

Enhance the use of Rapid Planning in real-time supply chain planning



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- **Abstract**
- Key Challenges in Real-time supply chain solutions
- Oracle Rapid Planning –Architecture
- Oracle Rapid Planning - Features
- Case Study on Hi-Tech customer solution
- Functional Comparison of ASCP & RP.

Abstract

- **Title:** Rapid Planning for real-time supply chain planning.
- **Abstract:** In a real world, changes to supply and demand are norm of the day. This poses a challenge to supply planner as he needs to accommodate these constant changes in supply planning process and mitigate the risk arising out of these changes. The need of the day for planner is a real-time supply planning tool, to consider the latest and anticipated changes to aid in planning.

Oracle Rapid Planning with its “In-memory planning engine” helps in real-time supply-demand balancing. Planning can be completed quickly to evaluate multiple strategies to mitigate risk. RP, with its advanced and friendly UI features, helps planners to do quick changes in supply and demand picture and evaluate the plan output. RP gives predictive and actionable insights into real-time changes which will lead to better supply chain management. RP Output is taken into bolt-on Backlog Management Workbench (BMW), for the planner to simulate and to execute RP results into reschedule actions in Order Management (OM).

This session also talks about RP dashboards, RP key features and case study conducted on a one of the high-tech industry.

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Key Challenges in real-time supply-demand optimization

- Changes in demand's (Priority, Quantity, Request Date)
 - Push-out (Delay), Pull-in (Expedite) and Cancellations from Customers
 - New Hot demand or Increase in existing demand.
- Disruptions in Supplies
 - Supply disruptions due to supplier's production bottleneck or quality issues.
 - Changes in design or capacity.
- Maintaining supply chain inventory at optimal level
 - Balancing Inventory at warehouse, supplier and in-transit.
 - Reducing the follow-ups between suppliers and customers.
 - Meeting high expectations from business.

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Oracle Rapid Planning – Architecture

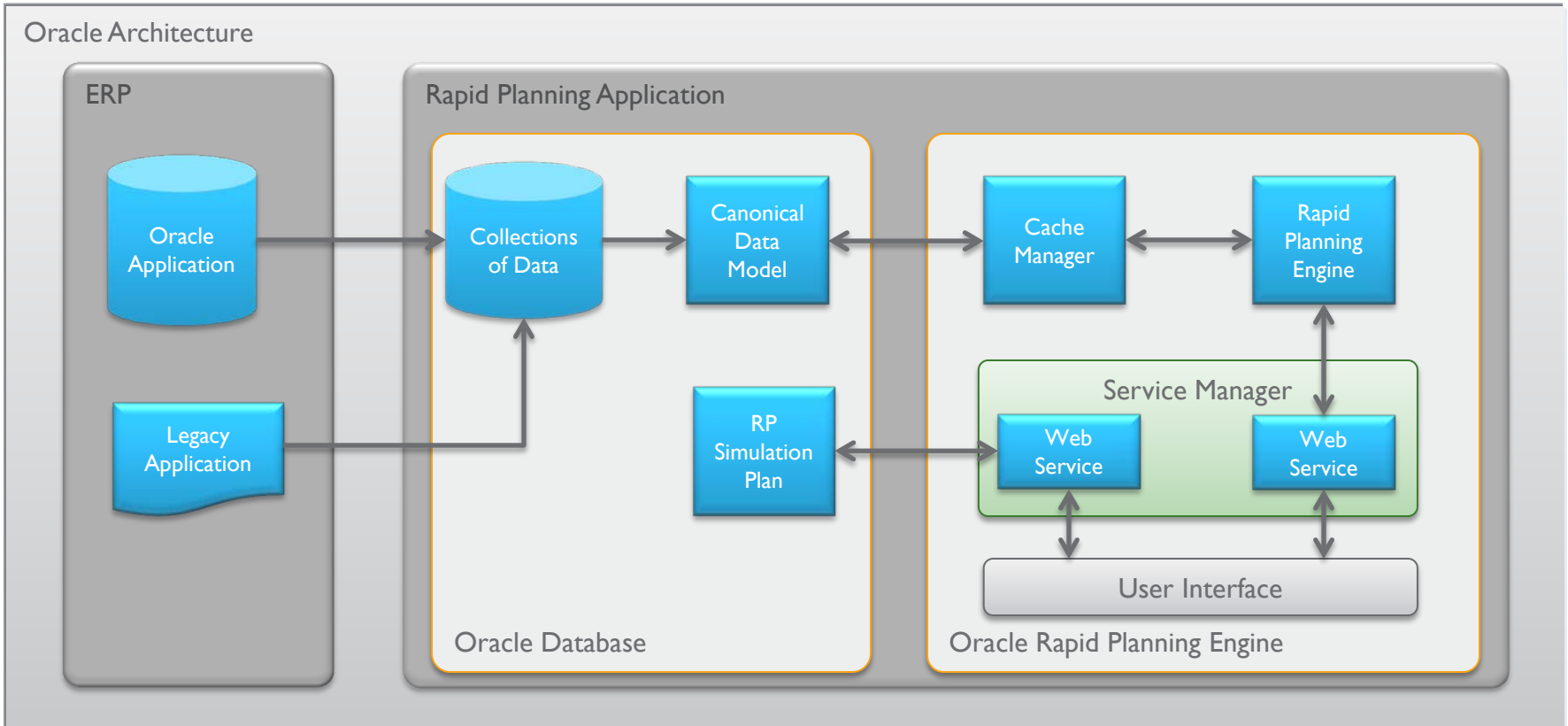


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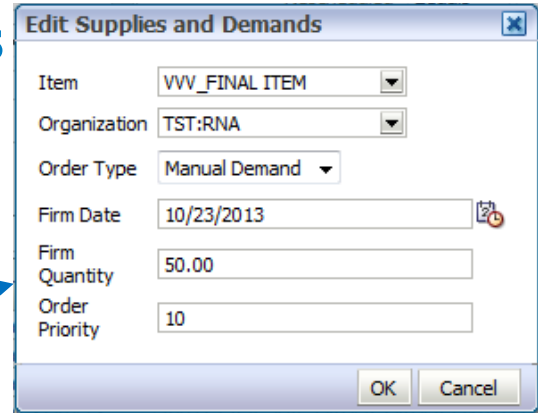
Oracle Rapid Planning – Main Features

- Simulate
 - By using Collected Data / already Planned Data
 - By Modifying Master Data / Transactional Data
- Analyze
 - Ability to have multiple plans to Analyze and Compare multiple business scenarios
 - Use Manual validation to compare the results before and after supply-demand changes.
- Implement
 - Planner to act on RP output data after results are in-line with expectations.
 - Release RP recommendations to EBS using automated decision making process.

Oracle Rapid Planning – Main Features

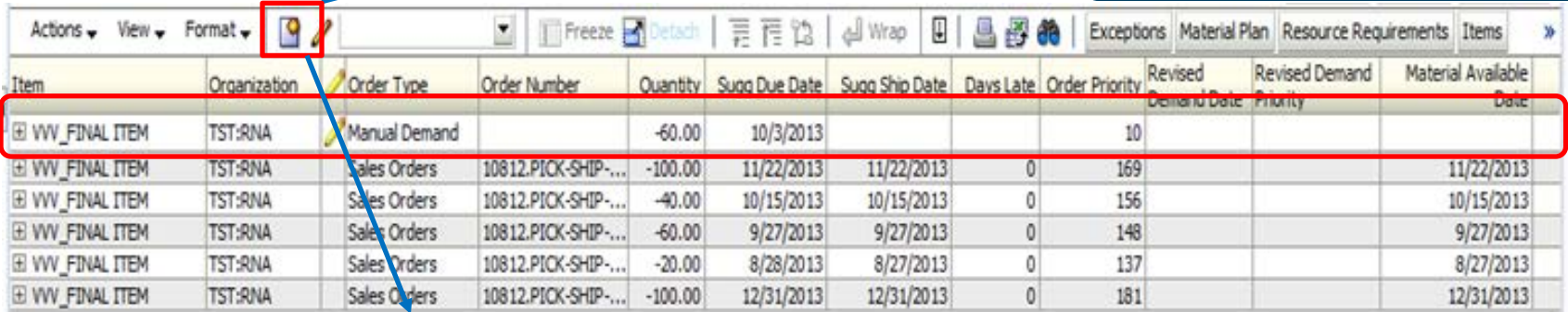
- Simulate – By Collecting / Adding New source (EBS) data

(Hot Demands)



Item: VVV_FINAL ITEM
Organization: TST:RNA
Order Type: Manual Demand
Firm Date: 10/23/2013
Firm Quantity: 50.00
Order Priority: 10

Use Mass edit to enter manual hot demand (enter Quantity, Due date, Order priority)



| Item | Organization | Order Type | Order Number | Quantity | Sugg Due Date | Sugg Ship Date | Days Late | Order Priority | Revised Demand Date | Revised Demand Priority | Material Available Date |
|----------------|--------------|---------------|---------------------|----------|---------------|----------------|-----------|----------------|---------------------|-------------------------|-------------------------|
| VVV_FINAL ITEM | TST:RNA | Manual Demand | | -60.00 | 10/3/2013 | | | 10 | | | |
| VVV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -100.00 | 11/22/2013 | 11/22/2013 | 0 | 169 | | | 11/22/2013 |
| VVV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -40.00 | 10/15/2013 | 10/15/2013 | 0 | 156 | | | 10/15/2013 |
| VVV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -60.00 | 9/27/2013 | 9/27/2013 | 0 | 148 | | | 9/27/2013 |
| VVV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -20.00 | 8/28/2013 | 8/27/2013 | 0 | 137 | | | 8/27/2013 |
| VVV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -100.00 | 12/31/2013 | 12/31/2013 | 0 | 181 | | | 12/31/2013 |

Entry of hot demand of 50 quantity with order priority 10 (highest)

Oracle Rapid Planning – Key Features

- Simulate – With existing Planned (APS) & New Collected source (EBS) Data (**Hot Demands**)

| Item | Organization | Order Type | Order Number | Quantity | Sugg Due Date | Sugg Ship Date | Days Late | Order Priority | Revised Demand Date | Revised Demand Priority | Material Available Date |
|---------------|--------------|---------------|---------------------|----------|---------------|----------------|-----------|----------------|---------------------|-------------------------|-------------------------|
| VV_FINAL ITEM | TST:RNA | Manual Demand | | -60.00 | 10/3/2013 | | 0 | 10 | | | 9/18/2013 |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -100.00 | 11/22/2013 | 11/27/2013 | 3 | 169 | | | 11/27/2013 |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -40.00 | 10/15/2013 | 10/23/2013 | 6 | 156 | | | 10/23/2013 |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -60.00 | 9/27/2013 | 10/9/2013 | 8 | 148 | | | 10/9/2013 |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -20.00 | 8/28/2013 | 8/27/2013 | 0 | 137 | | | 8/27/2013 |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -100.00 | 12/31/2013 | 1/1/2014 | 1 | 181 | | | 1/1/2014 |

Source: Snapshot of Oracle Rapid Planning instance(version 12.3.1.8) Copyright©2013 Oracle Corporation.
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Days late in due date due to new hot demand entered

Oracle Rapid Planning – Key Features

- Simulate – By Changing new collected (EBS) Data (**Hot Demands**)

Resource & supplier Capacity addition



Resource Avail Update

Shift Date: [dropdown] [dropdown]

Units: [dropdown]

From Time: Set To [dropdown] 07:00

To Time: Set To [dropdown] 14:00

[Apply & Close] [Clear]

| Item | Organization | Order Type | Order Number | Quantity | Sugg Due Date | Sugg Ship Date | Days Late | Order Priority | Revised Demand Date | Re |
|---------------|--------------|---------------|---------------------|----------|---------------|----------------|-----------|----------------|---------------------|----|
| VV_FINAL ITEM | TST:RNA | Manual Demand | | -60.00 | 10/3/2013 | | 0 | 10 | | |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -100.00 | 11/22/2013 | 11/27/2013 | 3 | 169 | | |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -40.00 | 10/15/2013 | 10/23/2013 | 6 | 156 | | |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -60.00 | 9/27/2013 | 10/9/2013 | 8 | 148 | | |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -20.00 | 8/28/2013 | 8/27/2013 | 0 | 137 | | |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -100.00 | 12/31/2013 | 1/1/2014 | | | | |

- Supply Chain Bill
- Suppliers
- Calendar
- Constraint Details
- Clear To Build Simulation

Select the order line for which we need to check the constraints and select constraints from menu

Analytics | Supplies and Demands | Constraint Details x

View | [Icons] | Items | Supplies and Demands | Material Plan | Resource Plan | Resource Requirements | Resource Availability | Suppliers

| Order Number | Item | Organization | Constraint Type | Material Constraint Type | Requested Quantity | Available Quantity | Shortage Quantity | Shortage Percent | Search Path |
|----------------------------------|---------------|--------------|---------------------|--------------------------|--------------------|--------------------|-------------------|------------------|-------------|
| 10812.PICK-SHIP-ORDER.ORDER E... | VV_FINAL ITEM | TST:RNA | Resource Constraint | | 8 | 0 | 8 | 100 | All |
| 10812.PICK-SHIP-ORDER.ORDER E... | VV_FINAL ITEM | TST:RNA | Resource Constraint | | 32 | 0 | 32 | 100 | All |
| 10812.PICK-SHIP-ORDER.ORDER E... | VV_FINAL ITEM | TST:RNA | Resource Constraint | | 8 | 0 | 8 | 100 | Primary |
| 10812.PICK-SHIP-ORDER.ORDER E... | VV_FINAL ITEM | TST:RNA | Resource Constraint | | 8 | 0 | 8 | 100 | Primary |
| 10812.PICK-SHIP-ORDER.ORDER E... | VV_FINAL ITEM | TST:RNA | Resource Constraint | | 8 | 0 | 8 | 100 | Primary |

Oracle Rapid Planning – Key Features

- Analyze – With EBS Transactional Data (Supply Disruptions)

Base Line Plan and Suppliers and Supply Data in Base Line Plan

The screenshot displays the Oracle Rapid Planning interface. At the top, there is a menu bar with options like 'Actions', 'View', 'Format', 'Freeze', 'Detach', 'Wrap', 'Exceptions', 'Material Plan', 'Resource Requirements', and 'Items'. Below this is a table with columns: Item, Organization, Order Type, Order Number, Quantity, Sugg Due Date, Sugg Ship Date, Days Late, Order Priority, Revised Demand Date, Revised Demand Priority, and Material Available Date. The 'Days Late' column is highlighted with a red box. Below the table is a search section with various filters like 'Supplier', 'Item', 'Category', 'Buyer', and 'Planner'. At the bottom, there is another table with columns: Organization, Supplier, Supplier Site, Item, Item Description, From Date, To Date, Capacity, Supplier Price, Last Changed Date/Time, Changed By, and Supplier. The 'Capacity' column in this table is also highlighted with a red box.

| Item | Organization | Order Type | Order Number | Quantity | Sugg Due Date | Sugg Ship Date | Days Late | Order Priority | Revised Demand Date | Revised Demand Priority | Material Available Date |
|---------------|--------------|--------------|--------------------|----------|---------------|----------------|-----------|----------------|---------------------|-------------------------|-------------------------|
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| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP... | -60.00 | 9/27/2013 | 9/30/2013 | 1 | 148 | | | 9/30/2013 |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP... | -20.00 | 8/28/2013 | 8/28/2013 | 0 | 137 | | | 8/28/2013 |

| Organization | Supplier | Supplier Site | Item | Item Description | From Date | To Date | Capacity | Supplier Price | Last Changed Date/Time | Changed By | Supplier |
|--------------|----------------------|---------------|----------|------------------|-----------|------------|----------|----------------|------------------------|------------|----------|
| TST:RNA | Allied Manufacturing | BOLOGNA ERS | VV_PART2 | First component | 8/28/2013 | 10/1/2014 | 0.00 | 0.00 | 8/28/2013 | MFG | |
| TST:RNA | Alliance Systems | ALLIANCE-HQ | VV_PART2 | First component | 8/27/2013 | 8/31/2013 | 1.00 | 0.00 | 8/28/2013 | MFG | |
| TST:RNA | Alliance Systems | ALLIANCE-HQ | VV_PART2 | First component | 9/1/2013 | 9/30/2013 | 3.00 | 0.00 | 8/28/2013 | MFG | |
| TST:RNA | Alliance Systems | ALLIANCE-HQ | VV_PART2 | First component | 10/1/2013 | 10/31/2013 | 4.00 | 0.00 | 8/28/2013 | MFG | |
| TST:RNA | Alliance Systems | ALLIANCE-HQ | VV_PART2 | First component | 11/1/2013 | 11/30/2013 | 3.00 | 0.00 | 8/28/2013 | MFG | |
| TST:RNA | Alliance Systems | ALLIANCE-HQ | VV_PART2 | First component | 12/1/2013 | 12/31/2013 | 4.00 | 0.00 | 8/28/2013 | MFG | |

Oracle Rapid Planning – Key Features

- Analyze – By Changing EBS Transactional Data (Supply Disruptions)

Changes Suppliers and Supply Data in Base Line Plan

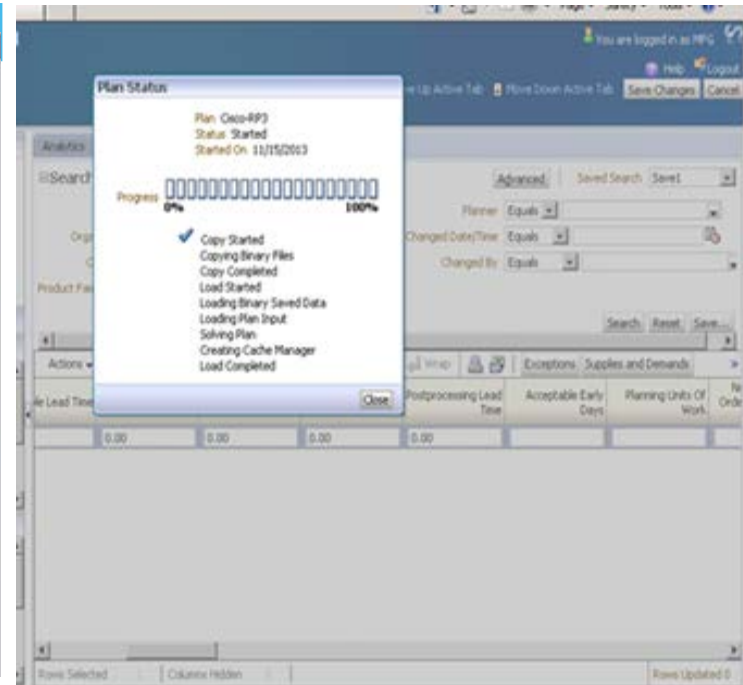
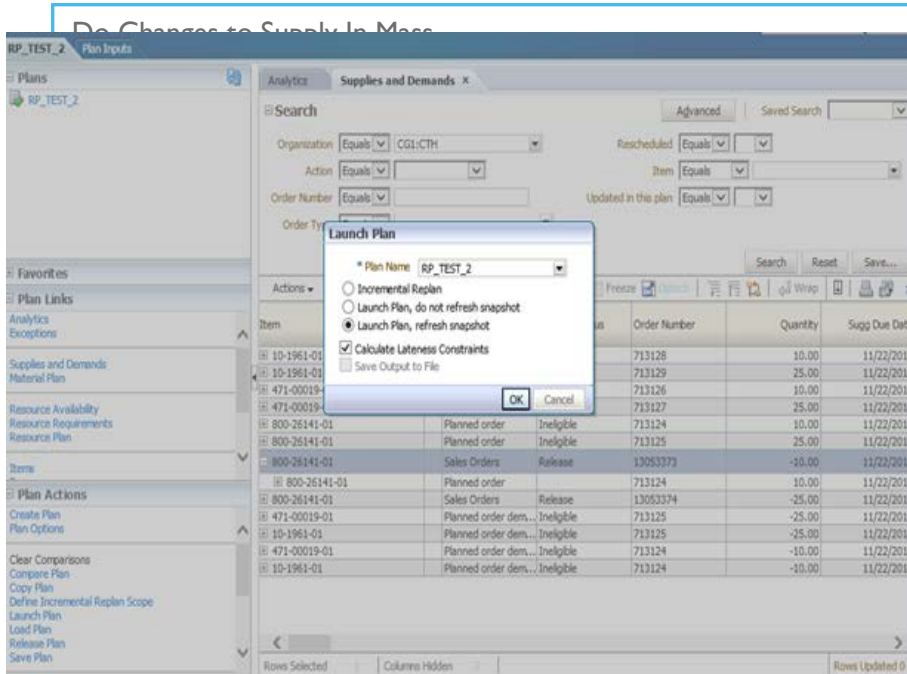
| Organization | Supplier | Supplier Site | Item | Item Description | From Date | To Date | Capacity | Supplier Price | Last Changed Date/Time | Changed By | Supplier |
|--------------|----------------------|---------------|----------|------------------|-----------|------------|----------|----------------|------------------------|------------|----------|
| TST:RNA | Allied Manufacturing | BOLOGNA ERS | VV_PART2 | First component | 8/28/2013 | 10/1/2014 | 0.00 | 0.00 | 8/28/2013 | MFG | |
| TST:RNA | Alliance Systems | ALLIANCE-HQ | VV_PART2 | First component | 8/27/2013 | 8/31/2013 | 1.00 | 0.00 | 8/28/2013 | MFG | |
| TST:RNA | Alliance Systems | ALLIANCE-HQ | VV_PART2 | First component | 9/1/2013 | 9/30/2013 | 0.00 | 0.00 | 8/28/2013 | MFG | |
| TST:RNA | Alliance Systems | ALLIANCE-HQ | VV_PART2 | First component | 10/1/2013 | 10/31/2013 | 4.00 | 0.00 | 8/28/2013 | MFG | |
| TST:RNA | Alliance Systems | ALLIANCE-HQ | VV_PART2 | First component | 11/1/2013 | 11/30/2013 | 3.00 | 0.00 | 8/28/2013 | MFG | |
| TST:RNA | Alliance Systems | ALLIANCE-HQ | VV_PART2 | First component | 12/1/2013 | 12/31/2013 | 4.00 | 0.00 | 8/28/2013 | MFG | |

Changes on Demand after Simulation run with Changed Supply Picture

| Item | Organization | Order Type | Order Number | Quantity | Sugg Due Date | Sugg Ship Date | Days Late | Order Priority | Revised Demand Date | Revised Demand Priority | Material Available Date |
|---------------|--------------|--------------|---------------------|----------|---------------|----------------|-----------|----------------|---------------------|-------------------------|-------------------------|
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -100.00 | 11/22/2013 | 12/17/2013 | 17 | 169 | | | 12/17/2013 |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -40.00 | 10/15/2013 | 11/5/2013 | 15 | 156 | | | 11/5/2013 |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -60.00 | 9/27/2013 | 10/22/2013 | 17 | 148 | | | 10/22/2013 |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -20.00 | 8/28/2013 | 8/28/2013 | 0 | 137 | | | 8/28/2013 |
| VV_FINAL ITEM | TST:RNA | Sales Orders | 10812.PICK-SHIP-... | -100.00 | 12/31/2013 | 1/10/2014 | 8 | 181 | | | 1/10/2014 |

Oracle Rapid Planning – Key Features

- Implement – By Changing Transactional Data (Supply Disruptions)



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Oracle Rapid Planning – Key Features

- Implement – Save the Changes to Simulation Set and Implement using collected data

Simulation Set

The screenshot shows the Oracle Rapid Planning web interface. A 'Save to Simulation Set' dialog box is open, allowing the user to save the current simulation set. The dialog has a text input field containing 'Simset LTI' and 'OK' and 'Cancel' buttons. The background interface shows search filters for Item, Planner, Organization, Last Changed Date/Time, Category, and Changed By. A table below the filters displays simulation parameters.

| Planning Method | Make/Buy | Max Order Quantity | Min Order Quantity | Fixed Lead Time | Fixed Order Quantity | Average Days of Supply Calculation Window | Variable Lead Time | Fixed Lead Time | Preprocessing Lead Time | Processing Lead Time | Postprocessing Lead Time |
|-----------------|----------|--------------------|--------------------|-----------------|----------------------|-------------------------------------------|--------------------|-----------------|-------------------------|----------------------|--------------------------|
| Planning | Make | | | 0.00 | 0.00 | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

The screenshot shows the Oracle Rapid Planning web interface with a 'Launch Plan' dialog box open. The dialog allows the user to launch a plan for 'TEST1' and includes options for 'Incremental Explain', 'Launch Plan, do not refresh snapshot', 'Launch Plan, refresh snapshot', and 'Calculate Lateness Constraints'. There is also a checkbox for 'Save Output to File'. The background interface shows search filters and a table with columns for planning method, make/buy, order quantities, lead times, and preprocessing/processing/postprocessing lead times.

| Planning Method | Make/Buy | Max Order Quantity | Min Order Quantity | Fixed Lead Time | Fixed Order Quantity | Average Days of Supply Calculation Window | Variable Lead Time | Fixed Lead Time | Preprocessing Lead Time | Processing Lead Time | Postprocessing Lead Time |
|-----------------|----------|--------------------|--------------------|-----------------|----------------------|-------------------------------------------|--------------------|-----------------|-------------------------|----------------------|--------------------------|
| Planning | Make | | | 0.00 | 0.00 | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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- Functional Comparison of ASCP & RP.

Case Study Conducted for Hi Tech Company

Rapid Planning as Proactive Backlog Management Tool

Major Requirements

- Ability to Reposition backlog based on changes to supply
- Re-Prioritize demand based on different situation and provide recommendation
- Apply custom business rules as part of backlog repositioning process to reduce nervousness
- Ability to Integrate Order Hold Management with Proactive backlog management.
- Automated Implementation of recommendations meeting established business logic
- Aid Planners with What-if Scenarios with the goal to Optimize revenue, Reduce Inventory and Improve customer satisfaction
- Maintain Data integrity with down stream and up stream systems

Case Study Conducted for Hi Tech Company

Rapid Planning as Proactive Backlog Management Tool

Results

- Nearly 3000 Pull in Recommendations every day at Ship Set Level based on changed and improved supply picture
- Different Simulation results on Same data set based on different business rules
- Able to accept custom business rules during planning process to reduce nervousness
- Able to integrate hold management with proactive backlog management with additional customization
- Seamless Integration with Oracle OM, ASCP and GOP, aids in automated release of recommendations into Actions
- Strong UI which are highly configurable and spreadsheet style workspaces resulting in improved planner productivity

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RP Functional Comparison with ASCP

Rapid Planning

Designed for rapid simulation

- Fast one-pass heuristic
- Simulation results in memory
- Quickly edit planning inputs (demands/supplies, BOMs, routings, etc.) for simulation
- UI: mass edits, plan compare

Multi-plan collaboration

- Merge changes from multiple plans into single master plan

Planning modes

- Unconstrained, Enforce Capacity Constraints
- Enforce Demand Due Dates after initial release
- No cost optimization

Limited process, project mfg support

ASCP

Batch planning oriented

- Multi-phase, math programming
- Simulation results flushed to database
- Make changes on transaction source instance, re-collect
- No mass edits; plan comparison requires APCC

Single-plan collaboration

- Multiple planners must work on same plan

Planning modes

- Unconstrained, Enforce Capacity Constraints, Enforce Demand Due Dates
- Optional cost-based optimization

Process manufacturing support

Project manufacturing support

Thank You

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