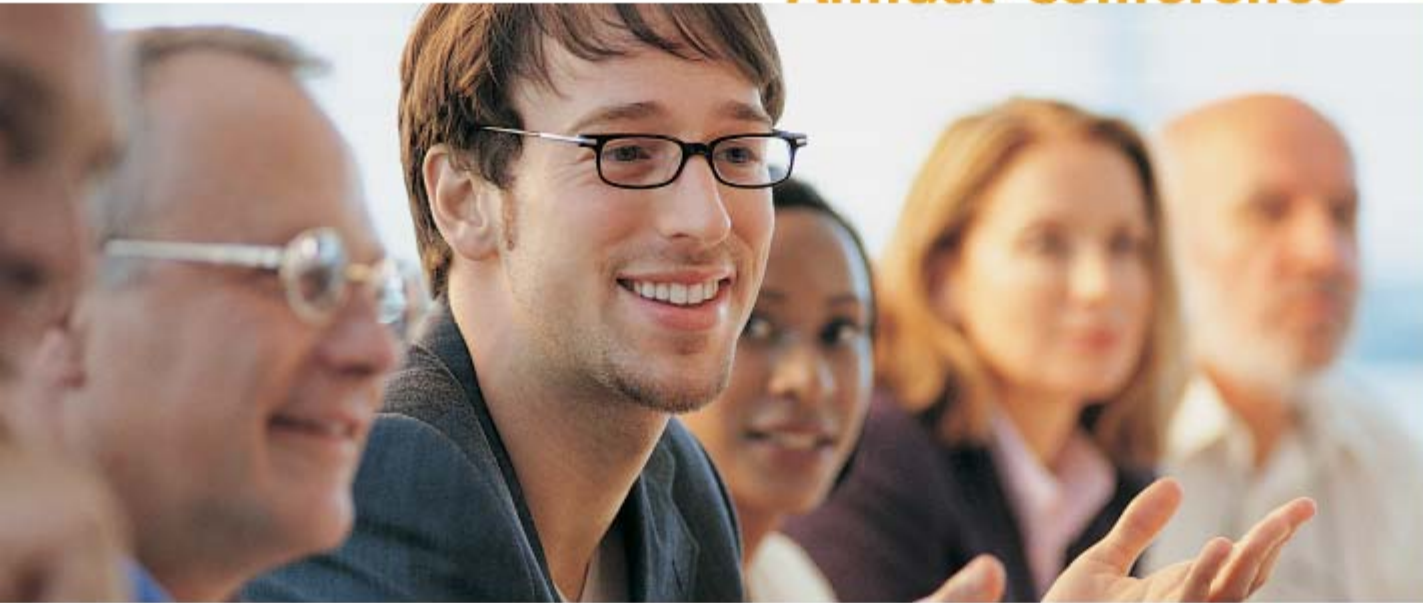


# 2006 ASUG Annual Conference



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Orlando, Florida, USA

## Budget-constrained Inventory Planning

Richard Heimburger, Dickinson + Associates



EDUCATING

NETWORKING

INFLUENCING

# Learning Points

- Simple and quick master data changes can completely change the way procurement proposals are executed.
- Standard SAP does not provide availability control on inventory purchases, which presents a conflict with government agencies since all procurement is budget constrained.
- The key task is to organize material procurement according to the characteristics most important in the decision-making process, for the Navy this was demand.

# Key Supply Chain Accomplishments at SMART

- ROI - Fiscal Year 2004:
  - NADEP North Island - \$26.8 million (pre-SAP \$45 million)
- Key metrics, Effectiveness and Sales/Obs slightly higher than pre-Go Live within one year.
- Common business process established
- User group created
- More precise requirements – forecast and MRP run more frequently due to increased productivity

# Key Terms

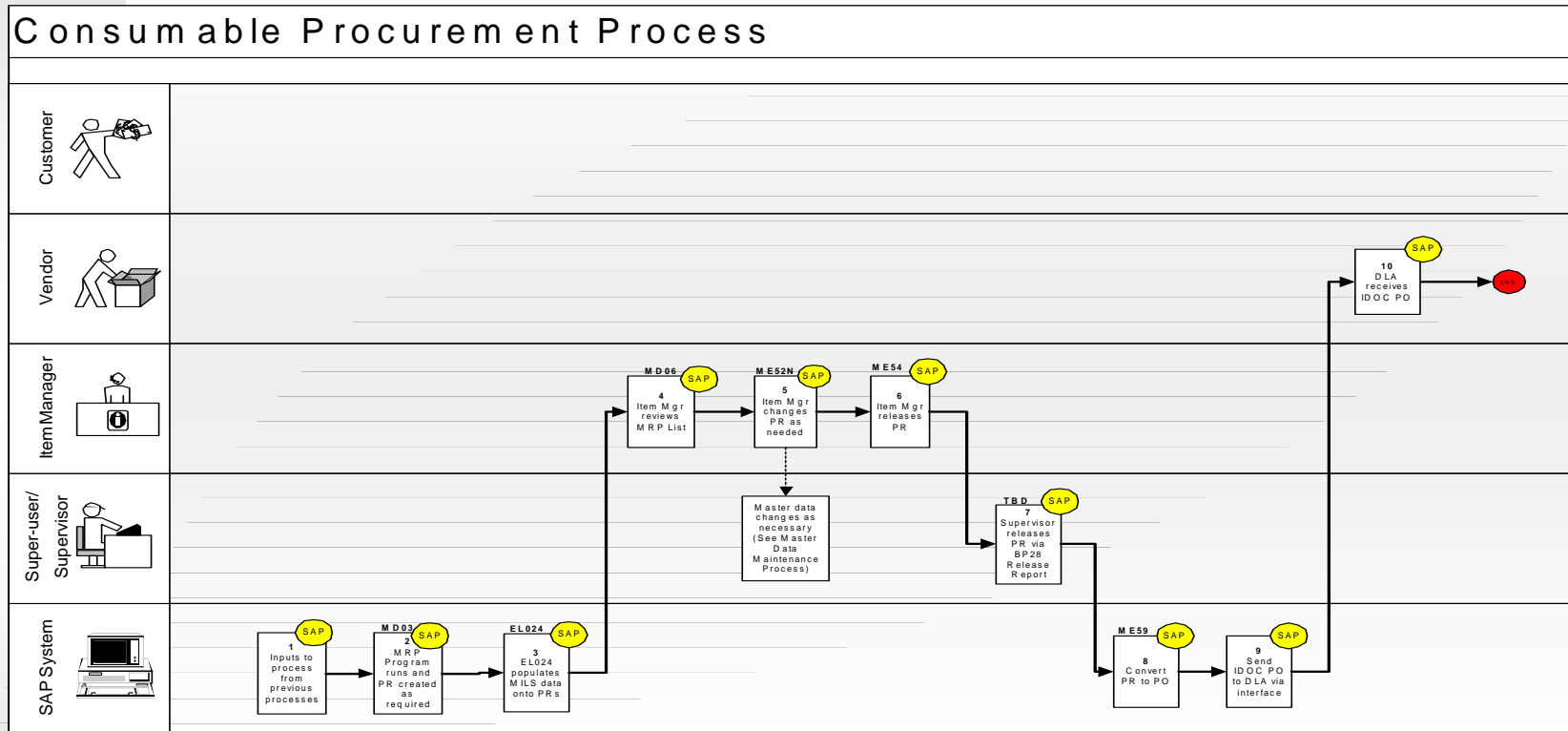
- **Consumable Item**  
A material that is intended for one-time use, i.e. an air filter.
- **Repairable Item**  
A material that can be restored to its original state through maintenance, i.e. an engine starter.

# NAVSUP Inventory Management Major Processes



NAVSUP Inventory Management Process				
DAILY	Consumable Replenishment	Repairable Replenishment	Customer Fulfillment	BP28 Status of Funds
WEEKLY	Stock Posturing			
MONTHLY	Demand Forecasting	Range-add/Withdraw	Change Notice	
QUARTERLY	Material Re-categorization	Customer Forecast Processing for Consumables	Customer Forecast Processing for Repairables	Excess Inventory
AD HOC	Manual PR Processing	Master Data Maintenance	LLND to NIIN	

# NAVSUP Consumable Procurement Process



## Consumable Replenishment Process

Is a daily process that encompasses planning and procurement processing for consumable materials. In the beginning of the process, SAP's MRP program runs and generates purchase requisitions based on inventory shortages. The Item Manager and Supervisor release the purchase requisition. It is then automatically converted into a purchase order.

# Problem & Solution

## **Problem**

The SAP System was producing procurement proposals that far exceeded available budget.

## **Solution (immediate-term)**

1. Using mainly master data, provided a model for prioritizing buys for those materials with high demand. The model and associated master data gave the users the ability to focus their efforts on stocking the most important materials.
2. Gave tool to supervisors to allow them to release buys according to available budget.

## **Optimization (long-term)**

Automation of master data maintenance and tool for automatically adding and deleting materials from range of coverage

# Key SAP Functionality

- Gave users ability to focus on the most important procurement proposals
  - MRP Categorization organized materials according to demand. Updated material master with MRP Controller.
  - Proper customization of the Stock Requirements List allowed users to be more productive.
- Gave users the ability to forecast and plan materials differently based on demand.
  - MRP Categorization updated material master with MRP and forecast profiles.
- Gave users tools to compare the recommended buy against available budget
  - Release strategies and PR Release Report gave supervisor ability to control which PRs converted to POs.
- Automated the process of adding or withdrawing materials from the range of coverage

# Demand-based Procurement Model



Stock Status	12 mo demand	3 mo demand	Material Category
<b>STOCKED</b>	8-12 periods of demand in 12	2 or more demands in last 3	HV1
		Less than 2 demands in last 3	HV2
	5-7 periods of demand in 12	2 or more demands in last 3	MV1
		Less than 2 demands in last 3	MV2
	2-4 periods of demand in last 12	2 or more demands in last 3	LV1
		Less than 2 demands in last 3	LV2
0-1 periods of demand in last 12	N/A		
<b>Non-Stocked</b>	0 periods of demand in last 12	N/A	001

- Non-stocked means that MRP is deactivated and that material is no longer procured (out of the range of coverage)
- Item Managers prioritize purchase requisitions according to these material categories
- Gave the ability to segregate materials in order to treat them differently

# Material Master Data Control



MRP & Forecast Profiles controlled the population of important fields

## Change MRP Profile: Selection Screen

Data screen 1 | Data screen 2

MRP1 Profile description: MRP for Consumables - North Island

Checkboxes for MRP profile

Selected fields will be copied to the profile	Write-protected in matl maintenance	Only default value in matl maintenance
MRP type	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MRP controller	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ABC indicator	<input type="checkbox"/>	<input type="checkbox"/>
Planned delivery time in days	<input type="checkbox"/>	<input type="checkbox"/>
In-house production time	<input type="checkbox"/>	<input type="checkbox"/>
Scheduling Margin Key for Floa	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Dependent requirements ind. fo	<input type="checkbox"/>	<input type="checkbox"/>
Indicator for Requirements Gro	<input type="checkbox"/>	<input type="checkbox"/>
Safety stock	<input type="checkbox"/>	<input type="checkbox"/>
Reorder point	<input type="checkbox"/>	<input type="checkbox"/>
Lot size (materials planning)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rounding value for purchase or	<input type="checkbox"/>	<input type="checkbox"/>

Purchase order text | MRP 1 | MRP 2 | MRP 3 | MRP 4 | Planning/Local Data

Material: 00000213623 BOLT, MACHINE  
Plant: CA01 Regional Supply Office Norfolk

General data

Base unit of measure	EA	each	MRP group	
Purchasing group	A00		ABC indicator	
Plant-sp.matl status			Valid from	

MRP procedure

MRP type	VM	Automatic reorder point plng	
Reorder point	1,105	Planning time fence	
Planning cycle		MRP controller	001

Lot size data

Lot size	DY	Dynamic lot size creation	
Minimum lot size		Maximum lot size	
Fixed lot size		Maximum stock level	
Ordering costs	262.42	Storage costs ind.	1

The fields highlighted in gray are write-protected

# Item Manager Cockpit



Stock/Requirements List: Material List

Selected stock/requirements lists | Define traffic light | Exception groups

Plant: CB05 FISC NADEP N.I.  
MRP controller: HV2 High Volume 2

Light	Material	MRP area	Material description	A.	Supply	1stR...	2nd	1	2	3	4	5	6	7	8	Plan...	B...	MTyp	P...	S...	A.	M...	C...	C...
●●●	00001010971	CB05	BEARING,BALL,ANNULA	<input type="checkbox"/>	1.0-	1.0-	1.0-									0	EA	NIIN	F	A	PD	999	✓	
●●●	00010978562	CB05	CATCH,FLUSH	<input type="checkbox"/>	1.0-	1.0-	1.0-							1		0	EA	NIIN	F	B	PD	999	✓	
●●●	00011232992	CB05	SEMICONDUCTOR DEV...	<input type="checkbox"/>	1.0-	1.0-	1.0-			1				1		0	EA	NIIN	F	A	PD	999	✓	
●●●	00011839768	CB05	BAG,PLASTIC	<input type="checkbox"/>	1.0-	1.0-	1.0-				3					5	BX	NIIN	F	B	PD	999	✓	
●●●	00012887650	CB05	SEAL ASSEMBLY	<input type="checkbox"/>	1.0-	1.0-	1.0-							2		0	AY	NIIN	F	B	PD	999	✓	
●●●	00005202289	CB05	POINTER,DIAL	<input type="checkbox"/>	1.0-	999.9	1.0-							1	2	0	EA	NIIN	F	C	PD	999	✓	

- Traffic Lights alert to inventory shortages
- Receipt Days' Supply indicates how long inventory will last
- Exception Messages explain status of procurement

- Ability to run MRP, release PRs, and run the PR Release Report from buttons through the use of a navigation profile

Stock/Requirements List as of 10:41 Hrs

Show overview tree | MRP | Indep Req | PR Release | BP28 Rel Rpt | EM002

Material: 00001010971 BEARING,BALL,ANNULA  
MRP area: CB05 FISC San Diego  
Plant: CB05 MRP type: PD Material type: NIIN Unit: EA

Date	MRP ...	MRP element data	Reschedul...	E...	Rec./reqd.qty	Available qty	Sto...
12/13/2004	Stock			96		0	
12/13/2004	SafeSt	Safety stock			5-	5-	
10/08/2004	PRsupp	0011090215/00010		10	44	39	AST6
11/01/2004	PRsupp	0011090216/00010		07	39	78	AST6
12/01/2004	PRsupp	0011090217/00010		07	39	117	AST6
12/13/2004	ForReq	M 12/2004			39-	78	

# PR Release Report

## BP28 Release Report

Release and Convert PR   Select All   Deselect All   Sort ascending   Sort Descending

**BP-28 RELEASE REPORT**

PRs to be released for CA01      Total value of selected PRs \$      37,105.22      Balance of Avail. Funds \$      962,894.78

Sel	PR No.	Item	Material	Description	COG	FSC	Quan	Price	Value
<input checked="" type="checkbox"/>	10003008	00010	000011548	PARKA,WET WEATH	9D	8405	2.000	35.65	71.30
<input type="checkbox"/>	10010402	00010	000011549	PARKA,WET WEATH	9D	8405	1.000	35.65	35.65
<input type="checkbox"/>	10011152	00010	000019590	WIRE ROPE ASSEM	96	4010	78.000	125.39	9,780.42
<input checked="" type="checkbox"/>	10003093	00010	000036640	SWITCH,PUSH	9N	5930	4.000	385.77	1,543.08

Supervisor selects PRs and presses release button

Funds Available

1. The final release of the PR is set
2. The PR is converted into a Purchase Order

# Optimization

## MRP Re-categorization Program

Previous 12 Months Demand	Previous 3 Months Demand	MRP Contrlr	Forecst Profile	MRP Profile
8	2	HV1	9NI	MRP1
8	0	HV2	WA1	MRP1
5	2	MV1	LOW1	MRP1
5	0	MV2	WA1	MRP1
2	2	LV1	LOW1	MRP1
0	0	LV2	WA1	MRP1

- Automated master data maintenance according to a material's demand
- MRP Controller is changed on the material master record according to demand
- Both Forecast and MRP Profile is updated on the material master

# Optimization

## Range-add/Withdraw

- MRP Re-categorization amended to include range-withdraw function (-> 001)
- Added Range-add Report/Program giving the supervisor a utility through which to evaluate those materials meeting specific criteria that were candidates to be added to the range of coverage.

# Key Learnings

- Simple master data changes and a couple of automation tools can produce drastic results
- Standard SAP does not provide availability control on inventory purchases, which presents a conflict with government agencies since all procurement is budget constrained.
- The key task is to organize material procurement according to the characteristics most important in the decision-making process, for the Navy this was demand.

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