

Costing methods in MS Dynamics

NAV XXXI. (Inventory Costing)

Ing.J.Skorkovský,CSc.

MASARYK UNIVERSITY BRNO, Czech Republic

Faculty of economics and business administration

Department of corporate economy

Inventory costing overview

Why inventory accounting?



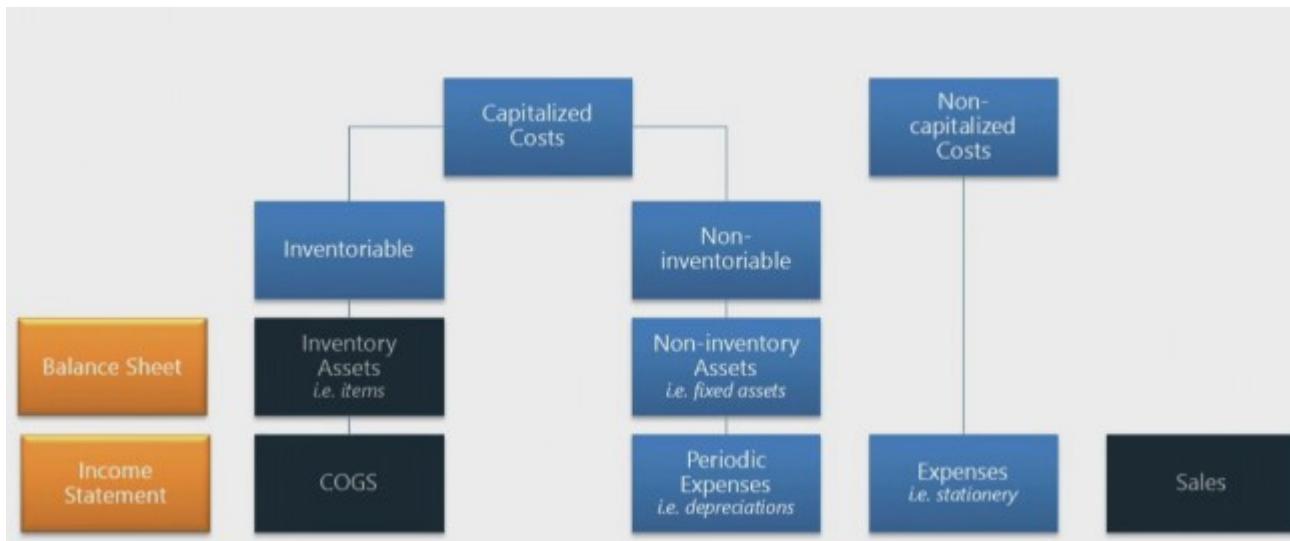
Allocate item cost to the period in which the item is sold

Inventory Equation

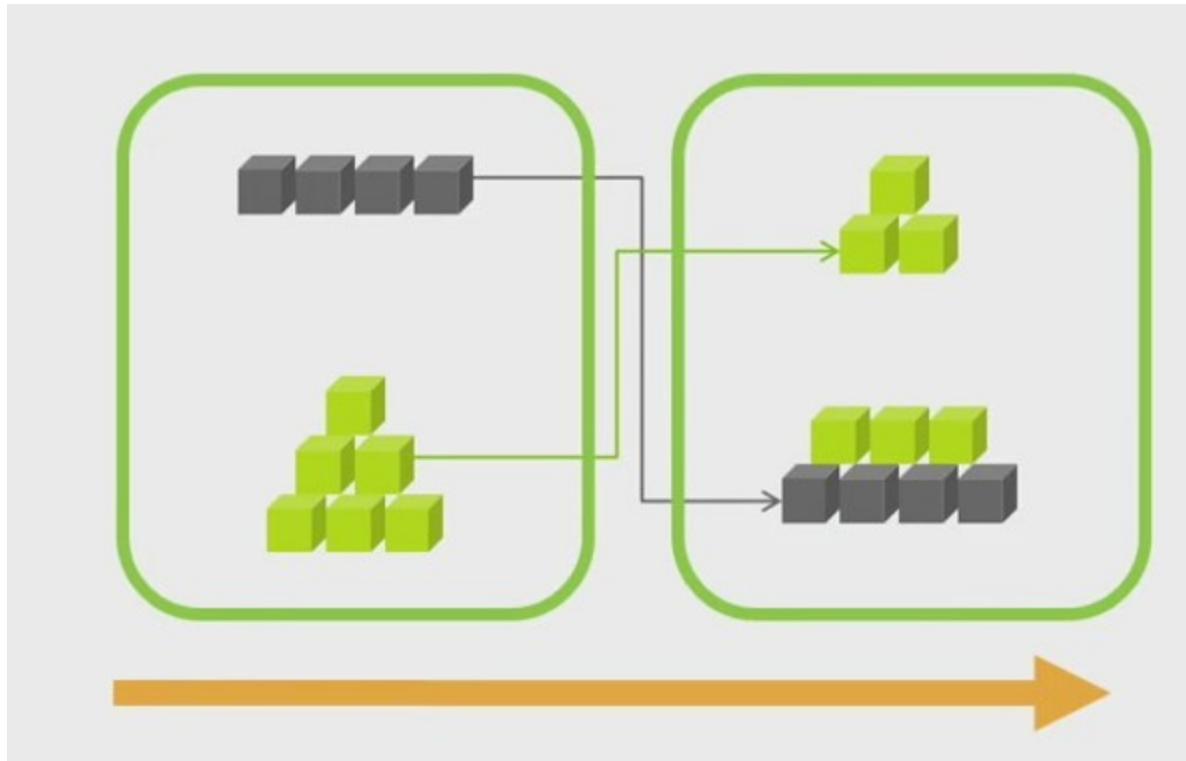
$$\text{Ending Inventory} = \text{Beginning Inventory} + \text{Net Purchases} - \text{Cost of Goods Sold}$$

The equation is visualized with colored boxes and operators: a dark blue box for Ending Inventory, a light blue box for Beginning Inventory, a green box for Net Purchases, and an orange box for Cost of Goods Sold. The equals sign is between Beginning and Net Purchases, and the minus sign is before Cost of Goods Sold. A plus sign is placed between Beginning and Net Purchases.

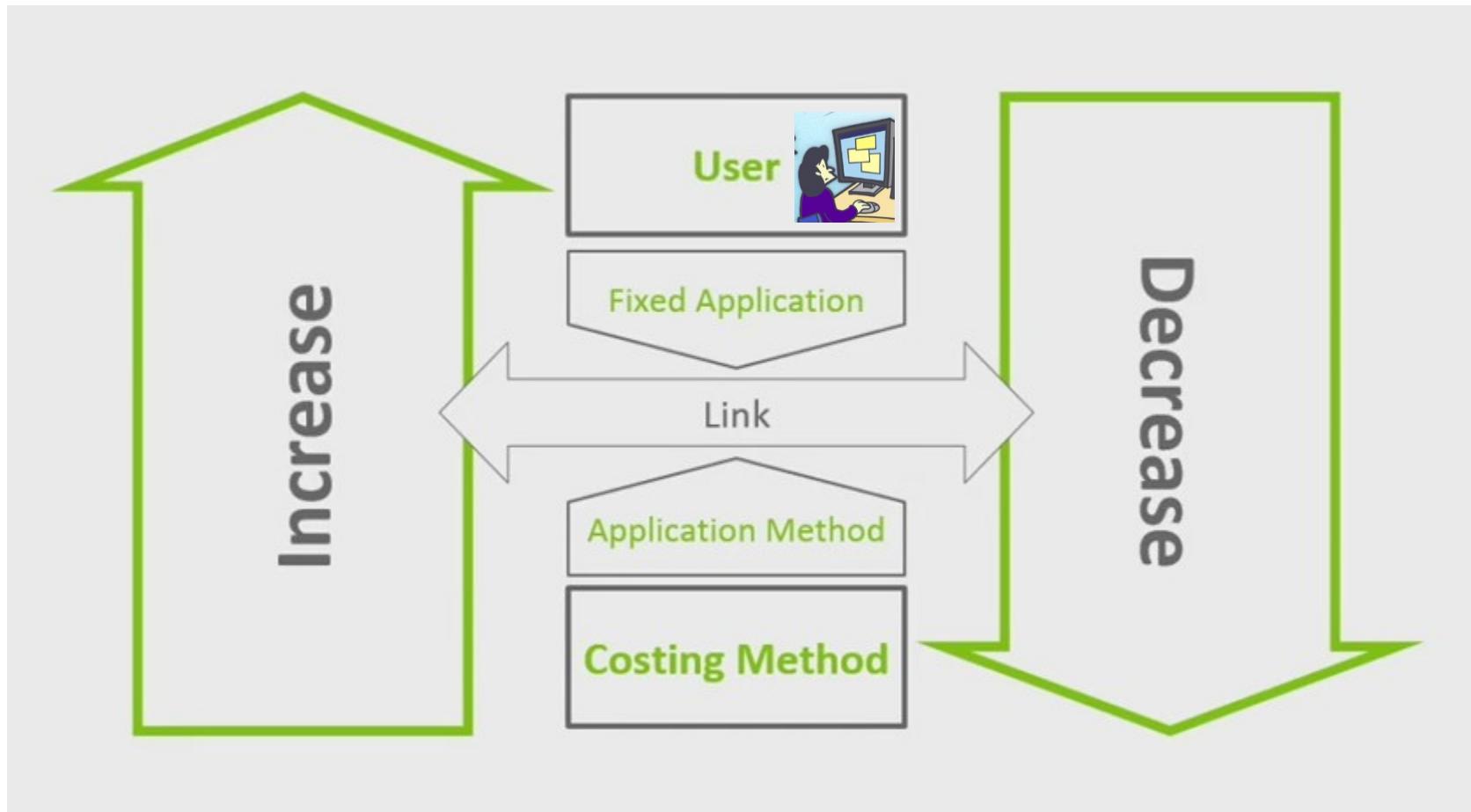
Inventory costing overview



Costing methods



Cost flow assumption



FIFO

Costing Methods

First In, First Out (FIFO)

| Posting Date | Cost Amount (Actual) | Entry No. |
|--------------|-------------------------|-----------|
| 1/1/2010 | 10 | 1 |
| 1/1/2010 | 20 | 2 |
| 1/1/2010 | 30 | 3 |
| 1/2/2010 | -10 | 4 |
| 1/3/2010 | -20 | 5 |
| 1/4/2010 | -30 | 6 |

LIFO

| Posting Date | Cost Amount (Actual) | Entry No. |
|--------------|-------------------------|-----------|
| 1/1/2010 | 10 | 1 |
| 1/1/2010 | 20 | 2 |
| 1/1/2010 | 30 | 3 |
| 1/2/2010 | -30 | 4 |
| 1/3/2010 | -20 | 5 |
| 1/4/2010 | -10 | 6 |

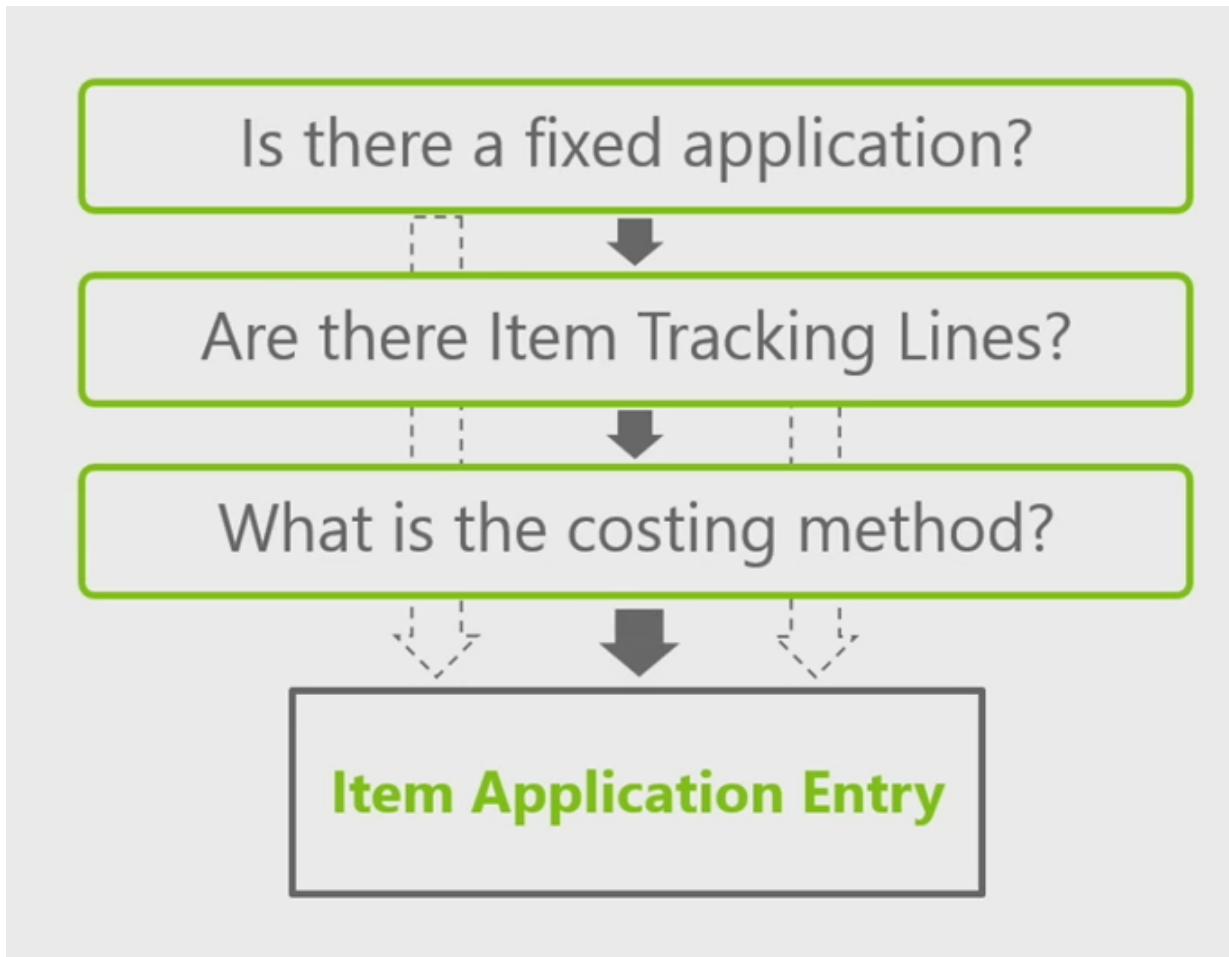
Average

| Posting Date | Cost Amount (Actual) | Entry No. |
|--------------|-------------------------|-----------|
| 1/1/2010 | 10 | 1 |
| 1/1/2010 | 20 | 2 |
| 1/1/2010 | 30 | 3 |
| 1/2/2010 | -20 | 4 |
| 1/3/2010 | -20 | 5 |
| 1/4/2010 | -20 | 6 |

Specific (fixed application)

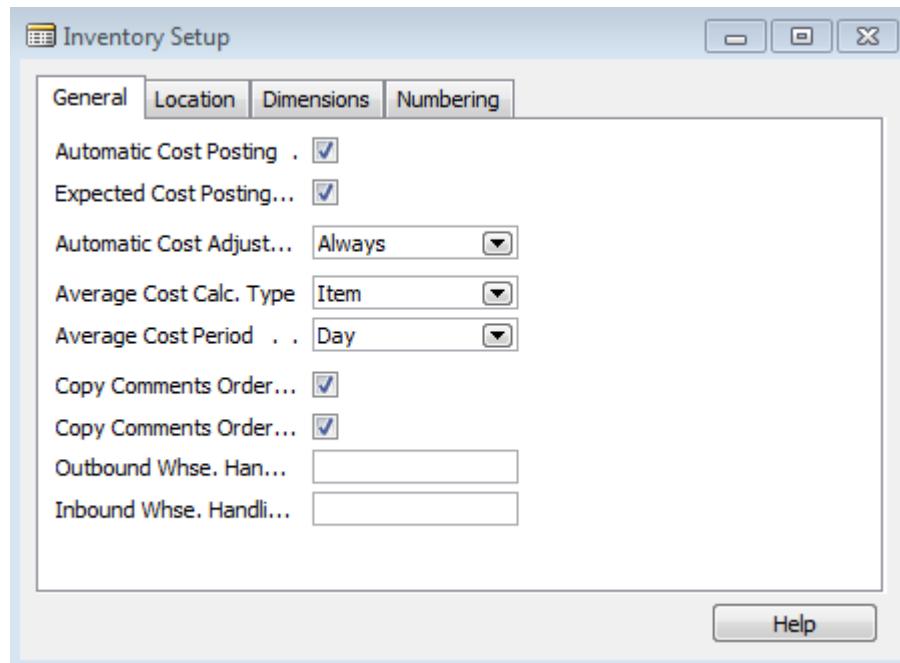
| Posting Date | Cost Amount (Actual) | Entry No. | Applies-to Entry No. |
|--------------|---|-----------|----------------------|
| 1/1/2010 |  10 | 1 | |
| 1/1/2010 |  20 | 2 | |
| 1/1/2010 |  30 | 3 | |
| 1/2/2010 |  -20 | 4 | 2 |
| 1/3/2010 |  -10 | 5 | 1 |
| 1/4/2010 |  -30 | 6 | 3 |

Application algorithm



Setup

- Warehouse ->Setup->Inventory Setup



Item application entry

- Create new Item (e.g.I_FIFO1)- FIFO, zero all costs, Unit Price =60, Gen.Prod.Posting Group=Retail, VAT 25, Inventory Posting Group=Resale,...
- Purchase by use of item journal 3 times (Warehouse, Inventory, Item Journals, Entry Type =Purchase) : 1*10, 1*20, 1*30 and 1*40 (4 lines)-use F8 to copy lines please !!!!

DEFAULT Default Journal - Item Journal

Batch Name DEFAULT

| Posting Date | Entry Type | Document No. | Item No. | Description | Location Code | Quantity | Unit of Measure Code | Unit Amount | Amount |
|--------------|------------|--------------|----------|-------------|---------------|----------|----------------------|-------------|--------|
| 10.12.14 | Purchase | T00005 | I_FIFO1 | Item FIFO1 | BLUE | 1 | PCS | 10,00 | 10,00 |
| 10.12.14 | Purchase | T00005 | I_FIFO1 | Item FIFO1 | BLUE | 1 | PCS | 20,00 | 20,00 |
| 10.12.14 | Purchase | T00005 | I_FIFO1 | Item FIFO1 | BLUE | 1 | PCS | 30,00 | 30,00 |
| *► | Purchase | T00005 | I_FIFO1 | Item FIFO1 | BLUE | 1 | PCS | 40,00 | 40,00 |

F11

 The journal lines were successfully posted.



Item card

I_FIFO1 Item FIFO1 - Item Card

| | | | | | | | |
|--------------------------------|------------|---------------|----------|---------------|--------------------------------|------------|-----------|
| General | Invoicing | Replenishment | Planning | Foreign Trade | Item Tracking | E-Commerce | Warehouse |
| No. | I_FIFO1 | ... | | | Search Description | ITEM FIFO1 | |
| Description | Item FIFO1 | | | | Inventory. | 4 | |
| Base Unit of Measure | PCS | ↑ | | | Qty. on Purch. Order | 0 | |
| Bill of Materials | | | | | Qty. on Prod. Order | 0 | |

I_FIFO1 Item FIFO1 - Item Card

| | | | | |
|-----------------------------------|-------------------------------------|---------------|----------|-----------------------------|
| General | Invoicing | Replenishment | Planning | Fore |
| Costing Method | FIFO | | | |
| Cost is Adjusted. | <input checked="" type="checkbox"/> | | | |
| Cost is Posted to G/L | <input checked="" type="checkbox"/> | | | |
| Standard Cost | 219,50 | ↓ | | |
| Unit Cost | 25,00 | ↓ | → | 10+20+30+40=100 100/4=25 |
| Overhead Rate | 0,00 | | | |
| Indirect Cost % | 0 | | | |
| Last Direct Cost | 40,00 | | | |
| Price/Profit Calculation. | Profit=Price-... | | | |
| Profit % | 58,33333 | | | |
| Unit Price | 60,00 | | | |

See next slide

Average Cost Calculation

I_FIFO1 Item FIFO1 - Average Cost Calc. Overview

| Expand | Document Type | Type | Valuation Date | Item No. | Unit Cost | Cost is Adjusted | Entry Type | Quantity | Cost Amount (Expected) |
|--------|---------------|----------------------|-----------------|----------|--------------|------------------|------------|----------|------------------------|
| ▶ | | Closing Entry | 10.12.14 | I_FIFO1 | 25,00 | ✓ | | 4 | 0,00 |
| | | Increase | 10.12.14 | I_FIFO1 | 10,00 | | Purchase | 1 | 0,00 |
| | | Increase | 10.12.14 | I_FIFO1 | 20,00 | | Purchase | 1 | 0,00 |
| | | Increase | 10.12.14 | I_FIFO1 | 30,00 | | Purchase | 1 | 0,00 |
| | | Increase | 10.12.14 | I_FIFO1 | 40,00 | | Purchase | 1 | 0,00 |

Financial Management

The screenshot shows the SAP Fiori launchpad with the "Financial Management" app selected. A red arrow points from the "Inventory Valuation" node in the tree view to the corresponding table data below.

| Item No. | Description | Bill of Material | Base Unit of Measure | As of 31.12.00 | | Increases (LCY) | | Decreases (LCY) | | As of 31.12.16 | | Cost Posted to G/L |
|----------|-------------|------------------|----------------------|----------------|-------|-----------------|--------|-----------------|-------|----------------|--------|--------------------|
| | | | | Quantity | Value | Quantity | Value | Quantity | Value | | | |
| I_FIFO1 | Item FIFO1 | | | 0 | 0,00 | 4 | 100,00 | | | 4 | 100,00 | 100,00 |
| | | | | | 0,00 | | 100,00 | 0,00 | | 100,00 | 100,00 | |
| | | | | | | | | | | | | |
| | Total | | | | 0,00 | | 100,00 | 0,00 | | 100,00 | 100,00 | |

$$10+20+30+40=100$$

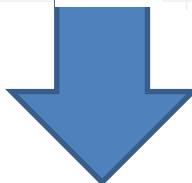
$$100/4=25$$

Sale with Item Journal and Fixed Application

| DEFAULT Default Journal - Item Journal | | | | | | | | | | | |
|--|------------|--------------|----------|-------------|---------------|----------|----------------------|-------------|--------|-----------|------------------|
| Batch Name | | | | | DEFAULT | | | | | | |
| Posting Date | Entry Type | Document No. | Item No. | Description | Location Code | Quantity | Unit of Measure Code | Unit Amount | Amount | Unit Cost | Applies-to Entry |
| *► 10.12.14 | Sale | T00006 | I_FIFO1 | Item FIFO1 | BLUE | 1 PCS | | 60,00 | 60,00 | 25,00 | 481 |

Fixed application

| Applied Entry to Adjust | Posting Date | Entry Type | Document Type | Document No. | Item No. | Lot No. | Location Code | Invoiced Quantity | Remaining Quantity | Sales Amount (Actual) | Entry No. | Cost Amount (Actual) | Open |
|-------------------------|--------------|------------|---------------|--------------|----------|---------|---------------|-------------------|--------------------|-----------------------|-----------|----------------------|------|
| | 10.12.14 | Purchase | | T00005 | I_FIFO1 | | BLUE | 1 | 1 | 0,00 | 480 | 10,00 | ✓ |
| | 10.12.14 | Purchase | | T00005 | I_FIFO1 | | BLUE | 1 | 1 | 0,00 | 481 | 20,00 | ✓ |
| | 10.12.14 | Purchase | | T00005 | I_FIFO1 | | BLUE | 1 | 1 | 0,00 | 482 | 30,00 | ✓ |
| | 10.12.14 | Purchase | | T00005 | I_FIFO1 | | BLUE | 1 | 1 | 0,00 | 483 | 40,00 | ✓ |



Do you want to post the journal lines?



The journal lines were successfully posted.

Item Card

I_FIFO1 Item FIFO1 - Item Card

| | | | | | | | |
|--------------------------------|------------|---------------|----------|--------------------------------|--------------------------|------------|-----------|
| General | Invoicing | Replenishment | Planning | Foreign Trade | Item Tracking | E-Commerce | Warehouse |
| No. | I_FIFO1 | | | | Search Description . . . | ITEM FIFO1 | |
| Description | Item FIFO1 | | | Inventory. | 3 | | |
| Base Unit of Measure | PCS | | | Qty. on Purch. Order | 0 | | |
| Bill of Materials | | | | Qty. on Prod. Order | 0 | | |

I_FIFO1 Item FIFO1 - Item Card

| | | | |
|-----------------------------------|-------------------------------------|---------------|----------|
| General | Invoicing | Replenishment | Planning |
| Costing Method | FIFO | | |
| Cost is Adjusted. | <input checked="" type="checkbox"/> | | |
| Cost is Posted to G/L | <input checked="" type="checkbox"/> | | |
| Standard Cost | 219,50 | | |
| Unit Cost | 26,66667 | | |
| Overhead Rate | 0,00 | | |
| Indirect Cost % | 0 | | |
| Last Direct Cost. | 40,00 | | |
| Price/Profit Calculation. | Profit=Price-... | | |
| Profit % | 55,55555 | | |
| Unit Price | 60,00 | | |

$$\begin{aligned}10+30+40 &= 80 \\80/3 &= 26,66667\end{aligned}$$

See next slide

Average Cost Calculation

| I_FIFO1 Item FIFO1 - Average Cost Calc. Overview | | | | | | |
|--|---------------|------------------|----------------|----------|-----------|------------------|
| Expand | Document Type | Type | Valuation Date | Item No. | Unit Cost | Cost is Adjusted |
| | | Closing Entry | 10.12.14 | I_FIFO1 | 26,67 | ✓ |
| ▶ | | Increase | 10.12.14 | I_FIFO1 | 10,00 | Purchase 1 |
| | | Increase | 10.12.14 | I_FIFO1 | 20,00 | Purchase 1 |
| | | Increase | 10.12.14 | I_FIFO1 | 30,00 | Purchase 1 |
| | | Increase | 10.12.14 | I_FIFO1 | 40,00 | Purchase 1 |
| | | Applied Decrease | 10.12.14 | I_FIFO1 | 20,00 | Sale -1 |

$$\begin{aligned}10+30+40 &= 80 \\80/3 &= 26,66667\end{aligned}$$

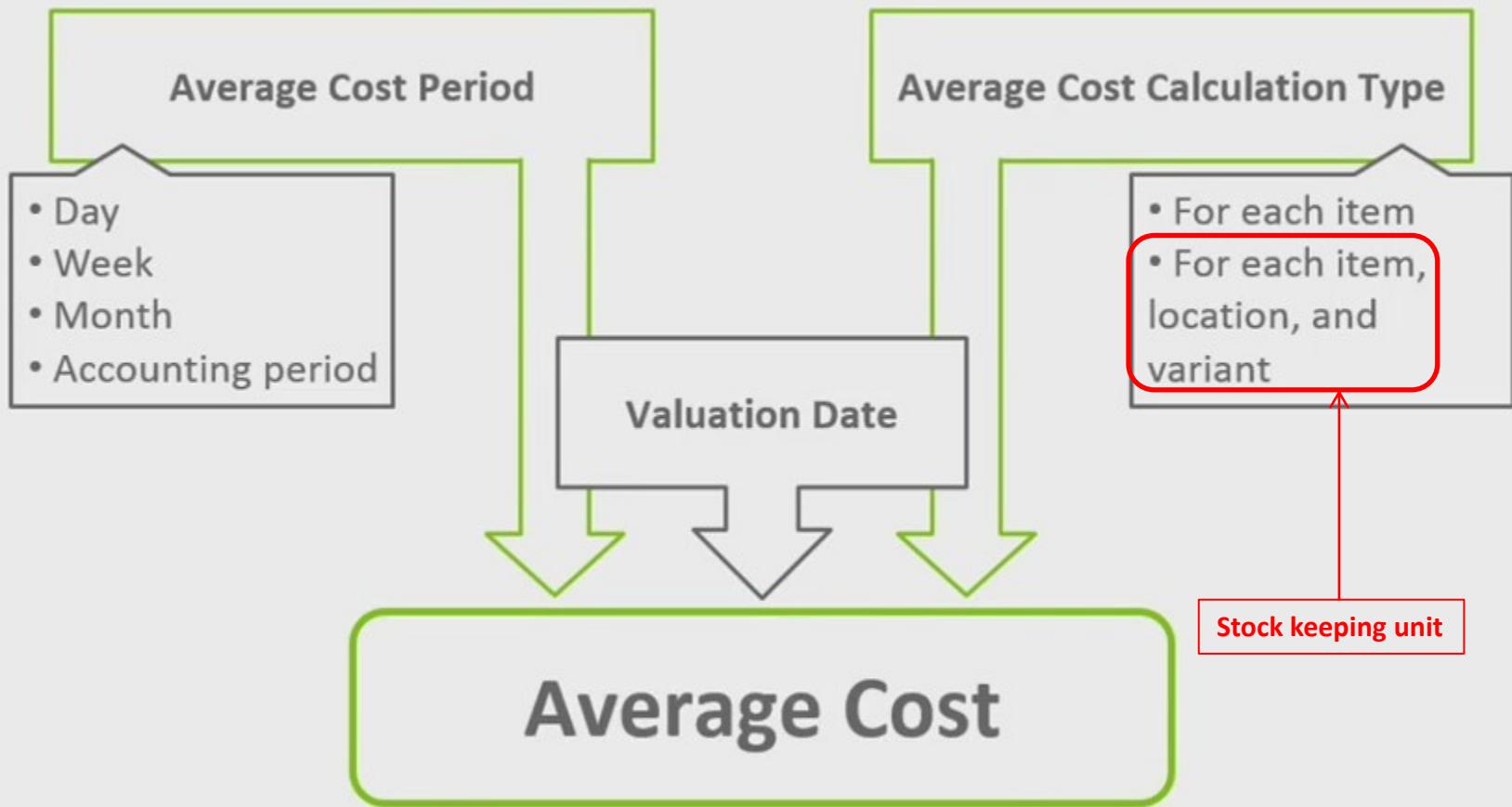
Standard

| Posting Date | Cost Amount (Actual) | Entry No. |
|--------------|-------------------------|-----------|
| 1/1/2010 | 15 | 1 |
| 1/1/2010 | 15 | 2 |
| 1/1/2010 | 15 | 3 |
| 1/2/2010 | -15 | 4 |
| 1/3/2010 | -15 | 5 |
| 1/4/2010 | -15 | 6 |

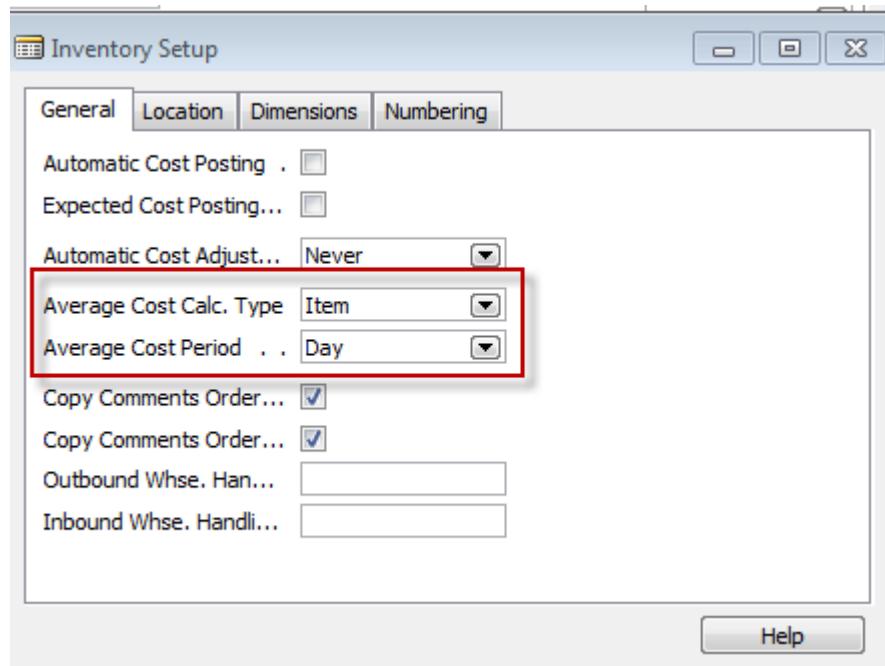
Fixed application

| Posting Date | Cost Amount (Actual) | Entry No. | Applies-to Entry No. |
|--------------|---|-----------|----------------------|
| 1/1/2010 |  10 | 1 | |
| 1/1/2010 |  20 | 2 | |
| 1/1/2010 |  30 | 3 | |
| 1/2/2010 |  -20 | 4 | 2 |
| 1/3/2010 |  -10 | 5 | 1 |
| 1/4/2010 |  -30 | 6 | 3 |

Average cost calculation



Average cost calculation



Item application entry-average

- Create new Item (e.g.I_AVRG1)- Costing Method=Average, zero all costs, Unit Price =60, **Gen.Prod.Posting Group=Retail**, **VAT 25**, **Inventory Posting Group=Resale**,...
- Purchase by use of item journal 3 times (Warehouse, Inventory, Item Journals, Entry Type =Purchase) : **1*10, 1*20, 1*30 and 1*40 (4 lines)**-use F8 to copy lines please !!!!

Screenshot of the SAP Item Journal (Item Journal) screen:

The screen shows a table of journal entries for item I_AVRG1. The entries are:

| Posting Date | Entry Type | Document No. | Item No. | Description | Location Code | Quantity | Unit of Measure Code | Unit Amount | Amount | Unit Cost | Applies-to Entry |
|--------------|------------|--------------|----------|-------------|---------------|----------|----------------------|-------------|--------|-----------|------------------|
| 10.12.14 | Purchase | T00007 | I_AVRG1 | I_AVRG1 | BLUE | 1 | PCS | 10,00 | 10,00 | 10,00 | 0 |
| 10.12.14 | Purchase | T00007 | I_AVRG1 | I_AVRG1 | BLUE | 1 | PCS | 20,00 | 20,00 | 20,00 | 0 |
| 10.12.14 | Purchase | T00007 | I_AVRG1 | I_AVRG1 | BLUE | 1 | PCS | 30,00 | 30,00 | 30,00 | 0 |
| 10.12.14 | Purchase | T00007 | I_AVRG1 | I_AVRG1 | BLUE | 1 | PCS | 40,00 | 40,00 | 40,00 | 0 |

A large blue arrow points downwards from the table towards a message at the bottom. The message says: "The journal lines were successfully posted." A large blue arrow points to the right from the message area.

F11

 The journal lines were successfully posted.

Item Card (Costing Method=Average)

I_AVRG1 I_AVRG1 - Item Card

| | | | | | | | |
|--------------------------------|-----------|---------------|----------|---------------|--------------------------------|------------|-----------|
| General | Invoicing | Replenishment | Planning | Foreign Trade | Item Tracking | E-Commerce | Warehouse |
| No | I_AVRG1 | | | | Search Description | I_AVRG1 | |
| Description | I_AVRG1 | | | | Inventory | 4 | |
| Base Unit of Measure | PCS | | | | Qty. on Purch. Order | 0 | |
| Bill of Materials | | | | | Qty. on Prod. Order | 0 | |

I_AVRG1 I_AVRG1 - Item Card

| | | | | |
|------------------------------------|-------------------------------------|---------------|----------|-----|
| General | Invoicing | Replenishment | Planning | For |
| Costing Method | Average | | | |
| Cost is Adjusted | <input checked="" type="checkbox"/> | | | |
| Cost is Posted to G/L | <input checked="" type="checkbox"/> | | | |
| Standard Cost | 219,50 | | | |
| Unit Cost | 25,00 | | | |
| Overhead Rate | 0,00 | | | |
| Indirect Cost % | 0 | | | |
| Last Direct Cost | 40,00 | | | |
| Price/Profit Calculation | Profit=Price-... | | | |
| Profit % | 58,33333 | | | |
| Unit Price | 60,00 | | | |

$$10+20+30+40=100$$
$$100/4=25$$

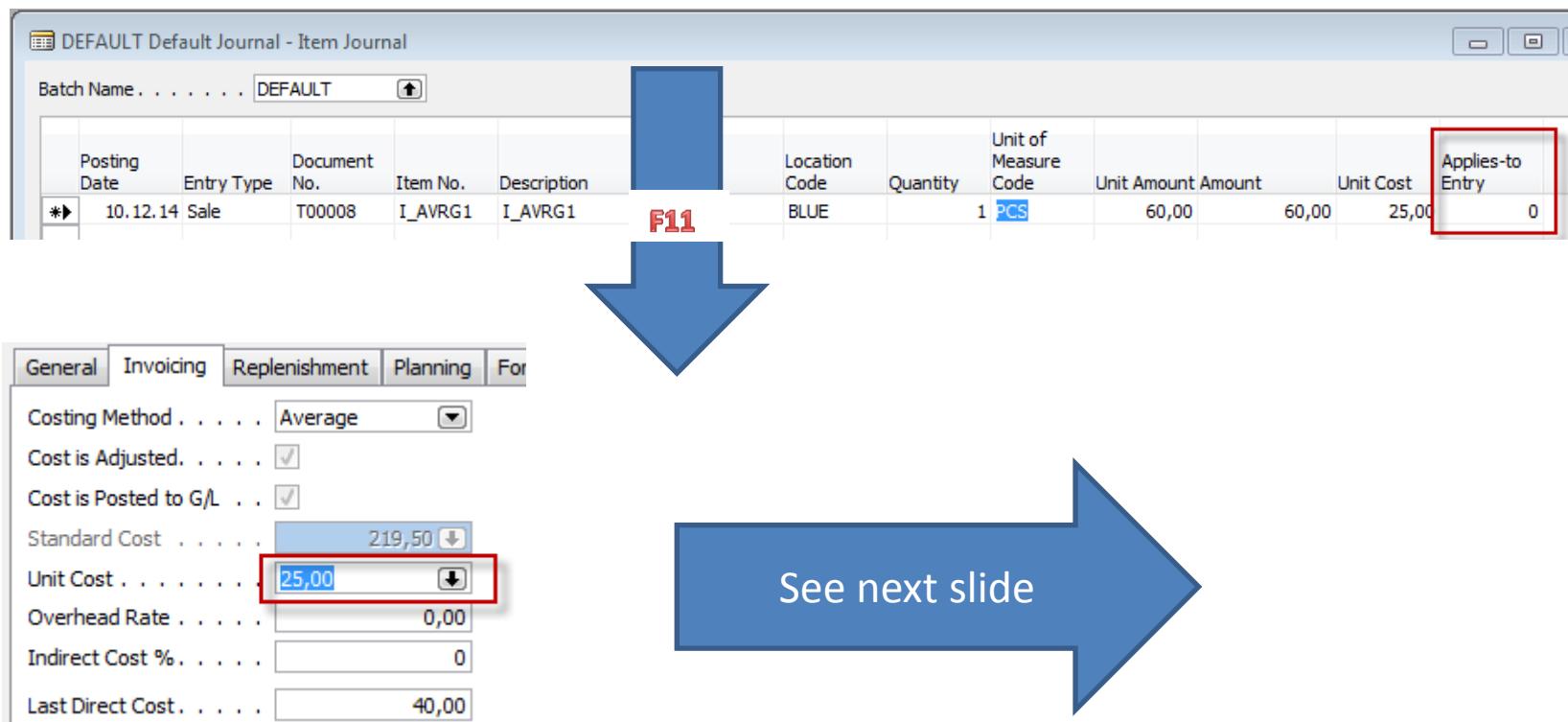
See next slide

Item Card (Costing Method=Average)

| I_AVRG1 I_AVRG1 - Average Cost Calc. Overview | | | | | | | |
|---|---------------|----------------------|-----------------|----------|--------------|------------------|------------|
| Expand | Document Type | Type | Valuation Date | Item No. | Unit Cost | Cost is Adjusted | Entry Type |
| | | Closing Entry | 10.12.14 | I_AVRG1 | 25,00 | ✓ | |
| | | Increase | 10.12.14 | I_AVRG1 | 10,00 | | Purchase |
| | | Increase | 10.12.14 | I_AVRG1 | 20,00 | | Purchase |
| | | Increase | 10.12.14 | I_AVRG1 | 30,00 | | Purchase |
| | | Increase | 10.12.14 | I_AVRG1 | 40,00 | | Purchase |

Sales

- 1 Item without applied fixed application



Average Cost Calculation Overview

| I_AVRG1 I_AVRG1 - Average Cost Calc. Overview | | | | | | | | |
|---|---------------|---------------|----------------|----------|-----------|------------------|------------|----------|
| Expand | Document Type | Type | Valuation Date | Item No. | Unit Cost | Cost is Adjusted | Entry Type | Quantity |
| | | Closing Entry | 10.12.14 | I_AVRG1 | 25,00 | ✓ | | 3 |
| | | Increase | 10.12.14 | I_AVRG1 | 10,00 | | Purchase | 1 |
| | | Increase | 10.12.14 | I_AVRG1 | 20,00 | | Purchase | 1 |
| | | Increase | 10.12.14 | I_AVRG1 | 30,00 | | Purchase | 1 |
| | | Increase | 10.12.14 | I_AVRG1 | 40,00 | | Purchase | 1 |
| | | Decrease | 10.12.14 | I_AVRG1 | 25,00 | | Sale | -1 |

Item Ledger Entries for Item I_AVRG1

| Item I_AVRG1 I_AVRG1 - Item Ledger Entries | | | | | | | | | | | | | |
|--|--------------|------------|---------------|--------------|----------|---------|---------------|-------------------|--------------------|-----------------------|-----------|----------------------|------|
| Applied Entry to Adjust | Posting Date | Entry Type | Document Type | Document No. | Item No. | Lot No. | Location Code | Invoiced Quantity | Remaining Quantity | Sales Amount (Actual) | Entry No. | Cost Amount (Actual) | Open |
| | 10.12.14 | Purchase | | T00007 | I_AVRG1 | | BLUE | 1 | 1 | 0,00 | 485 | 10,00 | |
| | 10.12.14 | Purchase | | T00007 | I_AVRG1 | | BLUE | 1 | 1 | 0,00 | 486 | 20,00 | ✓ |
| | 10.12.14 | Purchase | | T00007 | I_AVRG1 | | BLUE | 1 | 1 | 0,00 | 487 | 30,00 | ✓ |
| | 10.12.14 | Purchase | | T00007 | I_AVRG1 | | BLUE | 1 | 1 | 0,00 | 488 | 40,00 | ✓ |
| | 10.12.14 | Sale | | T00008 | I_AVRG1 | | BLUE | -1 | -1 | 60,00 | 489 | -25,00 | |

End of the section XXX.

