



Production Planning & Scheduling Bista Solutions' Extensions for Odoo Manufacturing



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Production Planning & Scheduling Document Overview



Our Key PP&S Features:

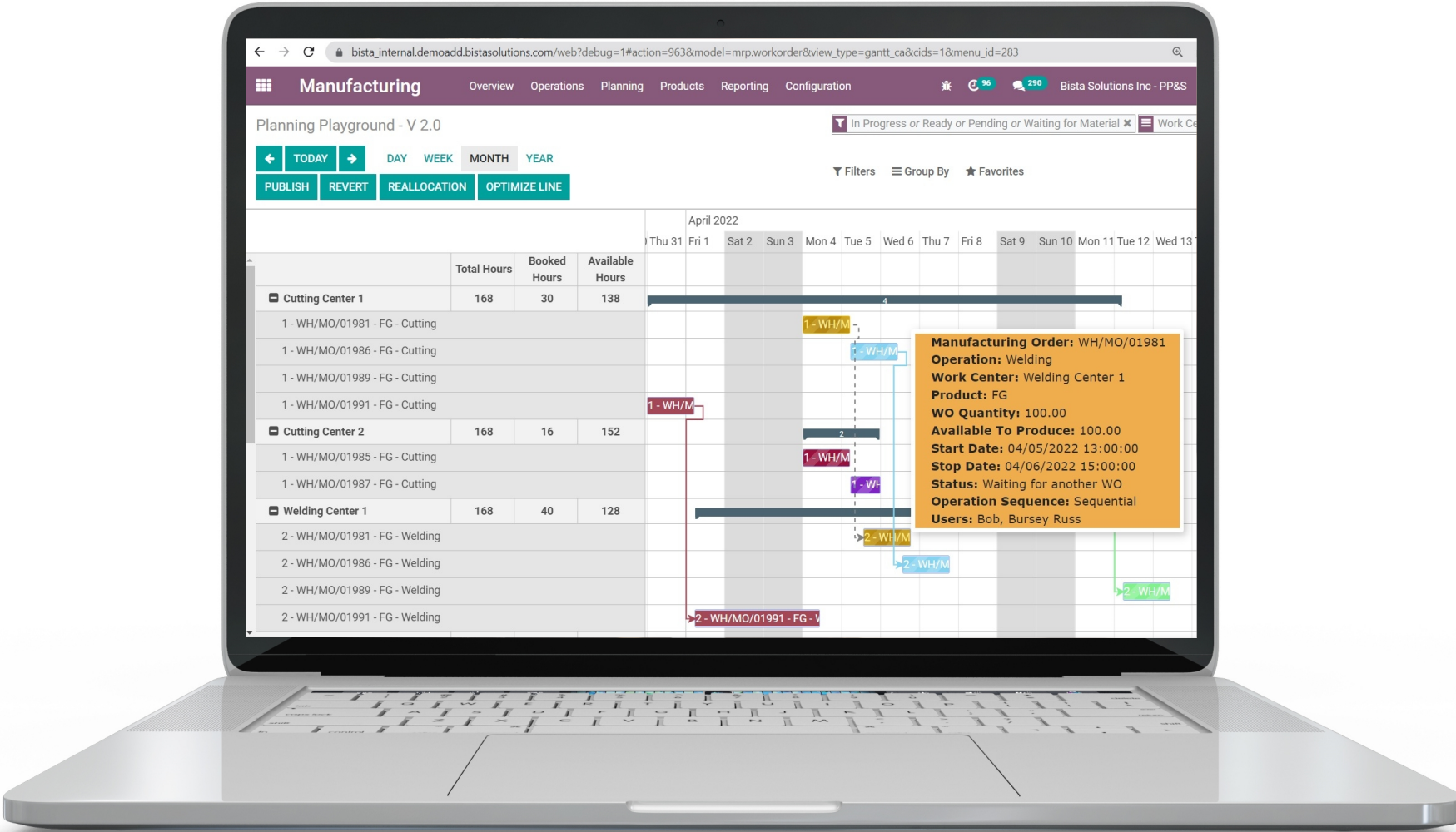
- » Finite Capacity Planning
- » Material Requirement Planning (MRP)
- » Master Production Schedule (MPS)
- » Automated Detailed Production Planning
- » Backward & Forward Planning
- » Work Center Management
- » Bill of Materials (BOM)
- » What-If Analysis
- » Demand Order Forecasting
- » Line Balancing
- » And much more

Quick Business Benefits:

- » Improve planner productivity
- » Reduce customer lead times
- » Improve forecast accuracy
- » Reduce work in progress
- » Improve asset utilization
- » Schedule production efficiently
- » Prevent user risks and errors
- » Access key data quickly & easily
- » Improve customer service level
- » Reduce inventory
- » Improve delivery date accuracy

Bista Solutions' Production Planning & Scheduling

Some of Our Standard Extensions

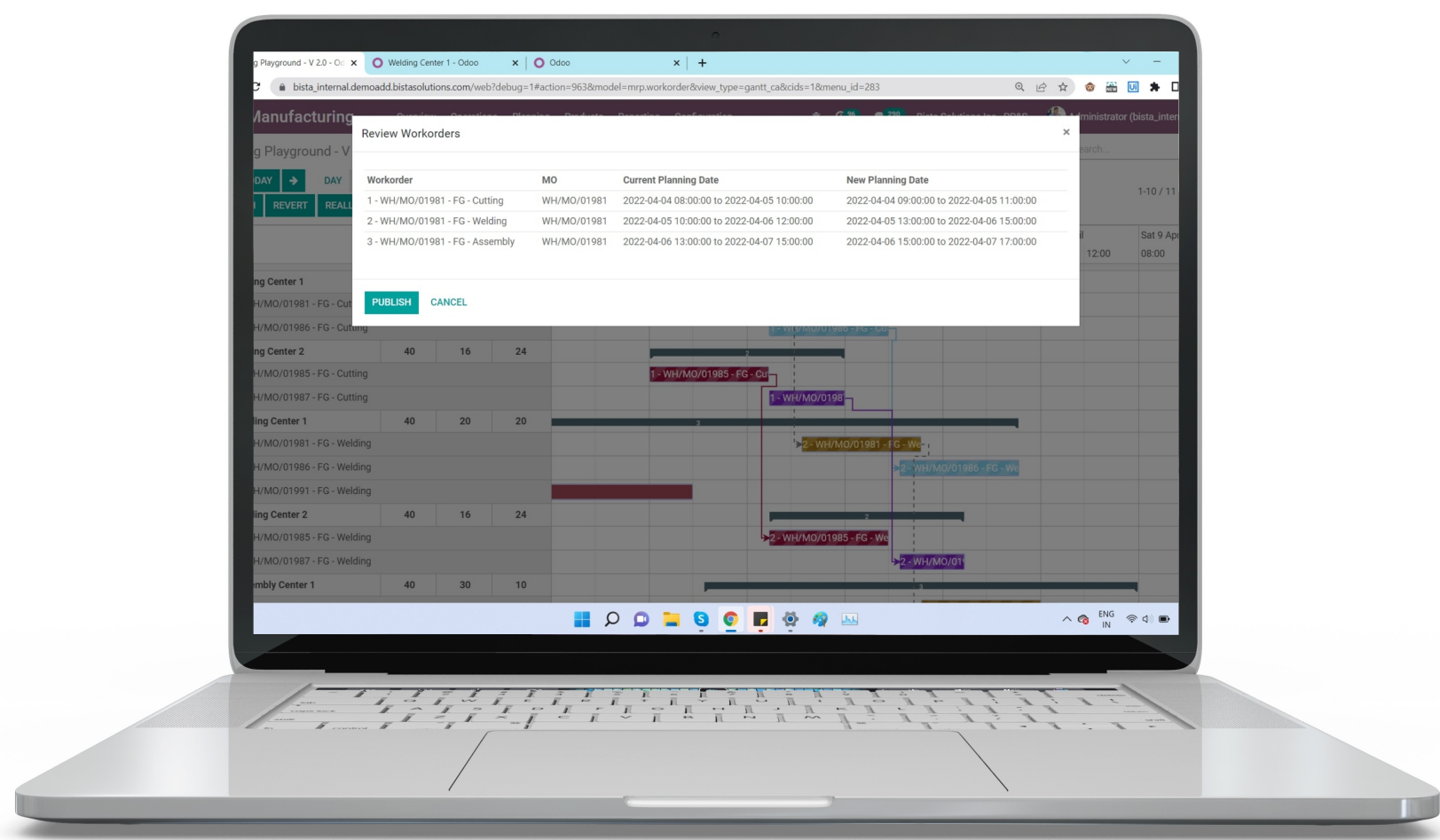


Bill of Materials

- Common Question:

Is it possible to create a one-time setting that allows me to arrange operations (operation/activity & workcenter) step-by-step?
- Solution:

Creating an operation sequence (sequential / parallel) where dependency can be defined on the line-level.
- In order to easily map all the operations sequence in work centers, we came up with this BOM extension that ensures all the threads are done as per the quality standard. Noting that there are operations that do not need to be in the dependency sequence, but are very important to achieving the final product.
- That's where the parallel activity was created. This extension is a very effective tool to optimize the entire supply chain, helping companies make the manufacturing process much more profitable. In addition, due to how it is structured, this extension will indirectly promote good manufacturing and documentation practices.
- This extension will help companies within the manufacturing industry with their usability, visibility and accuracy.



Operation & Operation Sequence

Common Question: How can I define whether my process is labor-intensive or machine-based?

Solution: Easily define labor-intensive or machine-based processes by work center.

Operation Sequence is an extension that allows for easy mapping of all the operations' orders (i.e. in sequence) inside the work centers.

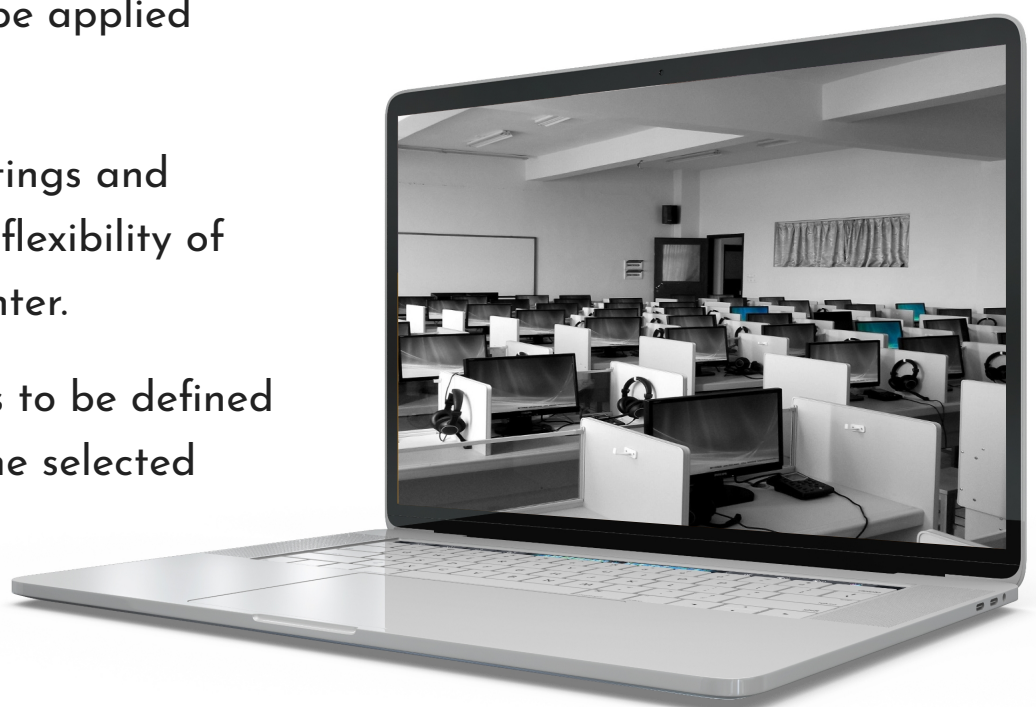
Since the user only needs to establish whether or not the process is manual, our team has simplified this by allowing them to determine it via one click. By doing so, the company has already defined the type of calculation that will be carried out in order to measure the efficiency and productivity metrics. It is important to note that the Manual Operation depends on the resource. This means that when the user selects the checkbox and adds a resource, the operation duration will be reduced. Likewise, if the user removes/reduces the resource, the operation duration will increase.

Work Center

Common Question: Is it possible to set workers by work centers, and for these settings to be applied every time this work center is selected?

Solution: By predefining production settings and allocation by work center, you gain the flexibility of assigning labor by operator to work center.

This extension allows multiple operators to be defined and allocated to the Work Orders by the selected Work Center.



Planning by Work Center

» Working Hours

Common Question: Can I schedule production based on the most effective time per shift?

Solution: The Working Hours extension allows for effective time production scheduling.

This extension allows the planner and manufacturing department to see how much time is available based on Shift duration and on the Workers available. Essentially, while Planning Working hours is considered, so is the Working Time of the Day on the basis of Working Hours of the Work Center. So everything is fully accounted for when scheduling production, making it both accurate and effective.

» Working Day

Common Question: Can the planner prevent scheduling on non-working days?

Solution: The Working Day extension allows users to easily identify holidays and schedule accordingly.

Unfortunately, while there is a restriction to prevent this situation, the Working Day extension created by the Bista team allows for easy holiday or weekend identification within the application. In order to make it as user-friendly and visible as possible, we ensured that the color of the Gantt chart on both Planning Playground and Published schedule screen will change tones on the dates that are not working days.

» Global Off

Common Question: Can the planner prevent scheduling on non-working days?

Solution: Prevent date errors in production scheduling with the Global Off extension.

While Global Off is not considered while Planning as an out-of-box functionality, our team created this extension to make the planning process more accurate and realistic. While Planning, we considered Global Offs' defined at Work Centers. This means that the system will take the leave time into consideration since this will impact the work center capacity.

» Alternate Work Center

Common Question: If I hired a new Planner and that individual accidentally scheduled a molding in the BOM in an assembly line (which resulted in the order not running in time) is there a way to prevent this from happening?

Solution: With the Alternate Work Center extension, you can easily allocate labor to work centers.

In order to make the manufacturing process as automated as possible, this extension allows the system to assign every BOM to a specific work center as well as the flexibility to set alternative work centers. This way, that specific BOM can only be run on that work center hierarchy. For example, if product A needs to be prioritized but currently cannot be run on the default workcenter because of capacity, maintenance to equipment, or such - the planner has the flexibility to run that BOM on an alternative work center.

» Planning Begins from MO's Start Date

Common Question: Since a planner can accidentally program an order on a past day, which affects the schedule, is there a way to prevent this from happening?

Solution: Our extension, as aforementioned, can prevent date errors in production scheduling.

The out-of-box functionality allows you to move the Work Order beyond the Start Date of the Manufacturing Order, but our extension ensures that users cannot move the Work Order before the Planned Date, avoiding this potential situation from happening at all. Essentially, the system won't allow planners to program an order on a past date. This is incredibly useful for when a planner is faced with multiple work centers and multiple MOs -which is when it is most difficult to identify the date programming error on the system. Our extension prevents this from happening, which allows for more accurate scheduling.

» Weekend is Considered

Common Question: Is there an easy way to see "off-days" and "weekends" on the calendar so that if we hire a planner they are not able to schedule an order to start on a Sunday (which can impact the entire schedule if the product was a subcomponent for a Finished Good).

Solution: Our extension has the capability to intuitively identify available dates to schedule.

Identifying a holiday or a weekend is incredibly important when it comes to planning and scheduling. That is why if the Work Order is going through the Weekend, or on an Global Off, then the Work Order color will be lighter. In fact, the Gantt Chart on both the Planning Playground and Published Schedule screen, will change tones on the dates that are not Working Days.

» Pop-up Message on Planning

Common Question: What options does the system offer if someone from manufacturing, or from any department, wants to quickly check on the status of an order because they are in a hurry, or if someone (who really doesn't like going through multiple loops) needs access to this information?

Solution: With speed, accuracy and usability in mind, our team created an extension that allows users to gain access to a full detailed work order status by hovering on the Work Order.

The user only needs to open the MPS in the manufacturing module. Upon searching for the specific order, and passing the mouse over the line in the Gantt chart, an information box will appear, displaying all the details of the status. Hovering will trigger a pop-up on the Work Order, and it will look something like the following:

Product - P1

Quantity - 100

Start Date - 09-08-2021 8:00:00 AM

Stop Date - 09-09-2021 10:00:00 AM

Expected Duration - 600 Minutes

Work Center - Work Center 1

Status - Material is Not Available

Users - Operator 1, Operator 2

Operation Sequence - Sequential

» Purchase Lead Time

Common Question: How can the planner know when the materials will be available?

Solution: Our extension allows users to schedule by components' estimated time of arrival (ETA).

The Purchase Lead Time is considered while Planning. This functionality will help improve the supply chain, making the planning more accurate. With the newly gained visibility (the planner knowing a component's ETA) they will know when to program the MO based on availability.

» Multi-Level BOM Planning

Common Question: With how time-consuming and error-prone programming the Orders for the final product (and for its components or child activities) is...is there a way to make this process quick and efficient?

Solution: Our extension allows for easy scheduling via the BOM tree.

Multi-Level BOM Planning is provided, as well as its dependency. If we have 3 Level BOM then Odoo will plan for the last child MO, then the Second Child MO and finally it will plan for the first level MO. In this instance, the user only needs to open the MPS in the manufacturing module. Upon finding their specific order, they will need to use their mouse and hover the line in the Gantt chart. The information they need will be displayed, including the status of the Work Order. Additionally, questions like these will also be answered: When does it run? Is it running already? In what workcenter? When is it expected to be finished? Does it depend on other orders?

» Backward Planning

Common Question: If I know a client wants their products in 1 month, and it only takes one week to produce the total demand, can I set the deadline date to the last week of the month in order to optimize time on the order?

Solution: The Bista team has created flexible Backward and Forward Scheduling.

Our extension requires users to provide the Plan Deadline Date for the Manufacturing Order. When they do so, Odoo will calculate the Lead Time of the components, the Operation duration according to the Operation sequence, and show the Start Date of the MO.

Updated Cost Analysis Report

Common Question: How easy is it to track costs by BOM if my company starts making BOM cost revisions on a semester basis and we implement Lean Manufacturing?

Solution: Effectively track production operating costs via our updated cost analysis report extension.

Each of the costs incurred are recorded within the profit analysis of the product, which greatly facilitates the task of carrying out cost reduction projects, budgeting, and more - thanks to the granularity of the information. The out-of-box functionality considers the costs of components and the cost of operations, while our extension considers the cost of components, the cost of operations as well as the cost of labor.



What-If Analysis (Planning Playground)

Common Question: If I want my Planners to make as little changes as possible on the actual schedule, is there a way to create a user-friendly pre-schedule in order to simulate publishing without actually publishing the following week's schedule?

Solution: Designed by keeping the day-to-day activities within the manufacturing industry, the Production Scheduling simulator is the solution to a common issue faced by many companies within this vertical.

Our extension is created in a way that allows planners to have a separate view, where they can plan and re-plan Work Orders until they are done. After which they will see a Publish button. If the planner wants to cancel all the planning they have scheduled, then they will be able to do so via a Cancel Planning button. This extension is interactive, information and user-friendly. It also allows planners and enterprises to schedule accurately while reducing the risks on the production floor.





Planning by Resource

Common Question: The manufacturing manager is trying to measure and increase efficiency and would like to know if it is possible to organize the production schedule by resource?

Solution: Production can be scheduled by resource.

With this extension, a New Menu is provided. This menu allows the users to see the planning of all resources assigned to the Work Centers. Additionally, they can assign the Work Orders to any Resource, or remove them according to the load of the Resource. This extension is extremely useful as it enables organizing labor on the production floor based on skills and capacity.

Imagine a scenario where there is a very urgent product. The manufacturing manager needs to prioritize based on this urgency, and this extension makes doing so possible. The manager will be able to see and arrange the people ordered by skill and efficiency and send them to the line or lines where the product is going to be run.

Manufacturing → Config. → Quality Control

Common Question: Can a workflow be defined in order to prevent bad practices on inventory management related to the production process?

Solution: WIP inventory workflow: best practices.

There is a vicious cycle on Inventory Management for manufacturing or WIP inventory, that is driven by bad practices or an improper workflow. MOs create inventory discrepancies and inventory discrepancies generate shortages on the production floor, with all the related effects in terms of delivery and cost. Here are some best practices in order to prevent bad practices on inventory management related to the production process:

- User should not start operations without having materials reserved,
- User should not Reserve the Materials before Planning
- User should not produce more than Confirmed Quantity
- User should not do MARK AS DONE in order to complete the MO before completing Operations



Available to Promise

Common Question: I need the system to help me optimize my inventory levels without the risk of getting short. Is it possible to reduce my safety stocks?

Solution: ATP to optimize inventory, and ETA. When there is an order, this extension allows users to use finite forward planning based on current capacity utilization in order to come up with a scheduled ship date.

The Bista team created an extension that lets the system provide the flexibility of working with the "Available to Promise" approach. This way you will impact your inventory levels, production, supply chain (especially the sales and the logistics departments) as well as the sales process.

Available to Produce

Common Question: Can I see my yield based on the current components' availability?

Solution: Based on the available components (available resources), our extension allows Odoo to show users how many finished goods can be produced (yield production).

In fact, the Planner as well as those in the Manufacturing department will gain the flexibility to decide if they opt for a partial qty schedule, or choose to schedule the total original qty based on ETA of the components.

Skill Matrix

Common Question: If the manufacturing manager wants to organize and allocate labor on the lines based on expertise/efficiency, can it be done within the system?

Solution: Our extension allows user allocation based on skill on Work Centers. If the Operation is manual then based on the users' skills, the operation duration will be updated/changed.

This extension allows you to maximize processes based on labor skill levels as well as organize said labor on the production floor. Additionally, in the case of an urgent product, the manufacturing manager can get the job done by seeing and arranging the people by their skill-set and sending them to the appropriate line/lines in order to get the job done.

Line Balancing



Common Question: Is it possible to perform Line Balancing without using excel or a likewise software?

Solution: One-click line balancing.

This extension's purpose is to assign workloads to each assigned workstation in a manner where every workstation has approximately the same amount of work to be done. Our extension allows users to gauge the following questions, including: what to run? How to run it? Am I making full use of my resources? Am I underusing them? am I maximizing working time? In what order do I run the product? How do I organize the workstations? Can I reduce production costs? Minimize the use of resources without affecting my production volume?

By improving the efficiency of their lines, organizations can reduce the waste of Lean manufacturing and unlock more value.

Finite Capacity Planning

Common Question: Is there a way to assess the production capacity of our manufacturing facility, while predicting the lead times of our jobs in an efficient way?

Solution: Bista's Finite Capacity Planning extension.

With our extension, users can predict lead times of their jobs based on accurate, real-time information. Likewise, they can optimize the use of available resources, including material constraints, workcenter up-time and labor capacity. Additionally, our extension allows for notifications and exception messages for increased business activity monitoring and proactive decision making. By optimizing the use of available resources, you get a demand-driven and reliable on-time delivery, minimal production costs (as materials are only ordered when needed) as well as increased customer service/satisfaction.

Why Bista Solutions?



In today's data-driven world, seamless adoption of digitalization is the core competency that sets businesses apart from one another. Bista Solutions is a fully certified Odoo Gold Partner and has won Odoo Best Partner across North America in 2021, 2018, 2016, and 2015.

Our team has conducted over 300 mid to large size successful project implementations. We also have more than 10,000 users around the globe, 200+ developers, as well as functional and technical ERP consultants available across all time zones. Bista Solutions has offices across North America and off-shore; including Texas, California, Georgia, Nevada, Ontario, Mumbai and more.

With the capability and expertise to help businesses in every industry, Bista Solutions helps companies break silos, increase business transparency, improve efficiency and unify business processes through digital transformation.

USA - California

📍 39180 Liberty St, #101, Fremont, CA 94538.

✉ sales@bistasolutions.com

☎ +1 (858) 401 2332

USA - Atlanta

📍 3295 River Exchange Drive, Suite 150, Norcross, GA 30092.

✉ sales@bistasolutions.com

☎ +1 (858) 401 2332

USA - Texas

📍 1255 W 15th St, Suite 210, Plano, TX 75075.

✉ sales@bistasolutions.com

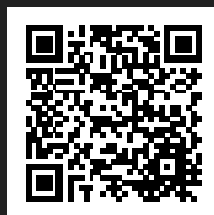
☎ +1 (858) 401 2332

Canada - Ontario

📍 Unit 1, 2595 Dunwin Dr., Mississauga, Ontario, L5L 3N9.

✉ sales@bistasolutions.com

☎ +1 (858) 401 2332



www.bistasolutions.com

