INFOCOST
Deliver Business Value

APPROACH DOCUMENT FOR
PRODUCT COSTING & INVENTORY VALUATION

OBJECTIVE:

The objective of this approach paper is to complete the inventory valuation from SAP system. Basis for valuation of inventory can be the periodic weighted average cost, standard cost of product, weighted average cost and net realizable value. The basis of inventory valuation may vary from business to business or product to product for entire group. Here our objective is to cover entire business scenario and product range from the perspective of inventory valuation. Based on finalized basis of valuation for respective business and product solution will be designed and will be applicable uniformly across the group.

BASIS OF VALUATION:

As we know the basis of valuation for inventory can be as under;

1. Standard cost of product at the start of month
2. Standard cost of product at the end of month
3. Weighted average cost/Moving average price
4. Periodic weighted average cost, (Actual Cost) and
5. Net realizable value

Now we will elaborate each of the basis is detail so that we will be able to decide applicability in various business and product. For the purpose of better understanding let me take a simple example for explanation;

Following explanation is for point no.1, 2 and 3. Here concept of using standard cost for product costing and inventory valuation is explained:

Example:

RAW MATERIALS

Date		Price	Nature	
	Raw Material	WAC/MAP	Procured	
1to 30thApril	RM-Stock			
		Rate / Unit	Quantity	Value
1st April	RM-Opening	100.00	500.00	50,000.00

By Sarat Agrawal

APPROACH DOCUMENT FOR
PRODUCT COSTING & INVENTORY VALUATION

1to 30thApril	RM-Receipt	120.00	500.00	60,000.00
1to 30thApril	Sub Total		1,000.00	110,000.00
1to 30thApril	Average price	110.00		
1to 30thApril	RM Cons	110.00	405.00	44,550.00
	Closing stock	110.00	595.00	65,450.00

SEMI FINISHED MATERIALS

Date		Price	Nature				
	SFG Material	Standard	Produced				
1st April	Std.Cost Comp.						
		Rate	Std.Qty	Cost			
1st April	Raw Materials	100.00	2.00	200.00			
1st April	Activity Cost	50.00	1.00	50.00			
	COP / Unit			**250.00**			
30th April	Std.Cost Comp.						
		Rate	Std.Qty	Cost			
30th April	Raw Materials	110.00	2.00	220.00			
30th April	Activity Cost	55.00	1.00	55.00			
	COP / Unit			**275.00**			
1to 30thApril	**SFG Production Order for 200 Units**						
		Std.Rate	Std.Qty	Cost	Actual Rate	Actual Qty	Actual cost
	RM	100.00	400.00	40,000.00	110.00	405.00	44,550.00
	Act.Cost	50.00	200.00	10,000.00	50.00	205.00	10,250.00
	Act.Cost Revl	-			5.00	205.00	1,025.00
	Cost of Prod			**50,000.00**			**55,825.00**
	Goods Rec						**50,000.00**
	Variance						

**APPROACH DOCUMENT FOR
PRODUCT COSTING & INVENTORY VALUATION**

							5,825.00
	COP / Unit			**250.00**			**279.13**
1to 30thApril	SFG-Stock						
		Rate	Qty	Value	Difference		
1st April	Opening Stock	250.00	100.00	25,000.00	-		
1to 30thApril	Production	250.00	200.00	50,000.00	5,825.00		
	Sub Total		**300.00**	**75,000.00**	**5,825.00**		
	SFG-Cons	250.00	156.00	39,000.00			
	SFG-Sale	250.00	40.00	10,000.00			
	Closing Stock	275.00	104.00	28,600.00	2,600.00		

FINISHED MATERIALS

Date		Price	Nature				
	FG	Standard	Produced				
1st April	Std.Cost Comp						
		Rate	Std.Qty	Cost			
1st April	SFG Material	250.00	1.00	250.00			
1st April	Activity Cost	100.00	1.00	100.00			
	COP / Unit			**350.00**			
30th April	Std.Cost Comp						
		Rate	Std.Qty	Cost			
30th April	SFG Material	275.00	1.00	275.00			
30th April	Activity Cost	110.00	1.00	110.00			
	COP / Unit			**385.00**			
1to 30thApril	**FG Production Order for 150 Units**						
		Std.Rate	Std.Qty	Cost	Actual Rate	Actual Qty	Actual cost
	SFG Material	250.00	150.00	37,500.00	250.00	156.00	39,000.00

APPROACH DOCUMENT FOR
PRODUCT COSTING & INVENTORY VALUATION

	Act.Cost	100.00	150.00	15,000.00	100.00	140.00	14,000.00
	Act.Cost Revl	-			10.00	220.00	2,200.00
	Cost of Prod			**52,500.00**			**55,200.00**
	Goods Rec						**52,500.00**
	Variance						**2,700.00**
	COP / Unit			**350.00**			**368.00**
1to 30thApril	FG Stock						
		Rate	Qty	Value	Difference		
1st April	Opening Stock	350.00	120.00	42,000.00	-		
1to 30thApril	Production	350.00	150.00	52,500.00	2,700.00		
	Sub Total		**270.00**	**94,500.00**	**2,700.00**		
	Sale of FG	350.00	170.00	59,500.00			
	Closing Stock	385.00	100.00	38,500.00	3,500.00		

As per the above example the value of RM, SFG and FG as per different basis of valuation will be as under:

Basis of Valuation	Per unit rate for valuation		
	RM	SFG	FG
Standard cost of product at the start of month	NA	250.00	350.00
Standard cost of product at the end of month	NA	275.00	385.00
Weighted average cost and	110	NA	NA
Net realizable value	NRV	NRV	NRV

ACCOUNTING IMPLICATION

APPROACH DOCUMENT FOR
PRODUCT COSTING & INVENTORY VALUATION

Accounting implication of product costing and inventory valuation for above approach is as under. Following are conceptual journal entries for the purpose of understanding. Based on above example some "T" accounts prepared for important accounts.

Conceptual Journal Entries:

Sl.No.	Scenario	Debit A/c	Credit A/c	Remark
	Accounting Entries for Production & Inventory valuation			
1	Procurement of RM	RM Inventory	GR/IR	With purchase value
2	Consumption of RM	RM Consumption	RM Inventory	Debit on SFG prod. order
3	Production of SFG	SFG Inventory	SFG Change in stock	Credits on SFG prod. order
4	Settlement of SFG prod order	Prod.Variance	SFG Change in stock	Dr. /Cr. On SFG prod. order
5	Consumption of SFG	SFG Consumption	SFG Inventory	Debit on FG prod. order
6	Production of FG	FG Inventory	FG Change in stock	Credits on FG prod. order
7	Settlement of FG prod order	Prod. Variance	FG Change in stock	Dr. /Cr. On FG prod. order
8	Revision of standard cost (Increase)	FG/SFG Inventory	Revaluation Difference	On release of Std.Cost
9	Delivery of SFG/FG for sale	Cost of goods sold	FG/SFG Inventory	With Std.Cost of SFG/FG

"T" Accounts for important accounts:

APPROACH DOCUMENT FOR
PRODUCT COSTING & INVENTORY VALUATION

RM Inventory A/c			
Credit A/c	**Amount**	**Debit A/c**	**Amount**
Opening Bal	50,000.00	RM Consumption	44,550.00
GR/IR	60,000.00	Closing Bal	65,450.00
	110,000.00		**110,000.00**

SFG Inventory A/c			
Credit A/c	**Amount**	**Debit A/c**	**Amount**
Opening Bal	25,000.00	SFG Consumption	39,000.00
Change in stock	50,000.00	Cost of goods sold	10,000.00
Revaluation Diff	2,600.00	Closing Bal	28,600.00
	77,600.00		**77,600.00**

FG Inventory A/c			
Credit A/c	**Amount**	**Debit A/c**	**Amount**
Opening Bal	42,000.00	Cost of goods sold	59,500.00
Change in stock	52,500.00	Closing Bal	38,500.00
Revaluation Diff	3,500.00		
	98,000.00		**98,000.00**

Production Variance A/c			
Credit A/c	**Amount**	**Debit A/c**	**Amount**
SFG Change in stock	5,825.00	Profit & Loss	8,525.00
FG Change in stock	2,700.00		
	8,525.00		**8,525.00**

Revaluation Diff A/c			
Credit A/c	**Amount**	**Debit A/c**	**Amount**
Profit & Loss	5,300.00	SFG Inventory A/c	2,600.00
		FG Inventory A/c	2,700.00

	5,300.00		5,300.00

Profit & Loss A/c			
Credit A/c	**Amount**	**Debit A/c**	**Amount**
Production Variance	8,525.00	Revaluation Diff	5,300.00
		Closing Bal	3,225.00
	8,525.00		**8,525.00**

The same example if we have to extend for computation of actual cost, by using standard functionality of SAP system "**Actual costing material ledger**". Following will be explanation and accounting implications.

RAW MATERIAL:

Same as explained above i.e. without "Actual costing material ledger"

SEMI FINISHED MATERIALS:

Date		Price	Nature				
	SFG Material	Standard	Produced				
1st April	Std.Cost Comp.						
		Rate	Std.Qty	Cost			
1st April	Raw Materials	100.00	2.00	200.00			
1st April	Activity Cost	50.00	1.00	50.00			
	COP / Unit			**250.00**			
1to 30thApril	SFG Production Order for 200 Units						
		Std.Rate	Std.Qty	Cost	Actual Rate	Actual Qty	Actual cost
	RM	100.00	400.00	40,000.00	110.00	405.00	44,550.00
	Act.Cost	50.00	200.00	10,000.00	50.00	205.00	10,250.00
	Act.Cost Revl	-			5.00	205.00	1,025.00
	Cost of Prod			**50,000.00**			**55,825.00**

APPROACH DOCUMENT FOR
PRODUCT COSTING & INVENTORY VALUATION

		Rate	Qty	Value	Difference	PWAC	Total
	Goods Rec						**50,000.00**
	Variance						**5,825.00**
	COP / Unit			**250.00**			**279.13**
1to 30thApril	SFG-Stock						
		Rate	Qty	Value	Difference	PWAC	Total
1st April	Opening Stock	250.00	100.00	25,000.00	-	250.00	
1to 30thApril	Production	250.00	200.00	50,000.00	5,825.00	279.13	
	Sub Total		**300.00**	**75,000.00**	**5,825.00**	**269.42**	
	SFG-Cons	250.00	156.00	39,000.00	3,029.00	269.42	42,029.00
	SFG-Sale	250.00	40.00	10,000.00	776.67	269.42	10,776.67
	Closing Stock	250.00	104.00	26,000.00	2,019.33	269.42	28,019.33

FINISHED MATERIALS:

Date		Price	Nature				
	FG	Standard	Produced				
1st April	Std.Cost Comp						
		Rate	Std.Qty	Cost			
1st April	SFG Material	250.00	1.00	250.00			
1st April	Activity Cost	100.00	1.00	100.00			
	COP / Unit			**350.00**			
1to 30thApril	FG Production Order for 150 Units						
		Std.Rate	Std.Qty	Cost	Actual Rate	Actual Qty	Actual cost
	SFG Material	250.00	150.00	37,500.00	250.00	156.00	39,000.00
	Act.Cost	100.00	150.00	15,000.00	100.00	140.00	14,000.00
	Act.Cost Revl	-			10.00	220.00	2,200.00
	Cost of Prod			**52,500.00**			**55,200.00**
	Goods Rec						

		Rate	Qty	Value	Difference	PWAC	
							52,500.00
	Variance						2,700.00
	COP / Unit			350.00			368.00
1to 30thApril	FG Stock						
		Rate	Qty	Value	Difference	PWAC	
1st April	Opening Stock	350.00	120.00	42,000.00	-	350.00	
1to 30thApril	Production	350.00	150.00	52,500.00	2,700.00	368.00	
	Multi Level				3,029.00		
	Sub Total		270.00	94,500.00	5,729.00	371.22	
	Sale of FG	350.00	170.00	59,500.00	3,607.15	371.22	63,107.15
	Closing Stock	350.00	100.00	35,000.00	2,121.85	371.22	37,121.85

ACCOUNTING IMPLICATION

Accounting implication of product costing and inventory valuation for above approach is as under. Following are conceptual journal entries for the purpose of understanding. Based on above example some "T" accounts prepared for important accounts.

Conceptual Journal Entries:

All entries as discussed above will be applicable in this scenario as well; however there are some more entries in "Actual costing material ledger"

Accounting Entries for Production & Inventory valuation				
Sl.No.	Scenario	Debit A/c	Credit A/c	Remark
10	Actual costing run for SFG			
	For revaluation of SFG Inventory	SFG Inventory	Single Lvl.Diff	With diff in Std. & PWAC , Inv.Qty on last day of period
	For revarsal posting of revaluation of SFG Inventory	Single Lvl.Diff	SFG Inventory	With diff in Std. & PWAC , Inv.Qty on first day of next period
	For revaluation of COGS	Cost of goods sold	Single Lvl.Diff	With diff in Std. & PWAC , Sale Qty, last day of period

	For multilevel difference tr.to FG	Multi Lvl.Diff	Single Lvl.Diff	With diff in Std. & PWAC , Cons Qty, last day of period
11	Actual costing run for FG			
	For revaluation of FG Inventory	FG Inventory	Single Lvl.Diff	With diff in Std. & PWAC , Inv.Qty on last day of period
			Multi Lvl.Diff	Share of c/f diff from SFG on a/c of inv.qty
	For revarsal posting of revaluation of SFG Inventory	Single Lvl.Diff	SFG Inventory	With diff in Std. & PWAC , Inv.Qty on first day of next period
		Multi Lvl.Diff		Share of c/f diff from SFG on a/c of inv.qty
	For revaluation of COGS	Cost of goods sold	Single Lvl.Diff	With diff in Std. & PWAC , Sale Qty, last day of period
			Multi Lvl.Diff	Share of c/f diff from SFG on a/c of sale qty.

"T" Accounts for important accounts

RM Inventory A/c			
Credit A/c	**Amount**	**Debit A/c**	**Amount**
Opening Bal	50,000.00	RM Consumption	44,550.00
GR/IR	60,000.00	Closing Bal	65,450.00
	110,000.00		**110,000.00**
SFG Inventory A/c- Period 1			
Credit A/c	**Amount**	**Debit A/c**	**Amount**
Opening Bal	25,000.00	SFG Consumption	39,000.00
Change in stock	50,000.00	Cost of goods sold	10,000.00
Single Lvl.	2,019.33	Closing Bal	28,019.33
	77,019.33		**77,019.33**
SFG Inventory A/c- Period 2			

Credit A/c	Amount	Debit A/c	Amount
Closing Bal	2,019.33	Single Lvl.	2,019.33
	2,019.33		**2,019.33**

FG Inventory A/c- Period 1			
Credit A/c	Amount	Debit A/c	Amount
Opening Bal	42,000.00	Cost of goods sold	59,500.00
Change in stock	52,500.00	Closing Bal	37,121.85
Single Lvl.	1,000.00		
Multi Lvl.	1,121.85		
	96,621.85		**96,621.85**

FG Inventory A/c- Period 2			
Credit A/c	Amount	Debit A/c	Amount
Closing Bal	2,121.85	Single Lvl.	1,000.00
		Multi Lvl.	1,121.85
	2,121.85		**2,121.85**

Production Variance A/c			
Credit A/c	Amount	Debit A/c	Amount
SFG Change in stock	5,825.00	Profit & Loss	8,525.00
FG Change in stock	2,700.00		
	8,525.00		**8,525.00**

Single Level Diff A/c - Period 1			
Credit A/c	Amount	Debit A/c	Amount
Profit & Loss	8,525.00	Cost of goods sold(SFG)	776.67
		Multi Lvl.	3,029.00
		Cost of goods sold(FG)	1,700.00
		SFG Inventory	2,019.33

Credit A/c	Amount	Debit A/c	Amount
		FG Inventory	1,000.00
	8,525.00		**8,525.00**

Single Level Diff A/c - Period 2			
Credit A/c	**Amount**	**Debit A/c**	**Amount**
SFG Inventory	2,019.33	Profit & Loss	3,019.33
FG Inventory	1,000.00		
	3,019.33		**3,019.33**

Multi Level Diff A/c - Period 1			
Credit A/c	**Amount**	**Debit A/c**	**Amount**
Single Lvl.	3,029.00	FG Inventory	1,121.85
		Cost of goods sold (FG)	1,907.15
	3,029.00		**3,029.00**

Multi Level Diff A/c - Period 2			
Credit A/c	**Amount**	**Debit A/c**	**Amount**
FG Inventory	1,121.85	Profit & Loss	1,121.85
	1,121.85		**1,121.85**

Cost of goods sold A/c			
Credit A/c	**Amount**	**Debit A/c**	**Amount**
SFG Inventory	10,000.00	Profit & Loss	73,883.81
FG Inventory	59,500.00		
Single Lvl.(SFG)	776.67		
Single Lvl.(FG)	1,700.00		
Multi Lvl.(FG)	1,907.15		
	73,883.81		**73,883.81**

Profit & Loss A/c- Period 1			
Credit A/c	**Amount**	**Debit A/c**	**Amount**
Production Variance		Single Lvl.	

	8,525.00		8,525.00
	8,525.00		**8,525.00**
Profit & Loss A/c - Period 2			
Credit A/c	**Amount**	**Debit A/c**	**Amount**
Single Lvl.	3,019.33	Balance	4,141.19
Multi Level	1,121.85		
	4,141.19		**4,141.19**

MACRO LEVEL SOLUTION APPROACH:

Primarily there are two important approaches available for product costing and inventory valuation.

1. Standard costing (Cost estimates at start and end of period)
2. Actual costing (Using production variance for computation of actual cost)

Standard costing approach:

In this approach following activities need to be completed /monitored in each period.

1. Review of BOM, Routing and plan activity price used for computation of standard cost estimates, the objective of this is to get the standard cost near to actual cost.

2. Complete all expenditure and material posting before start of period end closing activities.

3. Allocation of service and other non production cost center cost to production cost center.

4. Computation of actual activity price on production cost center.

5. Revaluation of production order with actual activity price.

6. Variance calculation and settlement of production / process order.

7. Computation of standard cost at the end of period by using the actual activity price and latest moving average price for raw materials. Then release the standard cost for the existing inventory quantity.

"PROS" in this approach are:
1. Based on existing configuration only product costing and inventory valuation can be done.
2. As most of the above steps are already under use so costing department is well versed with the steps therefore quite easy to operate.

"CONS" in this approach are:
1. Inventory always is valued on estimated cost and not the actual cost.
2. Production variance remains in profit and loss account and not allocated to inventory and consumption respectively.

Actual costing approach:

In this approach following point need to be considered and analyzed over and above the activities listed for standard costing approach:

1. Actual costing material ledger is standard functionality of SAP system, so this feature needs configuration and testing thoroughly in existing system.

2. All cross module process also need to be tested in material ledger scenario.

3. After successful configuration and testing in production system fresh cost estimate need to be released for all the production related materials.

4. Once the material ledger is successfully implemented then at the end of each month actual costing run need to be executed after completion of all controlling period end activities. The execution of actual costing run is a mandatory activity at company code level at the end of each period.

5. Analysis of actual cost and accounting entries gets posted automatically by the actual costing run.

6. Release of actual cost as computed by system as standard cost for further inventory movement and inventory valuation. This can only be done in

next to next month. I.e. Actual cost for the month of April can only be used in June and not in the month of May.

7. Transfer of actual cost to COPA.

"PROS" in this approach are:
1. Inventory always is valued on actual cost.(Periodic Weighted Avg.Cost)
2. Production variance allocated to inventory and consumption respectively based on proportionate quantity.

"CONS" in this approach are:
1. Require additional configuration and testing in existing system across the modules.
2. As this is a new feature so additional training is also required for costing department for running the actual costing.

BUSINESS SCENARIO:

Business scenarios are very important for inventory valuation of different materials such as RM, SFG and FG. Scenarios covers production process, stock keeping practice, consumption pattern, price fluctuation of material and accounting practices being followed in organization for inventory valuation. Based on above understanding following we can list following as the business scenarios:

1. Discrete process of production
2. Continuous process of production
3. Consumption of input materials based on standard BOM by using back flushing
4. Consumption of input materials based on actual consumption
5. Price fluctuation of input material is very high
6. Valuation of material in books

Matrix for business scenario and basis of valuation is as under:

	Basis of Valuation			
Business Scenario	Periodic weighted average cost,	Standard cost of product at the start of	Standard cost of product at the end of	Weighted average cost and

APPROACH DOCUMENT FOR
PRODUCT COSTING & INVENTORY VALUATION

	(Actual Cost)	month	month	
Discrete process of production	X			
Continuous process of production			X	
Consumption of input materials based on standard BOM by using back flushing			X	
Consumption of input materials based on actual consumption	X			
Price fluctuation of input material is very high	X			
Valuation of material in books-Standard			X	
Valuation of material in books-WAC/MAP				X