Visual Planner Introduction

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What is Visual Planner?

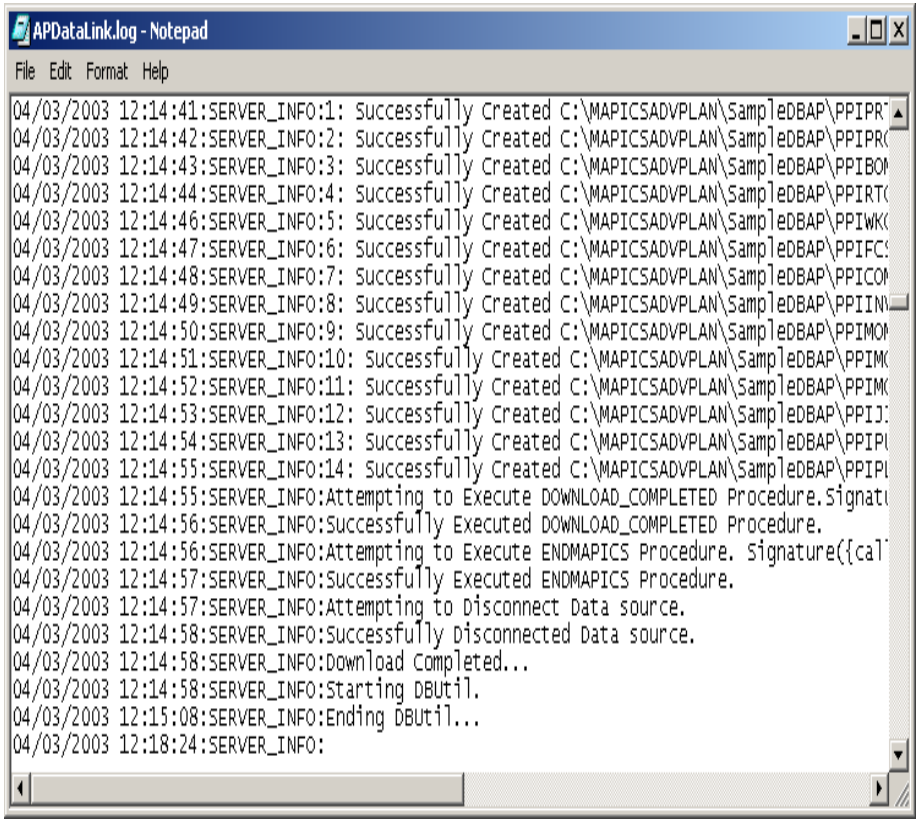
- Visual Planner is the next generation of MPSP, MRP and CRP
- VP is a graphical and interactive tool to develop the master schedule and material and production plans
- Provides **realtime** material and capacity testing of the plans

How does VP do this?

- Planning information is downloaded from XA to the planner's PC
  - PO's, CO's, Bills of Material, Routings, Forecasts, etc.
- Planning is done in seconds on the PC, eliminating job conflicts on the 400 and decreasing processing time. This allows for "more" planning runs.
- Final plan is uploaded to XA for execution

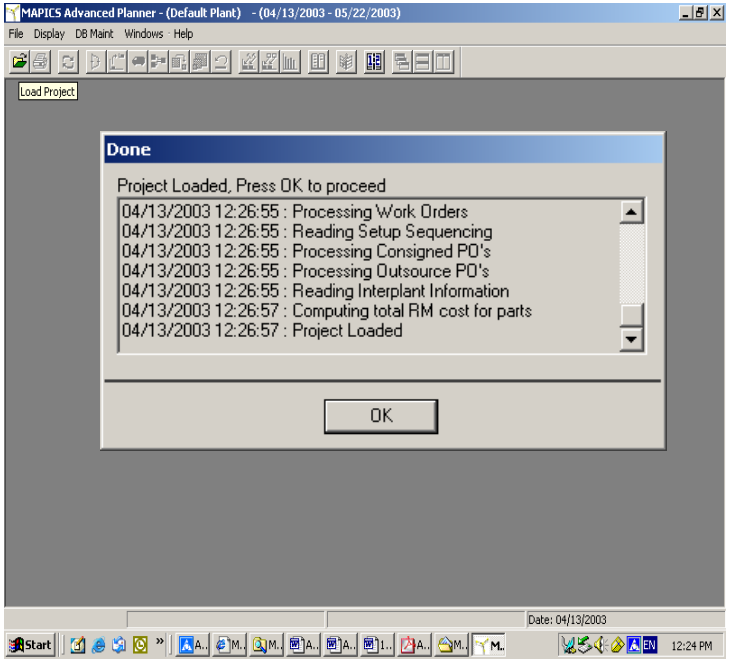
Visual Planner Process

- Downloading Data to the PC Engine
  - Pulls BOM, Route, Item, Item process, Item plan, Forecast, CO's and/or Manual Requirements



Visual Planner Process

- Generating the Plan
  - Takes the data in the files that were downloaded and creates the material and capacity plans
  - Forecast Consumption
  - Nets the Requirements against on hand & on order
  - Flags MO/PO/CO that do not support the plan
    - Plans Orders (PO, MO & Schedules)

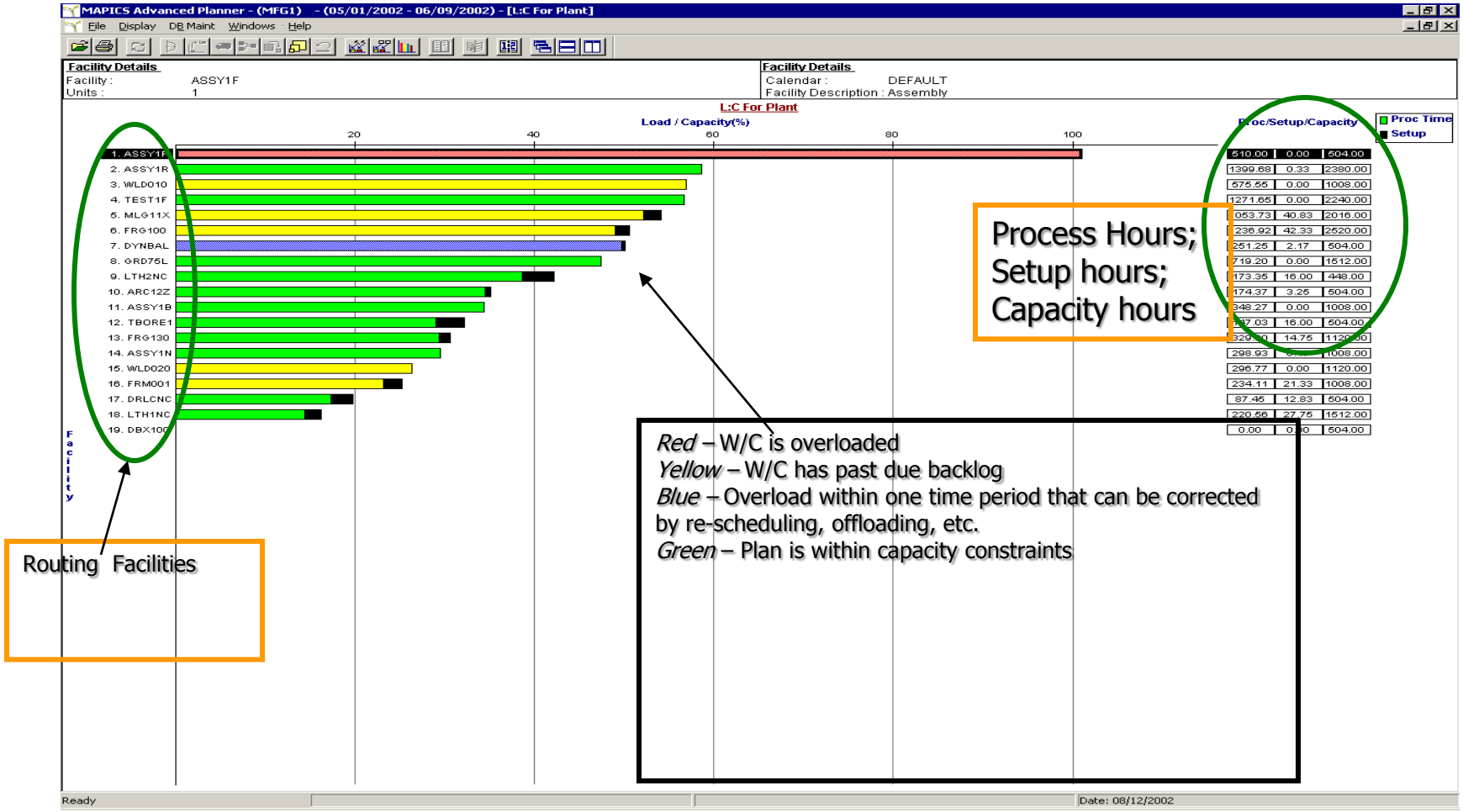


Visual Planner Process

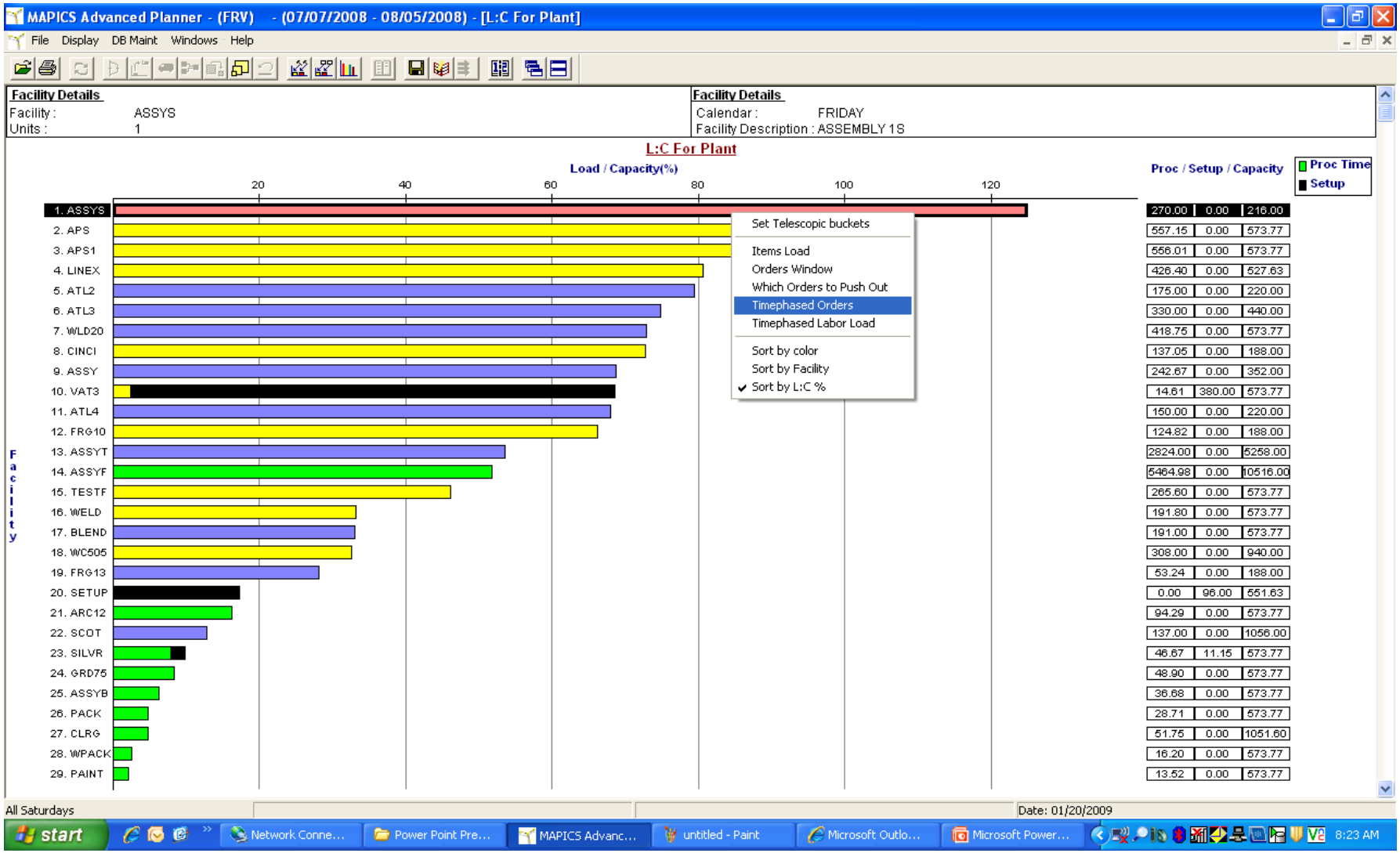
Manipulate the Plan

- View Load to Capacity Chart
- Level Load Capacity in each work center
  - Re-plans material as MO operations are moved
- View order load by day
- Other options include offloading orders to other work centers; outsourcing operations to vendors
- Use Alternate Routings (EPDM)
- Drill down to see supplying items plans (potential shortages) and up to view impact to finished goods

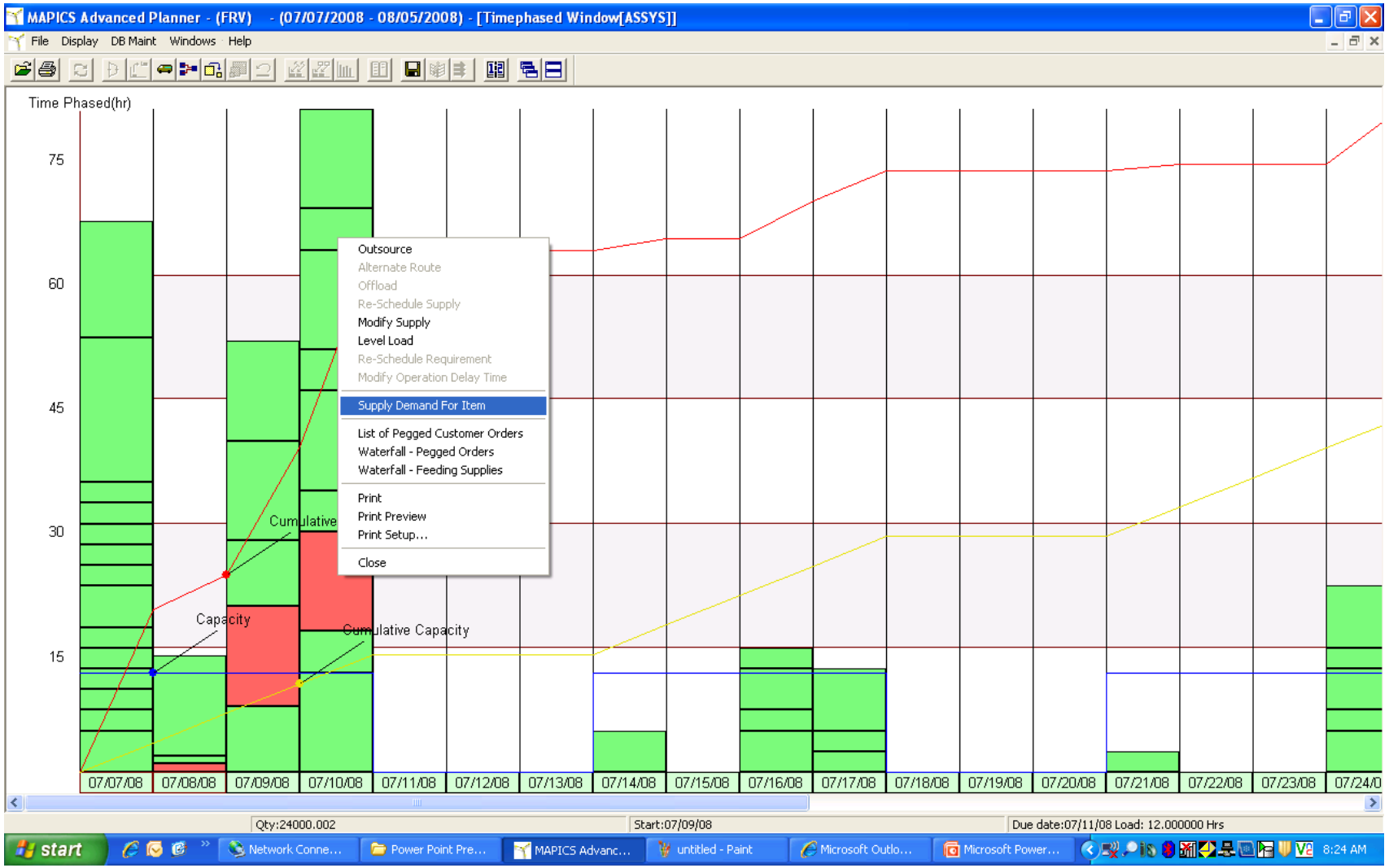
Load To Capacity Chart



Load To Capacity Drill Down



Work Center Time Phased Load



Supply/Demand for an Item

	Supply ID	Qty	Start Date	Due Date	Load	%	Sugg Due	Proj On Ha	Reqd Date	Reqd Qty	Peg To	Item	Ana/Cust	Due Date	Sugg Date
1	Plnd	35000.00	07/03/08	07/07/08	17.50	19.44	07/07/08	35000.00							
								25000.000	07/08/08	10000.000	Plnd	SALTS ASS	00077	07/09/08	07/11/08
3								20000.000	07/08/08	5000.000	Plnd	SALTS ASS	00077	07/09/08	07/11/08
4								15000.000	07/08/08	5000.000	Plnd	SALTS ASS	00077	07/09/08	07/11/08
5								10000.000	07/08/08	5000.000	Plnd	SALTS ASS	00077	07/09/08	07/11/08
6								5000.000	07/08/08	5000.000	Plnd	SALTS ASS	00077	07/09/08	07/11/08
7								0.000	07/08/08	5000.000	Plnd	SALTS ASS	00077	07/09/08	07/11/08
8	Plnd	100000.00	07/07/08	07/12/08	50.00	55.56	07/12/08	100000.00							
9								50000.000	07/14/08	50000.000	Plnd	SALTS ASS	00077	07/15/08	07/16/08
10								10000.000	07/14/08	40000.000	Plnd	SALTS ASS	00077	07/15/08	07/16/08
11								0.000	07/14/08	10000.000	Plnd	SALTS ASS	00077	07/15/08	07/16/08
12	Plnd	10000.00	07/14/08	07/14/08	5.00	5.56	07/14/08	10000.00							
13								0.000	07/15/08	10000.000	Plnd	SALTS ASS	00077	07/16/08	07/16/08
14	Plnd	15000.00	07/17/08	07/17/08	7.50	8.33	07/17/08	15000.00							
15								5000.000	07/18/08	10000.000	Plnd	SALTS ASS	00077	07/19/08	07/19/08
16								0.000	07/18/08	5000.000	Plnd	SALTS ASS	00077	07/19/08	07/19/08
17	Plnd	5000.00	07/21/08	07/21/08	2.50	2.78	07/21/08	5000.00							
18								0.000	07/22/08	5000.000	Plnd	SALTS ASS	00077	07/23/08	07/23/08
19	Plnd	15000.00	07/24/08	07/26/08	7.50	8.33	07/26/08	15000.00							
20								5000.000	07/28/08	10000.000	Plnd	SALTS ASS	00077	07/29/08	07/29/08
21								0.000	07/28/08	5000.000	Plnd	SALTS ASS	00077	07/29/08	07/29/08

Planned Orders

Required Date, Quantity and Source

Visual Planner Process

Upload to XA

- Reschedules open MO's/PO's/Rep schedules according to set up
- Updates the CO dates if specified in the upload options
- Updates MO Operations in the MO/REP operations as specified during planning
- Creates the Order Review file (PLNORD)

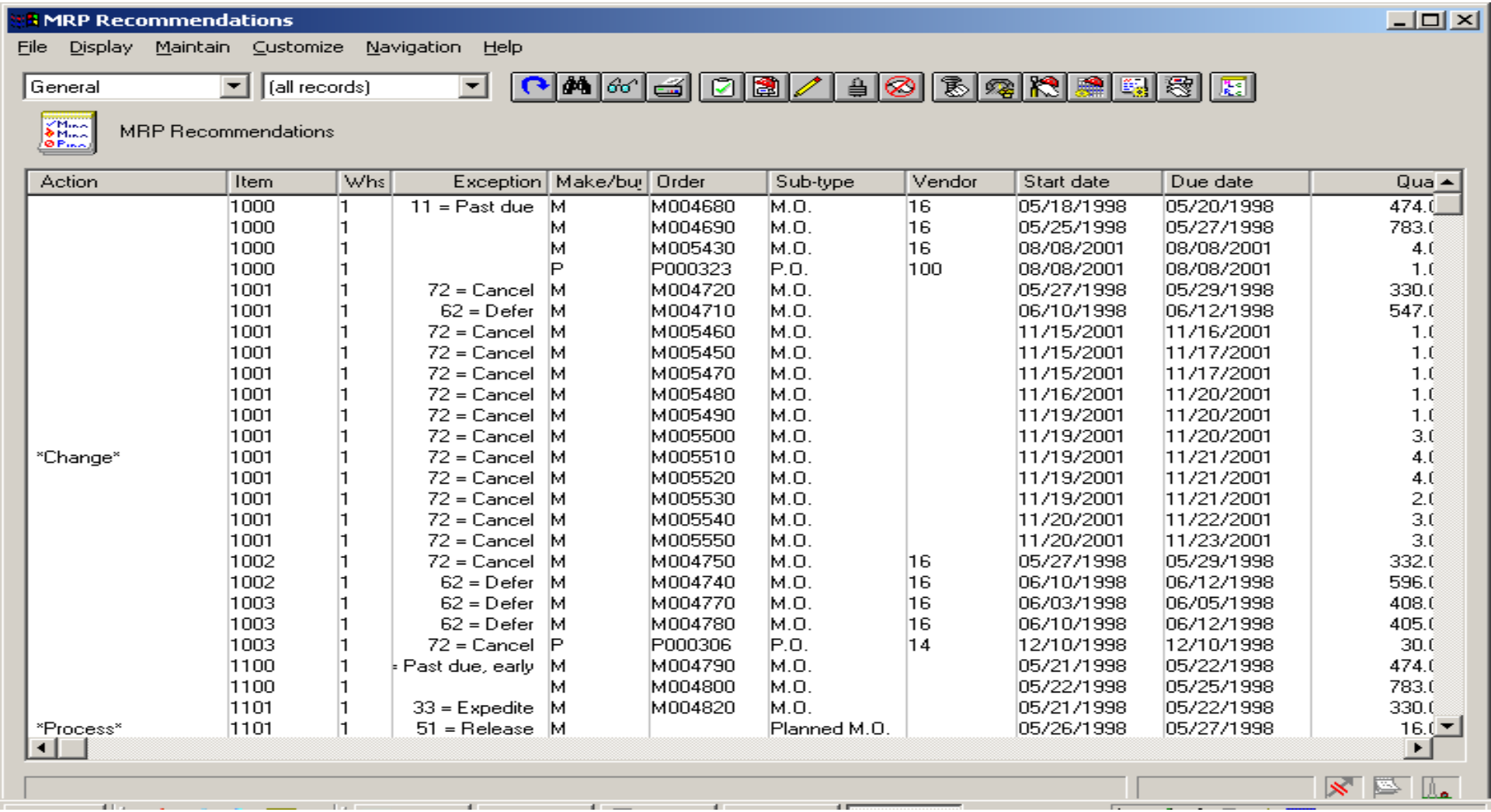
Visual Planner Process

Updates MRP planning work files:

- Requirements-unconsumed forecast and generated demand (REQMTS)
- Planned Orders-all supply orders, including open, firm planned and planned (PLNORD)
- Demand Ref-Demand information

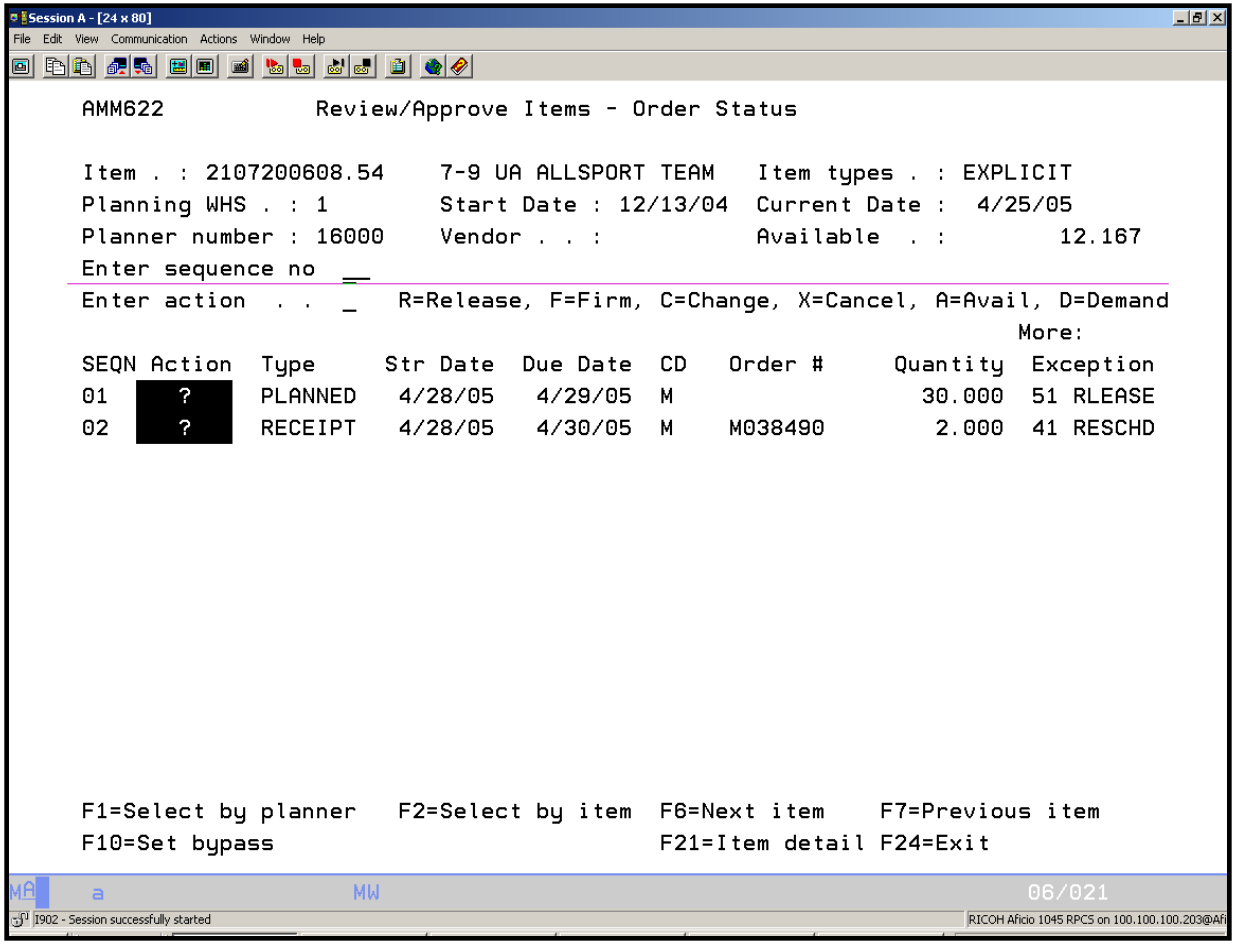
Use current screens/methods to create orders

Execute Plan using OBPM

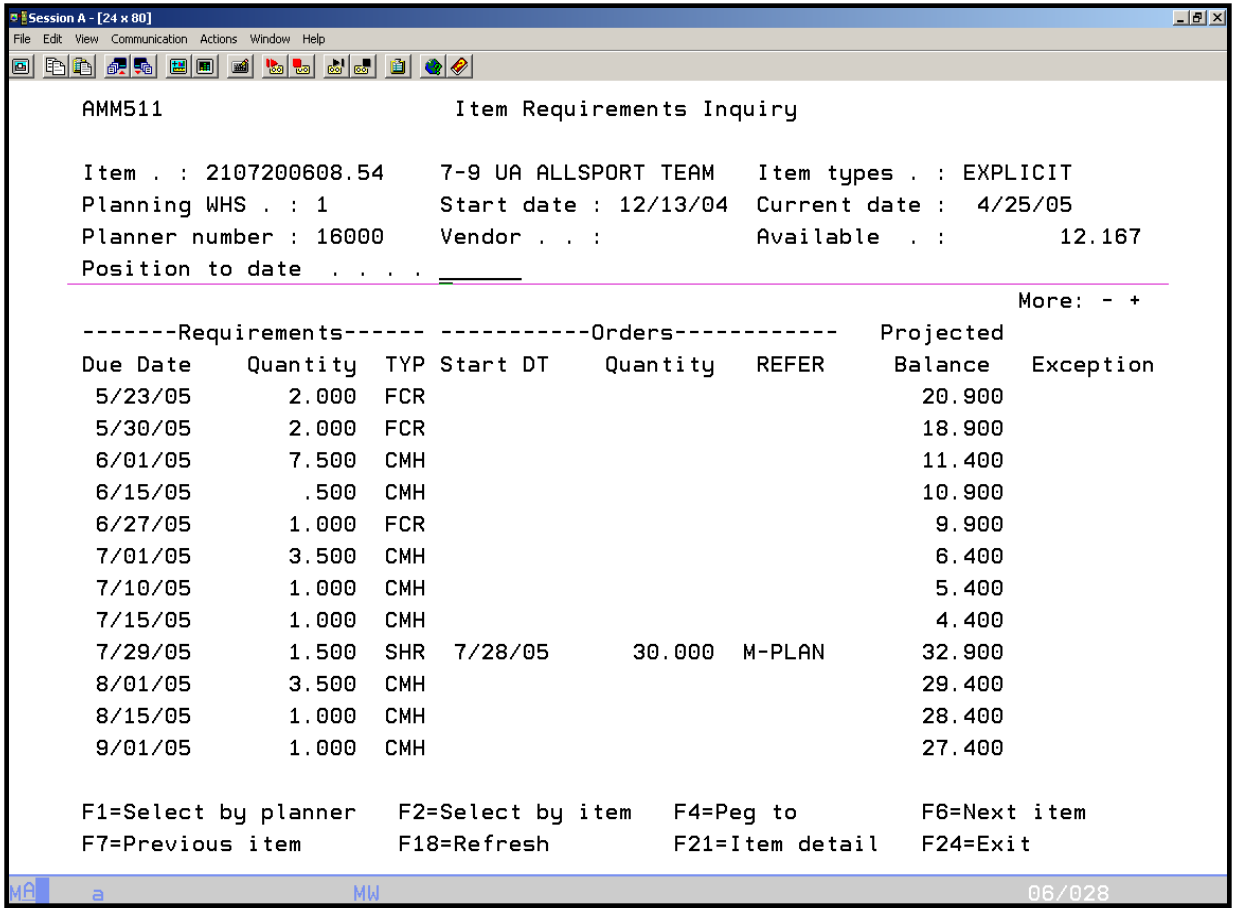


Action	Item	Whs	Exception	Make/bu	Order	Sub-type	Vendor	Start date	Due date	Qua
	1000	1	11 = Past due	M	M004680	M.O.	16	05/18/1998	05/20/1998	474.(
	1000	1		M	M004690	M.O.	16	05/25/1998	05/27/1998	783.(
	1000	1		M	M005430	M.O.	16	08/08/2001	08/08/2001	4.(
	1000	1		P	P000323	P.O.	100	08/08/2001	08/08/2001	1.(
	1001	1	72 = Cancel	M	M004720	M.O.		05/27/1998	05/29/1998	330.(
	1001	1	62 = Defer	M	M004710	M.O.		06/10/1998	06/12/1998	547.(
	1001	1	72 = Cancel	M	M005460	M.O.		11/15/2001	11/16/2001	1.(
	1001	1	72 = Cancel	M	M005450	M.O.		11/15/2001	11/17/2001	1.(
	1001	1	72 = Cancel	M	M005470	M.O.		11/15/2001	11/17/2001	1.(
	1001	1	72 = Cancel	M	M005480	M.O.		11/16/2001	11/20/2001	1.(
	1001	1	72 = Cancel	M	M005490	M.O.		11/19/2001	11/20/2001	1.(
	1001	1	72 = Cancel	M	M005500	M.O.		11/19/2001	11/20/2001	3.(
Change	1001	1	72 = Cancel	M	M005510	M.O.		11/19/2001	11/21/2001	4.(
	1001	1	72 = Cancel	M	M005520	M.O.		11/19/2001	11/21/2001	4.(
	1001	1	72 = Cancel	M	M005530	M.O.		11/19/2001	11/21/2001	2.(
	1001	1	72 = Cancel	M	M005540	M.O.		11/20/2001	11/22/2001	3.(
	1001	1	72 = Cancel	M	M005550	M.O.		11/20/2001	11/23/2001	3.(
	1002	1	72 = Cancel	M	M004750	M.O.	16	05/27/1998	05/29/1998	332.(
	1002	1	62 = Defer	M	M004740	M.O.	16	06/10/1998	06/12/1998	596.(
	1003	1	62 = Defer	M	M004770	M.O.	16	06/03/1998	06/05/1998	408.(
	1003	1	62 = Defer	M	M004780	M.O.	16	06/10/1998	06/12/1998	405.(
	1003	1	72 = Cancel	P	P000306	P.O.	14	12/10/1998	12/10/1998	30.(
	1100	1	= Past due, early	M	M004790	M.O.		05/21/1998	05/22/1998	474.(
	1100	1		M	M004800	M.O.		05/22/1998	05/25/1998	783.(
	1101	1	33 = Expedite	M	M004820	M.O.		05/21/1998	05/22/1998	330.(
Process	1101	1	51 = Release	M		Planned M.O.		05/26/1998	05/27/1998	16.(

Green Screen Execution



MRP Requirements inquiry



VP/MRP Similarities

- Both use all the planning modifiers in the Item Balance/Plan record
- Both use the MRP Execution Options for re-scheduling, auto-release, etc.
- Both use the MRP Horizon Dates
- Both have direct or indirect interface to Mapics Forecast module
- Both use the Manufactured due date from the customer orders for planning

VP vs. MRP

- An MRP generation is performed by a BOM explosion and netting routine usually overnight
- *With Visual Planner NO AS400 MRP generation is ever necessary. The VP engine performs the multi-level planning function*

- MRP has multi-planning warehouse capabilities
- *With VP you create a separate database for each warehouse that has a Planning run. Multiple warehouses can still be consolidated.*

VP vs. MRP cont'd

- MRP/CRP uses Mapics calendars
- *VP has its own calendars within the database. These calendars hold hours of operation per day. VP allows for an unlimited number of calendars and you associate multiple work centers to a calendar*

- MRP has no easy "what if" capability short of a new MRP generation
- *VP has powerful "what if" capability directly with the VP access database on the PC*

VP vs. MRP cont'd

- MRP interfaces with MPSP
- *VP has its own Master Schedule Routine*

- MRP uses Lead Time to calculate start date
- *VP uses backward scheduling and the times in the routing to calculate start date. If 'Operation Where Used' is entered in the BOM, material is planned based on the Operation Start Date.*

VP vs. MRP cont'd

- MPSP uses the greater of Customer Order or Forecast
- *VP nets the CO's against the Forecast and plans with the CO's and Net Forecast*

- MRP assumes infinite capacity
- *VP plans the work load in each work center for capacity review prior to accepting the plan. Even though it will 'overload' a work center, the Master Scheduler can move load and VP adjusts other work centers and material to accommodate the move.*

VP vs. MRP cont'd

- MRP provides a warning if a planned order quantity exceeds the Maximum
- *VP uses the Maximum to create multiple orders due on the same day for the Max quantity (or less)*

- MRP plans an order to be due the same day as the requirement
- *VP plans an order to be due the day before the requirement (dependent on the config.ini setting)*

VP vs. MRP cont'd

- MRP plans orders to the day/date
- *VP can plan to the hour and minute*

- MRP has no view for load on a workcenter
- *VP shows the load each MO or Schedule will place on a work center or production line. If you move the load to a different day, VP will re-schedule the upstream & downstream operations and re-plan the material (assumes "Operation Where Used" in the BOM is completed)*

VP Extras

Forecast consumption

Forecast can be consumed in three ways:

- Individual Item: The sales of each item consume the item forecast
- An item and its parents: If many possible finished product configurations exist, made from a small number of components, *you can forecast at the component level rather than the finished product* level. The sales of the item and any parent consume the item forecast
- Planning bill: Identify an item as a planning bill item and enter forecasts for the item. Forecast is consumed by end item and matching configurations in the Bill of Material

Visual Planner Demonstration

VP ELEMENTS OF SUCCESS

Valid Master Schedule/Forecast

- The Master Schedule drives all material and capacity requirements
- A number of companies will use the sales forecast as their master schedule
  - VP will net sales against the forecast to use Customer Orders and the balance of the forecast to drive planning
- The Master Schedule should be an accurate statement of what you intended to produce

Accurate Bill of Material

- Planned orders at one level access the bill of material to create requirements at the next level of the bill
- The bill of material should match the way the product is made on the shop floor
- Lead Time Adjustment field in the bill of material can affect the required date of the component
- Operation Where used in the bill of material will cause the material for an operation to be required on the operation start date

Correct Calendars

- VP holds an unlimited number of Calendars
- Calendars are linked to Work Centers/Facilities
- Calendars are used to calculate available capacity and then compare that to load
- Calendars need to show the correct number of hours per day
- Calendars need to show holidays & plant shutdowns

Accurate Routing/Facilities

- VP uses backward scheduling to calculate individual operation (from the routing) load in a work center
  - MO Due Date is the due date of the last operation
  - VP will use the times in the routing and the facility's calendar to determine operation start
  - Start date of the first operation becomes the start date for the MO
- Prime Load Code in the Facility determines, per operation, whether VP uses Machine or Labor time to calculate load

Timely Labor Reporting

- Reporting against MO operations will reduce the load in the work center
- Since VP is comparing load to capacity it is important to report labor against operations or, at a minimum, operation complete
- A completed operation will no longer display a load in the capacity analysis for the work center

Accurate Quantities on Hand

- VP will net the requirements against the on hand inventory
- Inaccurate on hand balances will cause VP to over/under plan orders for an item

Valid Planning Codes

- VP uses the codes in the Item Balance/Plan records to calculate the planned order quantity
  - Order Policy Code (OPC)
  - Days Supply (OPC = G)
  - Minimum/Multiple/Maximum Order Quantity
  - Fixed Order Quantity (OPC = D or H)
- Codes need to reflect the correct quantity for VP to plan for each item

Valid Dates on Orders

- All requirements are prioritized by date in VP
- VP expects orders to start on their start date and finish on their due date
- The sub-assembly order will be planned to be completed the day before the sub-assembly is required for the next level of production
- Vendors and Shop Floor Production need to manage their parts to the due dates on the orders

Correct Lead Times for Purchased Parts

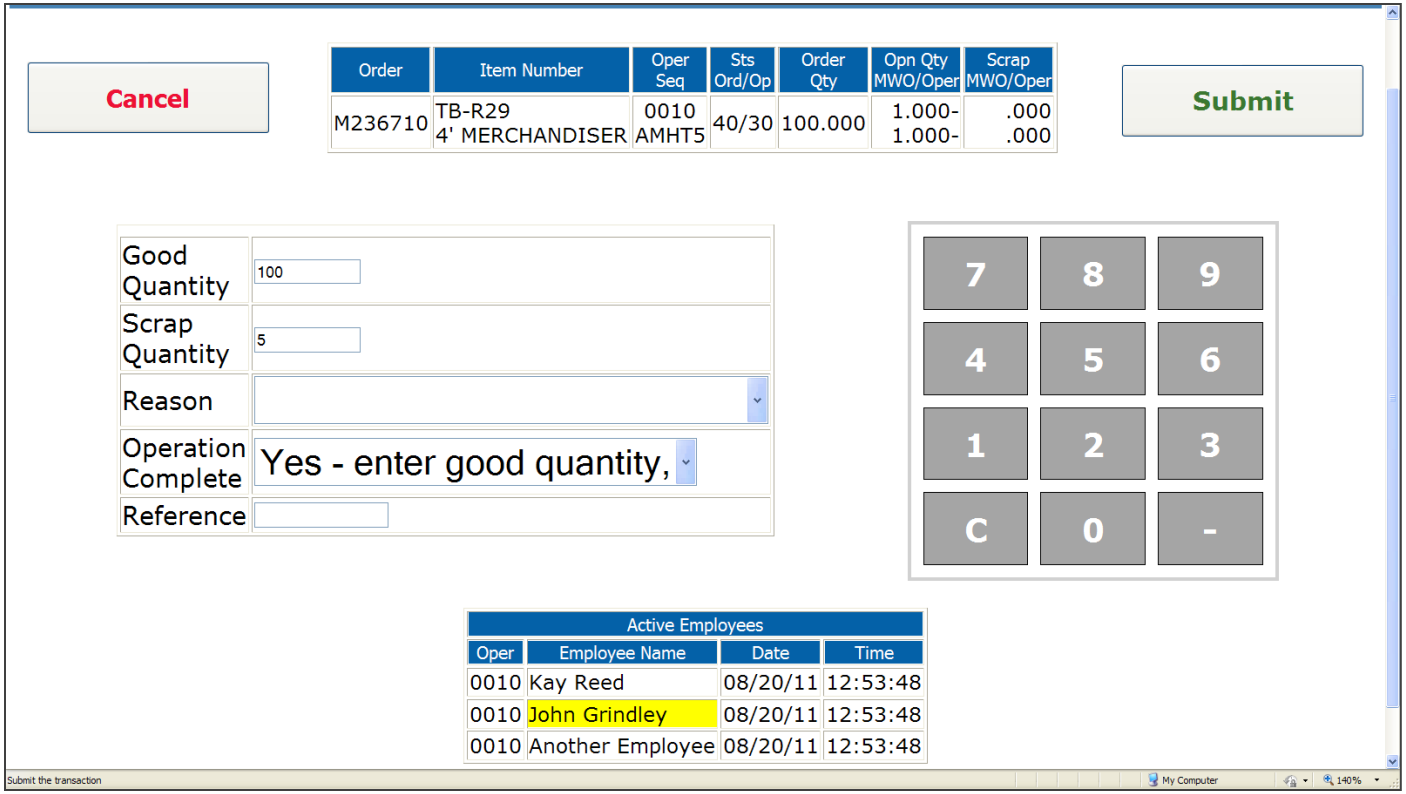
- Although VP uses Routing times for make items, it still uses the purchase lead times to calculate the start date of a P-Plan order
- Purchase Lead Times need to be an accurate representation of the time to place a PO and receive the goods:
  - Review LT: internal review of the planned order
  - Vendor LT: vendor's quoted delivery time
  - Safety LT: Additional lead time
  - Adjustment LT: Dock to Stock processing time

VP Implementation Considerations

- If you are a good MRP user, you are 75% implemented already
  - Requires good routings + labor reporting
- Implementations range based on ‘MRP readiness’ and resource availability, generally 2-6 months
- CISTECH can provide full project planning, education, and implementation services.

VP Implementation Considerations

- CISTECH Shop Floor reporting solution
  - Intranet based labor and production reporting



VP Benefits

- Improved flexibility and agility to react to changes in customer demand
- Increased efficiency of all users involved in planning process
- Improves capacity utilization
- Reduced inventory levels by buying and making to customer demand
- Reduced expediting costs through improved planning

Questions