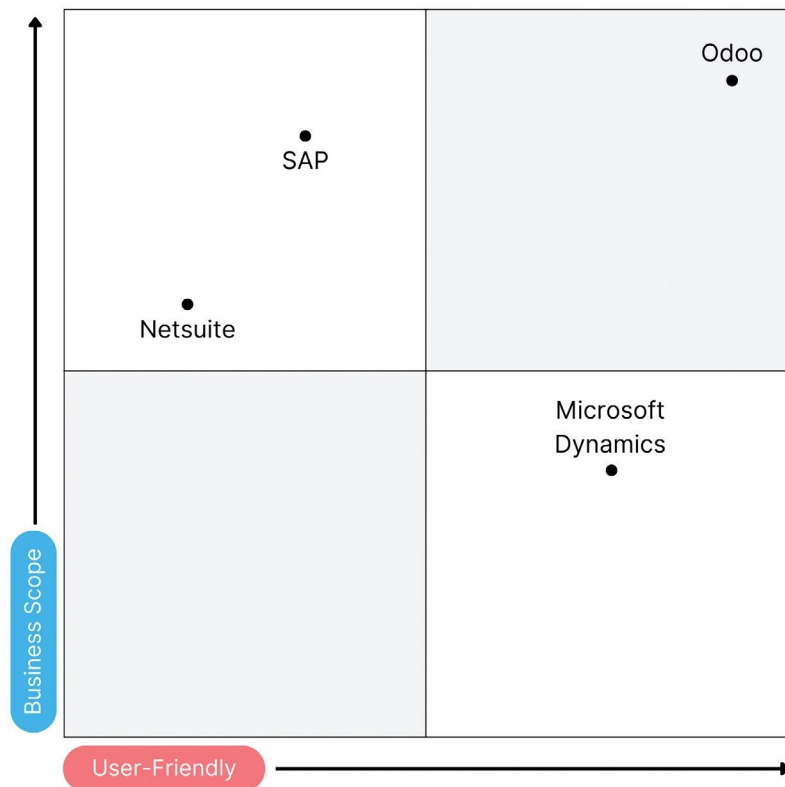
A successful solution must consider user needs and goals to assist them effectively. The UI is crucial in understanding human factors and enabling the software to fulfill its purpose. From a manufacturing point of view, the user interface becomes even more critical, especially in shop floor control systems. Workers in manufacturing environments often operate in noisy surroundings, work swiftly, wear personal protective equipment (PPE), or may not have optimal conditions for using a traditional computer interface with a keyboard and mouse. Therefore, it is essential to consider the specific design requirements of a shop space or production line when evaluating the usability of an interface in such environments.

To better understand the software's visual elements and interface options, we have included screenshots of analogous menus from each software in this comparison. While assessing software usability based solely on static images has limitations, it can still offer a rough basis for comparison. This additional information will assist you in your analysis and provide valuable insights into the user experience of each software solution.

Different solutions, Different needs

When choosing the right software for your business, it is important to assess several criteria based on your specific needs.

Business Scope and User-friendliness



Business Scope measures a software's capacity to meet your business needs comprehensively through its features and its flexibility in customizability and integration with other tools.

User-Friendliness measures how straightforward and user-friendly a software solution is for your team to navigate, requiring minimal training or complex procedures. Additionally, it evaluates how hassle-free the software is to set up, considering factors like time, effort, and resource requirements for initial configuration within your organization.

300code is a robust solution addressing a wide range of business needs, extending beyond MRP functions. The platform is designed to streamline operations and replace the need for disjointed, non-integrated software applications. 300code shines as a highly customizable, all-in-one solution with many applications. It is built on a proven platform with a large ecosystem of applications behind it, which we run and extend as a partner. Its integrations with dozens of other modules, including Inventory, Purchase, Quality Control, Product Lifecycle Management, or even Maintenance, make it a complete 360° software, allowing the user to manage all their MRP operations without the need to leave the shop floor environment.

Meanwhile, SAP provides advanced manufacturing features but might suffer from limitations regarding customization. SAP is also renowned for offering a broad spectrum of business solutions, from Financial Management and HR to Customer Relationship Management. However, the solution lacks integrations between its different modules.

Microsoft Dynamics is scalable, making it easy to implement. In addition to MRP, Microsoft provides several useful integrations with its other solutions (such as Microsoft Office). However, the software is still limited and lacks quality control, maintenance, and PLM features. The solution also suffers from the absence of an advanced HR solution integration. It is usually used by small SMEs with straightforward manufacturing processes.

Finally, Netsuite can be seen as a basic MRP solution. The software lacks many advanced features offered by 300code and SAP, such as Quality, Maintenance, or Scheduling. The software also relies on many non-native integrations, making it difficult to access for small and medium businesses.

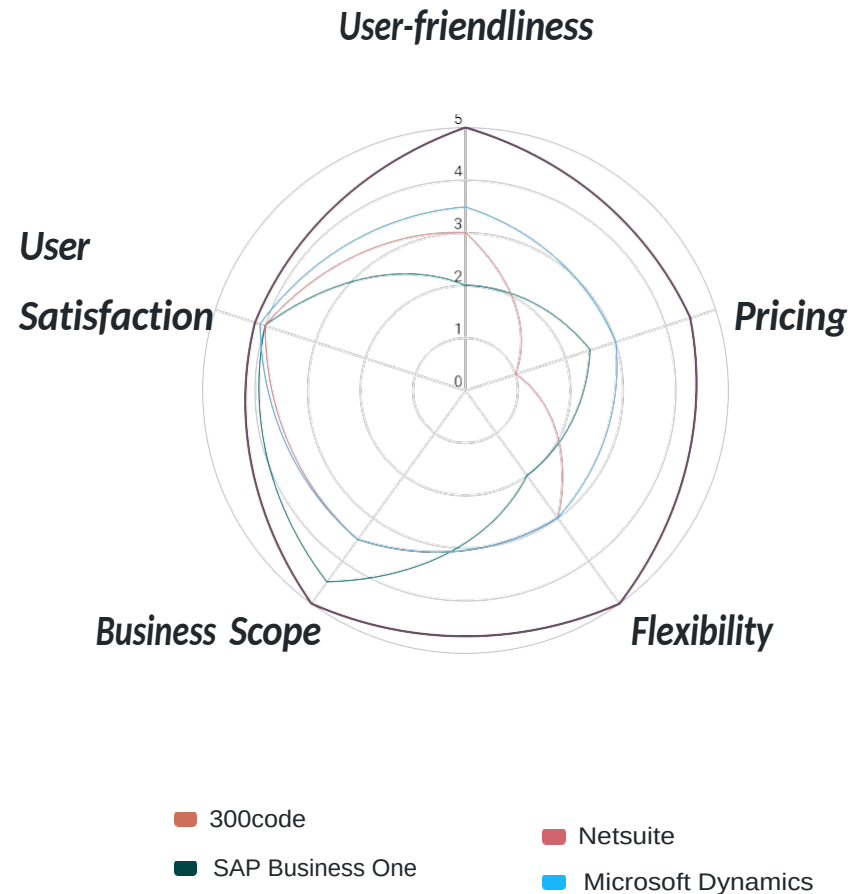
Now, when it comes to user-friendliness, 300code and Microsoft Dynamics offer intuitive interfaces, making the solution suitable for users of varying technical backgrounds. Its straightforward setup ensures a hassle-free experience for every business.

However, Microsoft Dynamics relies on integrations with external software, meaning the solution takes more work to scale. On 300code's side, it shines thanks to its integration with many workers' daily life tools. Indeed, the solution offers the possibility to manage production with an external tablet or to use foot pedals to advance in the production instructions or to record output.

SAP and Netsuite, on the other hand, are noted for being less user-friendly and can be challenging to set up. They might require more time and effort for users to become familiar with their interfaces. Also, the multiplication of screens for every process or recording action makes it difficult to use in a real manufacturing environment.

That's why it's essential to consider your business's specific needs and scale when assessing which solution is the best fit, as the ease of use and setup can vary significantly among these options.

Value Proposition



Conclusion

Ultimately, the choice depends on your organization's specific requirements, scale, and the balance between customization, ease of use, and setup.

If you are seeking specific MRP solutions, then 300code and SAP might be a good fit. Thanks to their advanced manufacturing features, these systems are well-suited for complex manufacturing environments and provide efficient solutions for every manufacturing need.

If you have more extensive requirements, you may find 300code the most appealing solution. It offers advanced features and can accommodate any process. Its possibilities in terms of customization and its extensive suite of integrated business applications make it the best solution for businesses having needs beyond manufacturing. Additionally, 300code offers ease of use and setup, making it suitable for small and medium businesses.

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