# Business Central Introduction Dimensions

(ERP=Microsoft Dynamics 365 Business Central)

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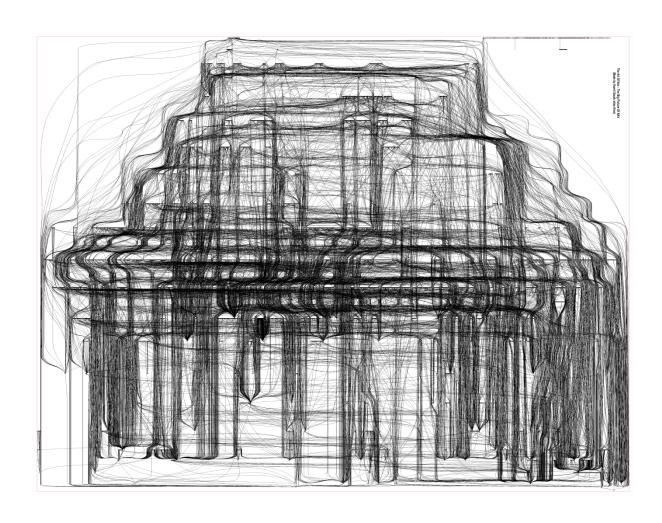
# **Business Intelligence**

- Processing large volumes of data so that the result of this action helps managers to make decisions in process management
- The result of the processing must be relevant information that managers receive at the right time
- The primary source of data that is often stored in data warehouses is ERP systems (relational DB)
- Information retrieval as a result of structured queries must be fast (short response time)
- Used for management at the strategic, tactical, and operational level

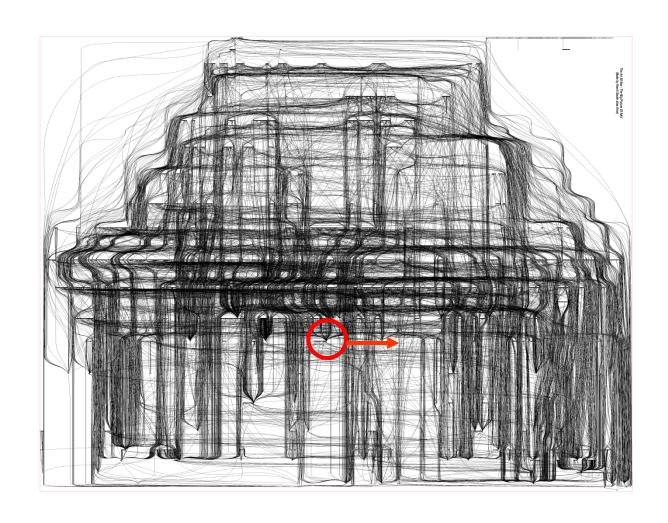
#### Limitations of ERP as a data provider

- They do not allow quick and flexible changes to the selection criteria
- No immediate user access to large volumes of aggregated data
- The volume of data doubles every five years in every enterprise, which of course also means that the system is overwhelmed with redundant data
- Dimensions are values that categorize entries so you can track and analyze them on documents, such as sales orders. Dimensions can, for example, indicate the project or department an entry came from.
- So, instead of setting up separate general ledger accounts for each department and project, you can use dimensions as a basis for analysis and avoid having to create a **complicated chart of accounts**.

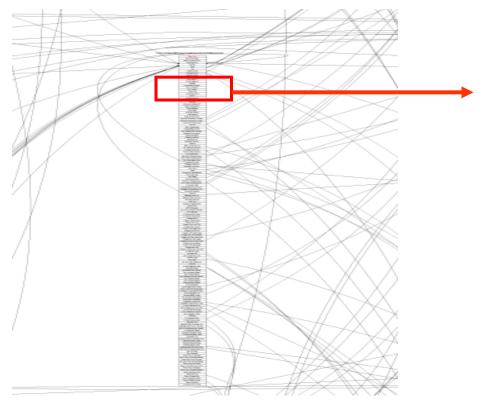
# Relations among tables I



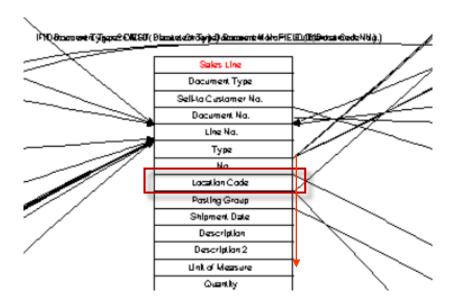
# Relations among tables II



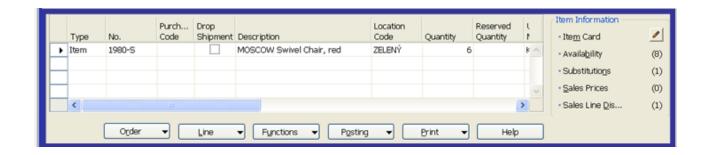
#### One table and its relations I



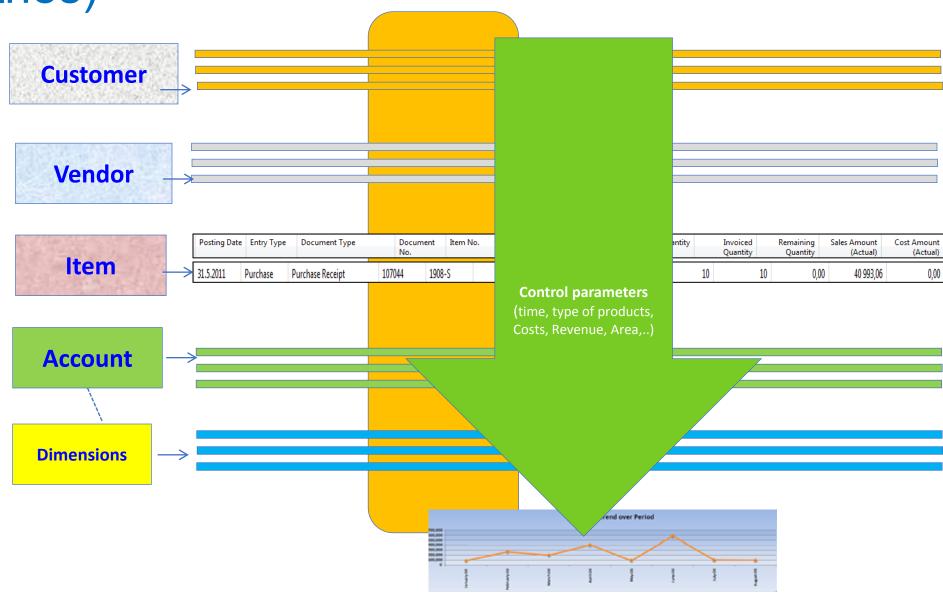
# One table (Sales Line) and its relations II



ERP NAV (very similar to Business Central)



Main principles (source tables and their entries)

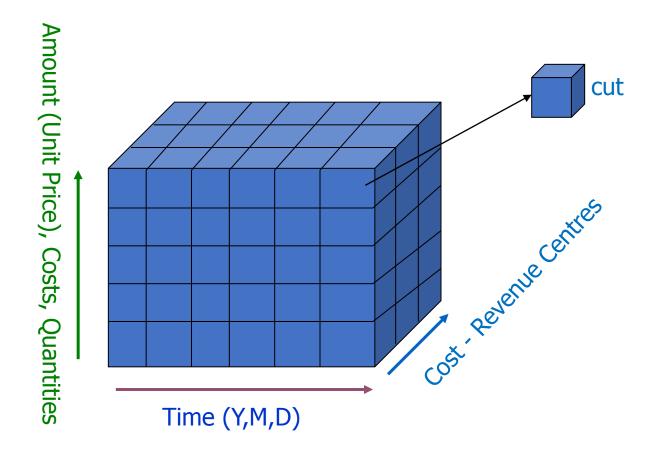


# Some chosen analysis

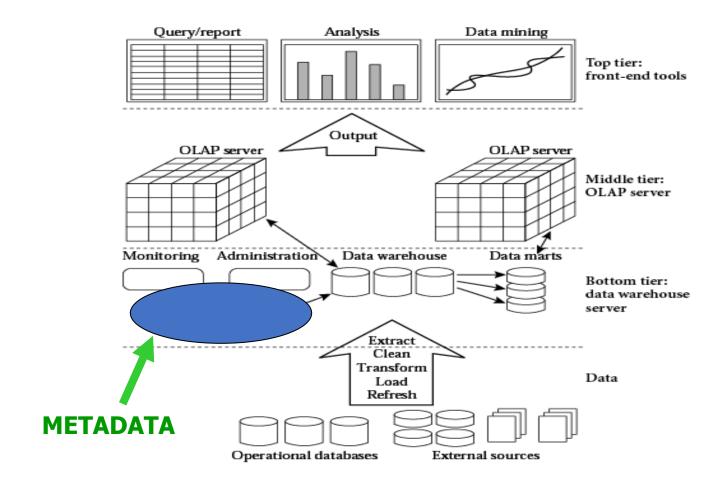


#### OLAP cube -adhoc definition of queries

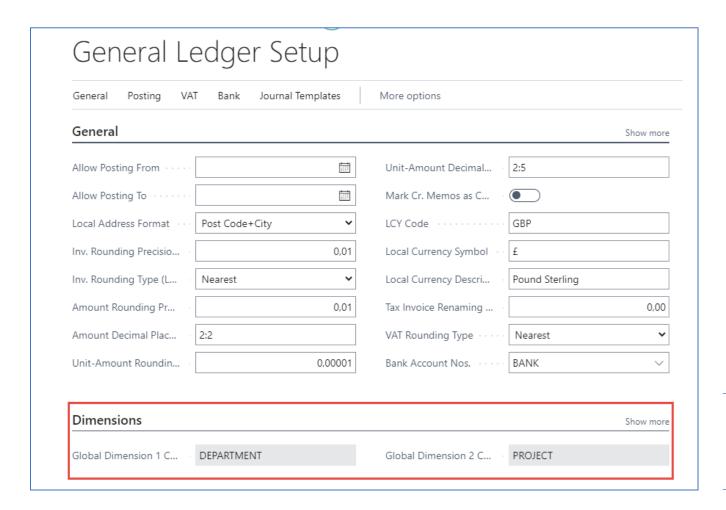
http://www.databaseanswers.org/designing\_olap\_cubes.htm



#### **OLAP** architecture



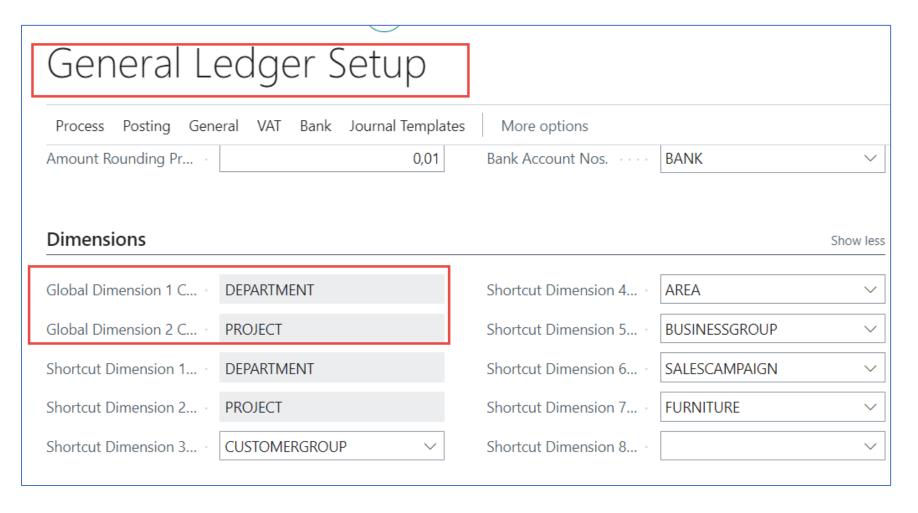
# Dimensions –global and shortcut



#### **Global dimenions codes**

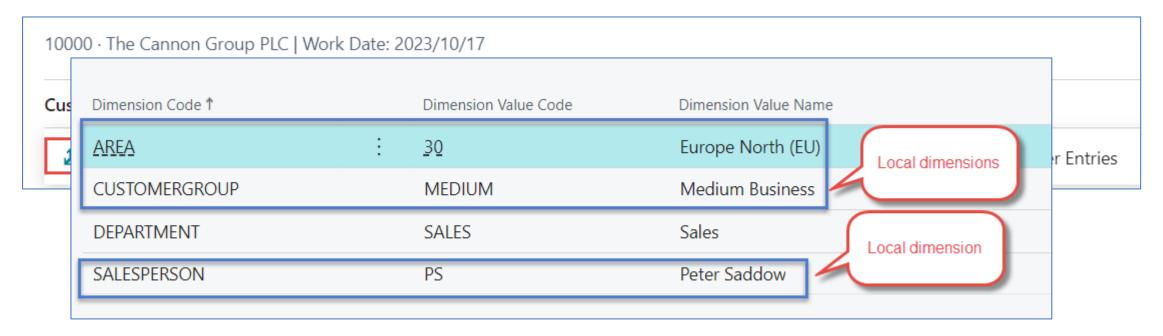
these are always part of the entries

#### Global and Shortcut dimensions and entries

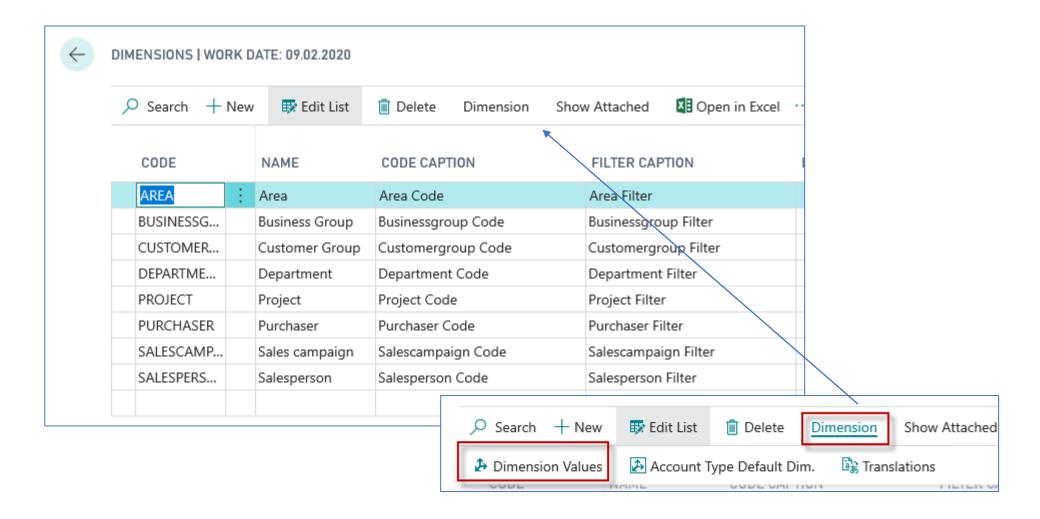


#### Global and Shortcut dimensions and entries

	Posting Date ↓		Document Type	Document No.	Customer No. ↓ ▼	Description Global dimension	Department Code	Project Code	Cι↓
$\rightarrow$	2023/10/17	:	Payment	G00083	10000	The Cannon Group PLC	SALES		
	2023/10/17		Invoice	103257	10000	Order 1342	SALES		

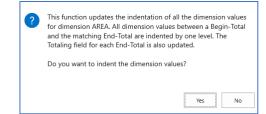


# Dimensions (cost centers, income centers)



# Dimension values (we created here three new areas with values 91-93)

CODE		NAME	DIMENSION VALUE TYPE	TOTALING	BLO
10		Europe	Begin-Total		
91		Johannesburg	Standard		
92		Durban	Standard		
93		Cape Town	Standard		
95		SA, Total	End-Total	9095	
20	1	Europe North	Begin-Total		
30		Europe North (EU)	Standard		
40		Europe North (Non EU)	Standard		
45		Europe North, Total	End-Total	2045	
50		Europe South	Standard		
55		Europe, Total	End-Total	1055	
60		America	Begin-Total		
70		America North	Standard		
80		America South	Standard		
85	1	America, Total	End-Total	6085	
90		South Africa	Begin-Total		



∮ Functions ∨

★ Indent Dimension Values

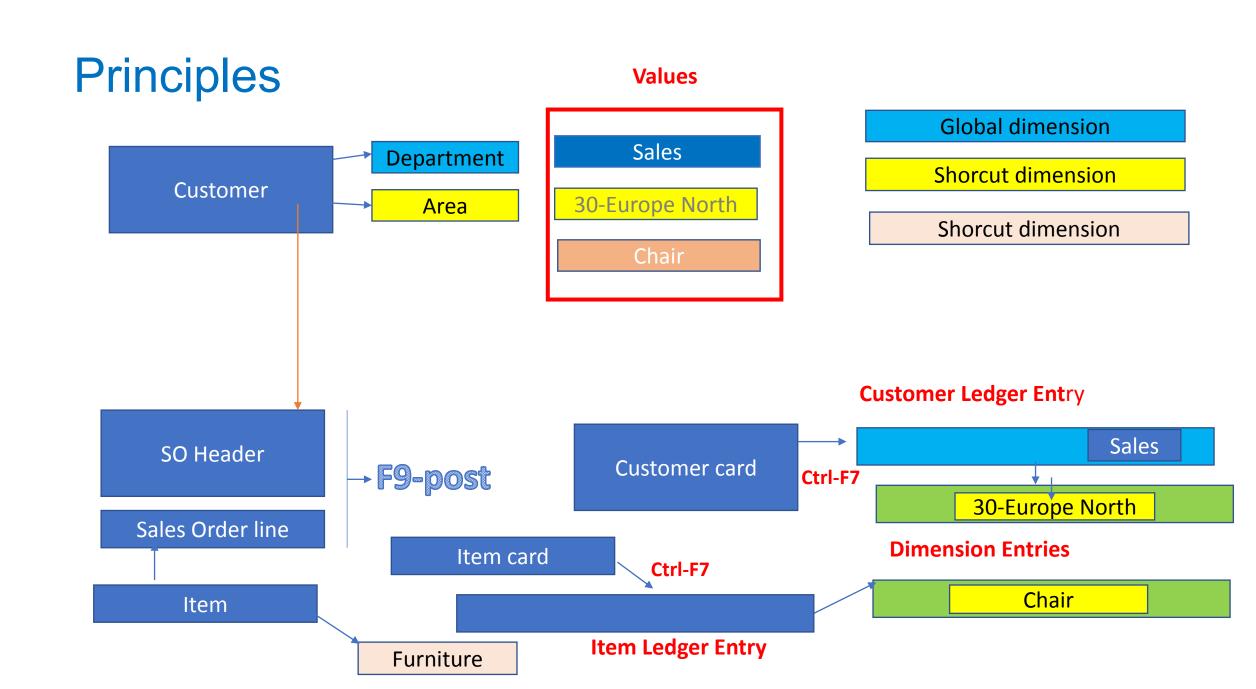
# After dimension value indent-1st example

CODE	NAME	DIMENSION VALUE TYPE	TOTALING	BL
10	Europe	Begin-Total		
20	Europe North	Begin-Total		
30	Europe North (EU)	Standard		
40	Europe North (Non EU)	) Standard		
45	Europe North, Total	End-Total	2045	
50	Europe South	Standard		
55	Europe, Total	End-Total	1055	
60	America	Begin-Total		
70	America North	Standard		
80	America South	Standard		
85	America, Total	End-Total	6085	
90	South Africa	Begin-Total		
91	Johannesburg	Standard		
92	Durban	Standard		9095
93	Cape Town	Standard		
95	SA, Total	End-Total	9095	

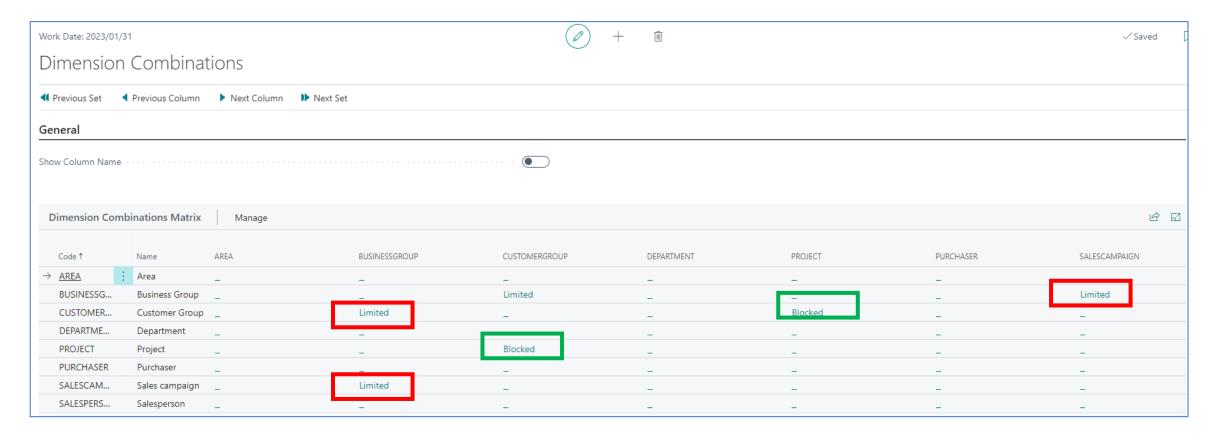
These dimensions might be used in our examples

After dimension value indent-2nd example

Code		Name	Dimension Value Type	Totaling	
10		Europe	Begin-Total		
20		Europe North	Begin-Total	2045	
30		Europe North (EU)	Standard		
40		Europe North (Non EU)	Standard		
45		Europe North, Total	End-Total		
46		Europe South	Begin-Total		
50		Europe South	Standard		
55	Europe, Total		End-Total	4655	
56		Europe South, Total	End-Total	1056	
60	America		Begin-Total		
70		America North	Standard		
80		America South	Standard		
85		America, Total	End-Total	6085	
90		South Africa	Begin-Total		
95		Joburg	Standard		
96	:	Durban	Standard		
97		SA,Total	End-Total	9097	



#### **Dimension combinations**



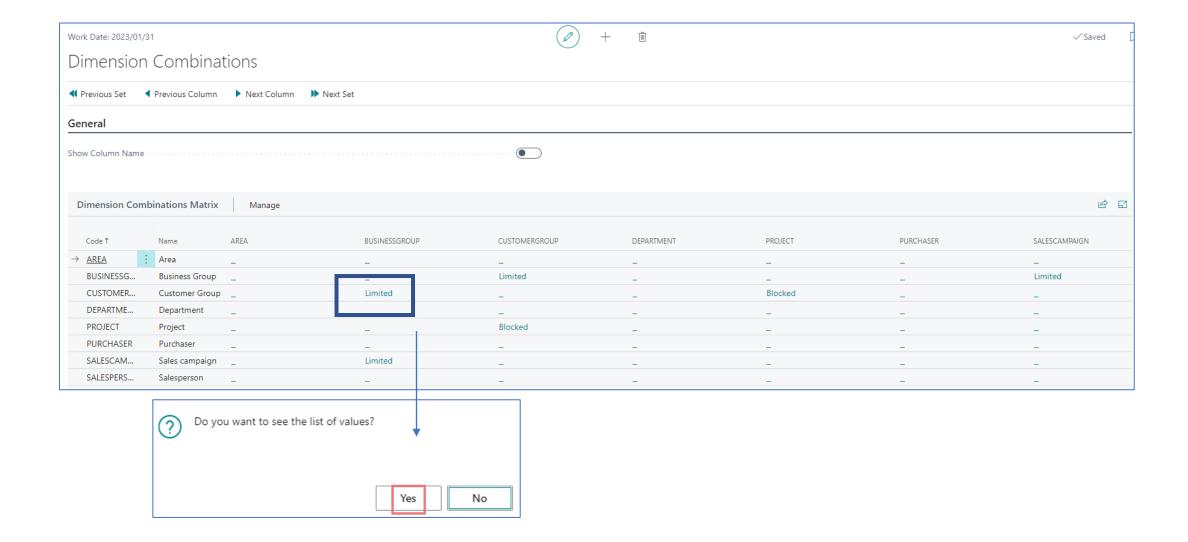
A **blocked dimension** combination means you cannot post both dimensions on the same entry regardless of what the dimension values are.

In contrast, a **limited dimension** combination means you can post both dimensions to the same entry, but only for certain combinations of dimension values.

# **Dimension combination**

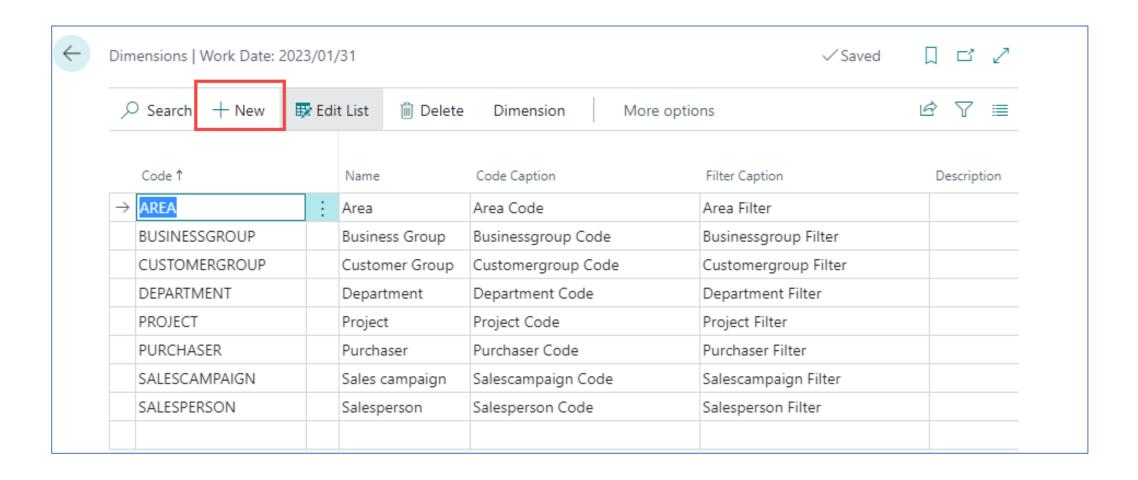
Field	Description			
No limitation	This dimension combination has no restrictions. All dimensions values are allowed.			
Limited	This dimension combination has restrictions depending on which dimension values that you enter. You must define the limitations on the <b>Dimension Value Combination</b> page.			
Blocked	This dimension combination is not allowed.			

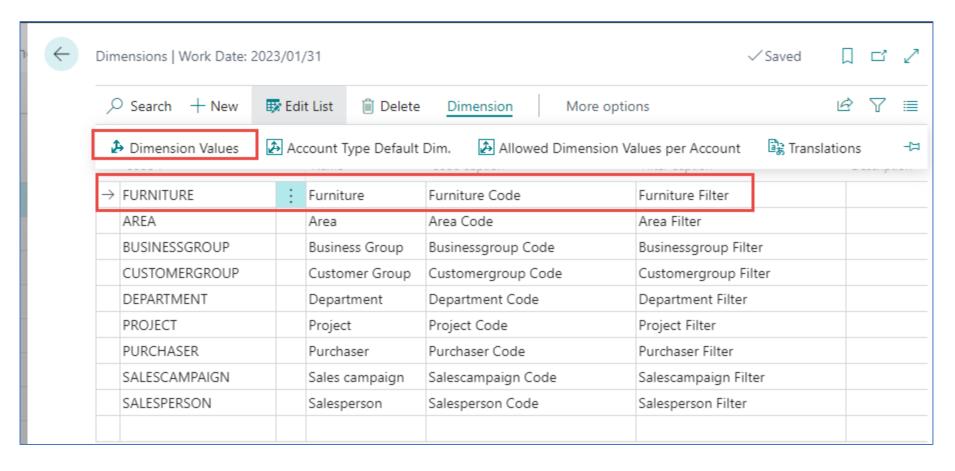
#### **Dimension combination**



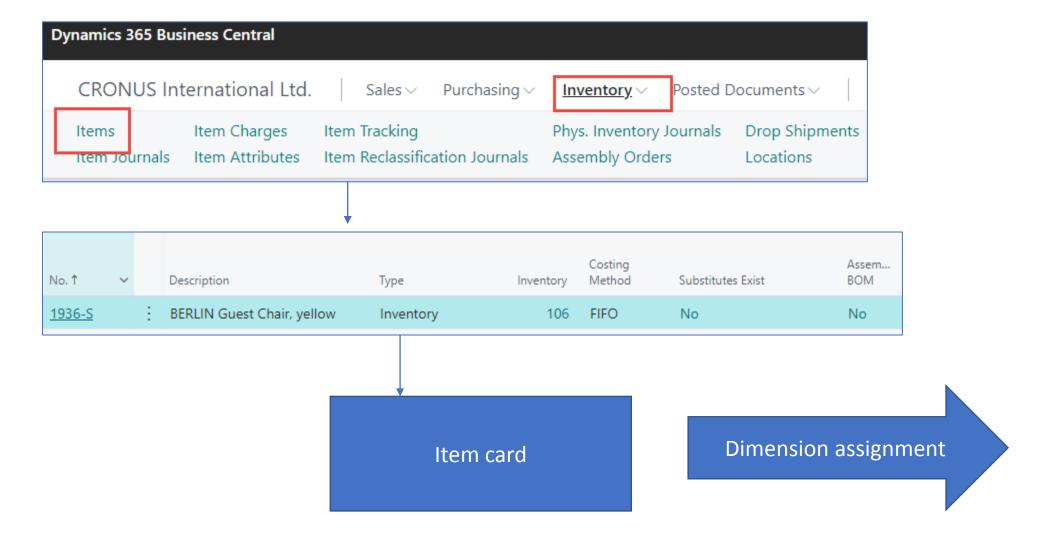
# **Dimension combination**

Dii	Dimension Value Combinations Matrix Manage								
	INTERCOMPANY								
$\rightarrow$	INSTITUTION	:	Institution	Blocked	_	_			
	INTERCOMPANY		Intercompany Customers	_	<u>-</u>	_			
	LARGE		Large Business	_	_	_			
	MEDIUM		Medium Business	_	_	_			
	PRIVATE		Private	_	<del>-</del>	_			
	CMAN		C 11D :						

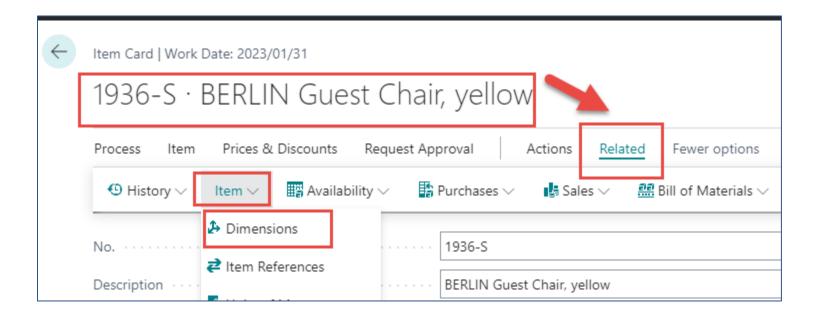




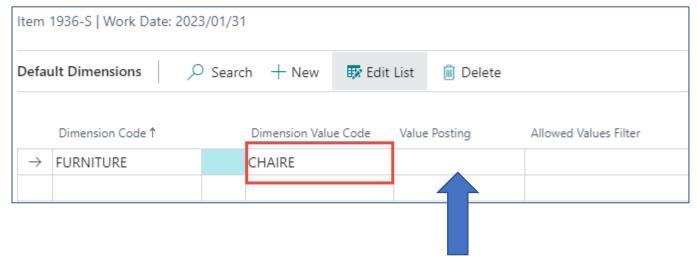
FURNITURE · Furniture   Work Date: 2023/01/31								
Dimension Values		Edit List	📋 Delete					
Code	Name		Dimension Value Type					
CHAIRE	CHAIRE		Standard					
TABLE	Table		Standard					
→ CUPBOARD	CUPBOARD		Standard					



#### Dimension value to item card



#### Dimension for our item card setup

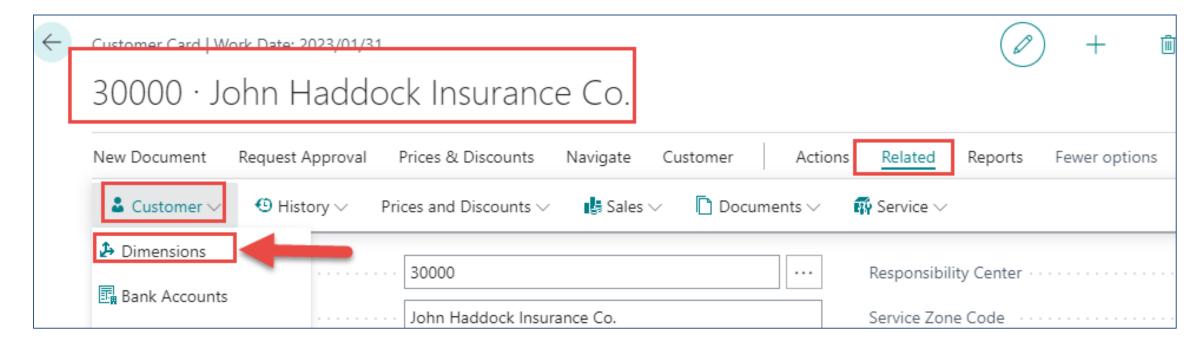


**Code Mandatory** - when posting (before posting,) it is necessary to select a dimension value appropriate to the specific business case (e.g.when you create Sales Order)

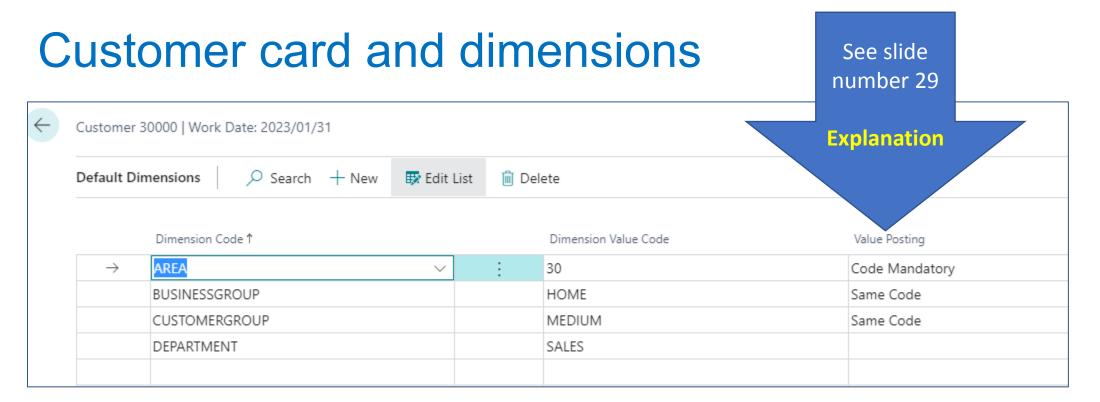
**Same Code** - you must have a pre-selected preset value . This value is always the same. So, for example, CUSTOMERGROUP cannot be other than MEDIUM.

Dimension Code 1		Dimension Value Code	Value Posting
AREA V	:	30	Code Mandatory
BUSINESSGROUP		HOME	Same Code
CUSTOMERGROUP		MEDIUM	Same Code
DEPARTMENT		SALES	-

#### Customer card and dimensions



**OR** use Customer icon - > Dimensions

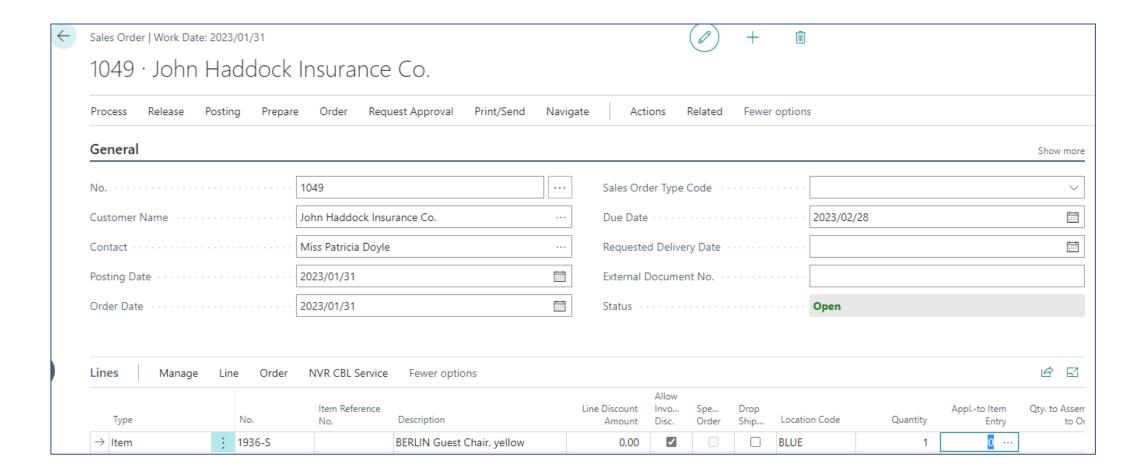


If you want to make a dimension **required**, but you do not want to assign a **default value** to the dimension, leave the **Dimension Value Code** field blank and then select **Code Mandatory** in the **Value Posting** field. Afterwards, however, the areas must be delivered manually

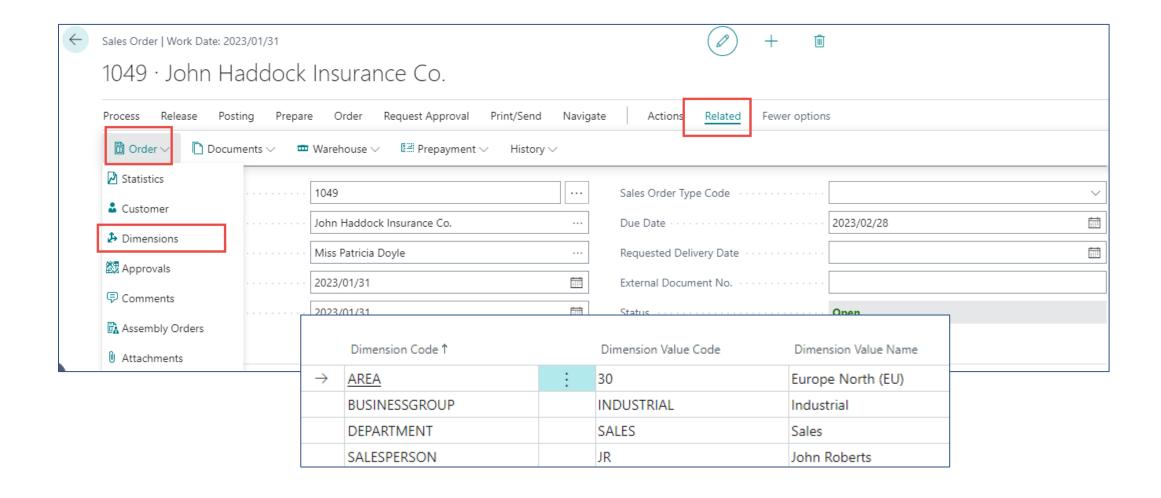
## Dimensions Value Posting statements

- If you want to require a dimension but don't want to assign a default value to the dimension, leave the **Dimension Value Code** field blank, then select **Code Mandatory** in the **Value Posting** field.
- If an account is used in an **Adjust Exchange Rates** or **Post Inventory Cost to G/L batch job**, do not select Code Mandatory or Same Code. These batch jobs cannot use dimension codes.

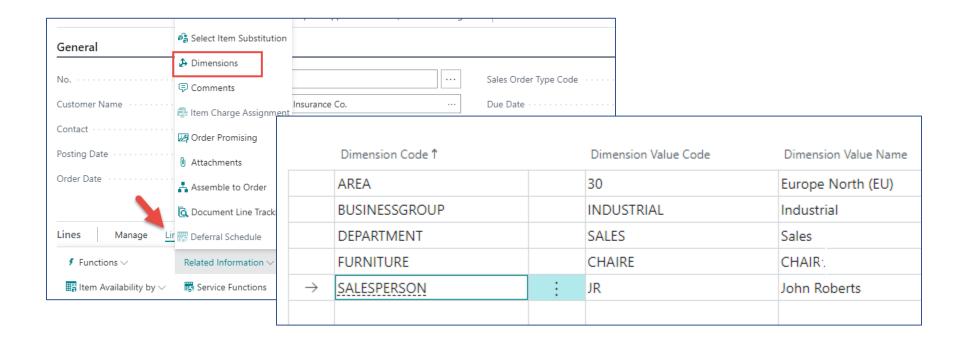
#### Sales Order and Dimensions



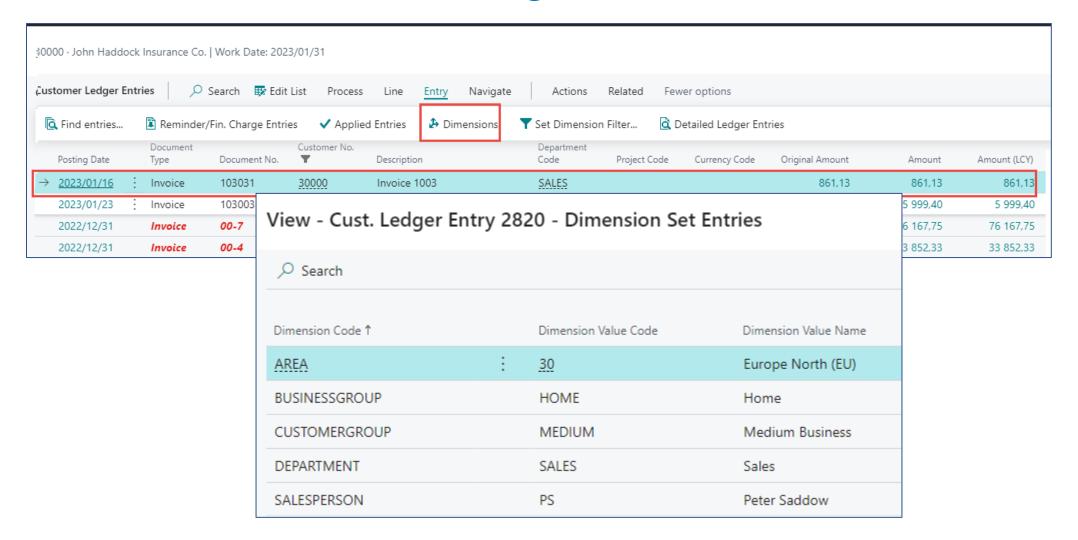
#### Dimensions in Sales Order Header



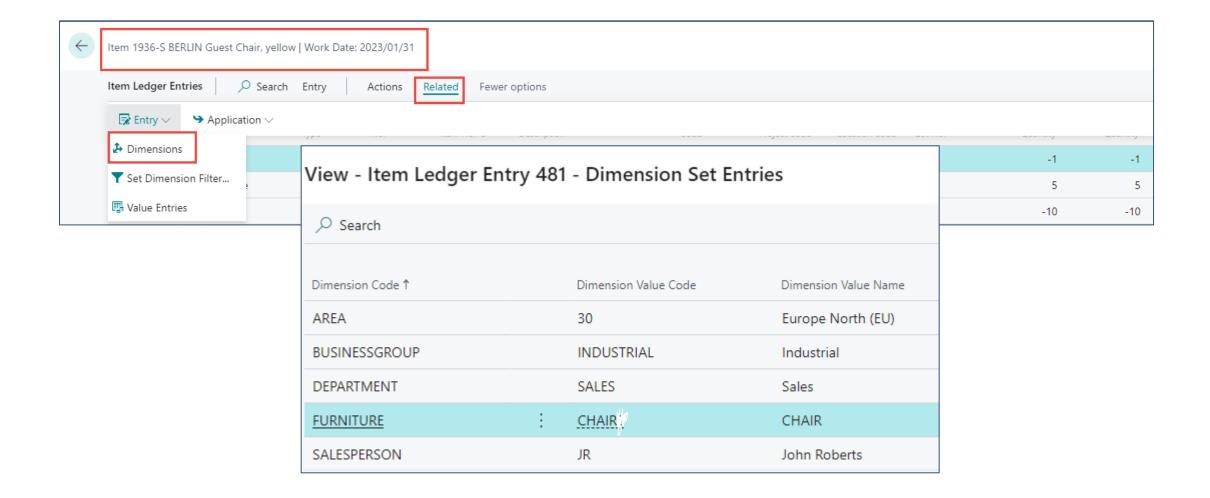
#### Dimensions in Sales Order Lines



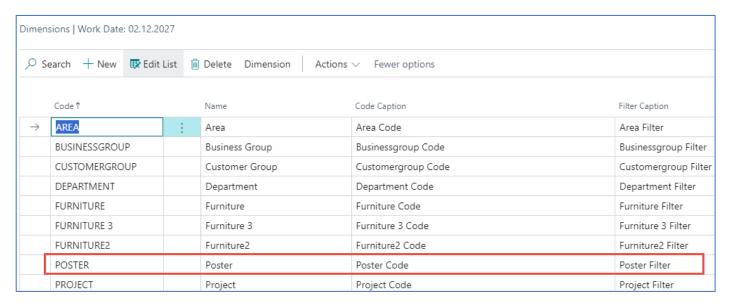
# Created Customer Ledger entries

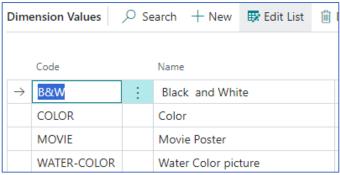


# Created Item Ledger entries



### Another set of dimensions (see teacher database)



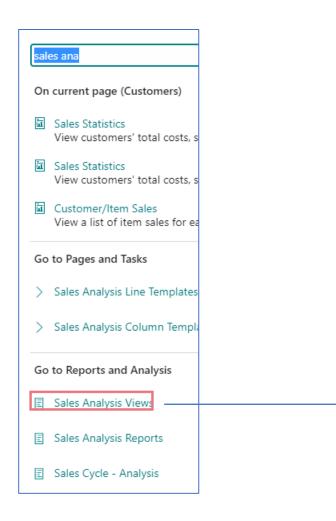


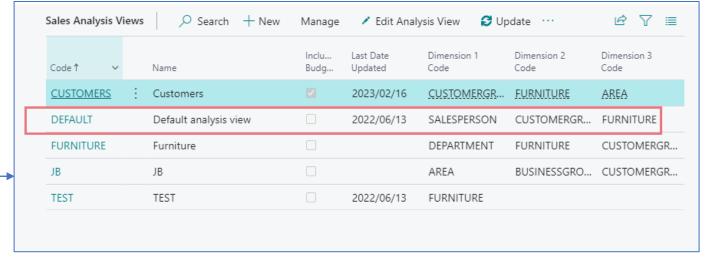
**Dimension values** 

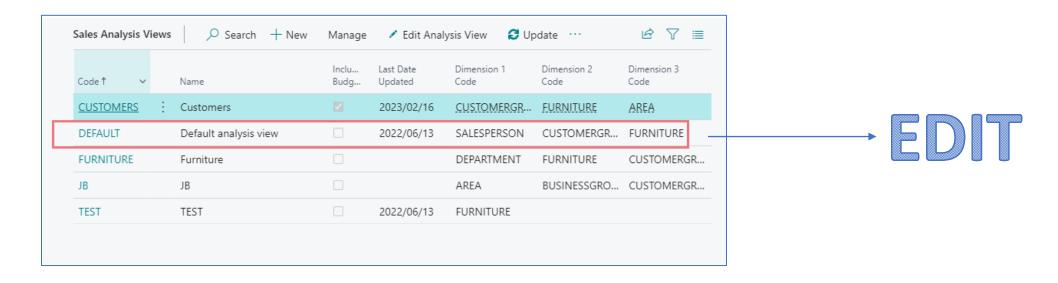
### Related items

Item			Show more	① Details ① Attachments (0)
No		Base Unit of Measure PCS	~	Picture ∨
Description		Item Category Code · · · · · · · · · · · ·	~	
Blocked · · · · · · · ·		Variant Mandatory if Exists Default (No)	~	
Type	~			
Inventory			Show more	CATAL
Shelf No. · · · · · · · · · ·		Qty. on Sales Order · · · · · · · · · · · · · · · · · · ·	0	
Inventory · · · · · · · · · · · · · · · · · · ·	8	Stockout Warning Default (Yes)	~	Marketing Text
Qty. on Purch. Order	0	Unit Volume	0	Ø Edit
Qty. on Prod. Order · · · · · · · · ·	0	Over-Receipt Code · · · · · · · · ·	~	Medusa Raft - 1: A Heart-Wrenching Tale of Survival and Despair This haunting image,
Qty. on Component Lines · · · · · · · · · ·	0			titled "Medusa Raft - 1," depicts the aftermath of a tragic shipwreck off the African coast in July 1816. The French ship, whose name
				remains unknown, was carrying 157
<u>Item</u>			Show more	① Details ① Attachments (0)
No		Base Unit of Measure PCS	~	Picture ∨
Description		Item Category Code · · · · · · · · ·	~	ROGART RERCINAN HENREID
Blocked · · · · · · · · ·		Variant Mandatory if Exists Default (No)	~	DUCATI DELIGNAR IL MILITO
Type	~			
Inventory			Show more	
Shelf No.		Qty. on Sales Order · · · · · · · · · · · · ·	0	MALE WALLS PRODUCTION
Inventory · · · · · · · · · · · · · · · · · · ·	7	Stockout Warning Default (Yes)	~	ANNO-WED-GRENSTREET-CORRE
Qty. on Purch. Order	0	Unit Volume · · · · · · · ·	0	Bland Is MC440. CMT0
Qty. on Prod. Order · · · · · · · · · · · ·	0	Over-Receipt Code · · · · · · · ·	~	Marketing Text
Qty. on Component Lines · · · · · · · · ·	0			Ø Edit
				Humnim H Rogart   Reraman

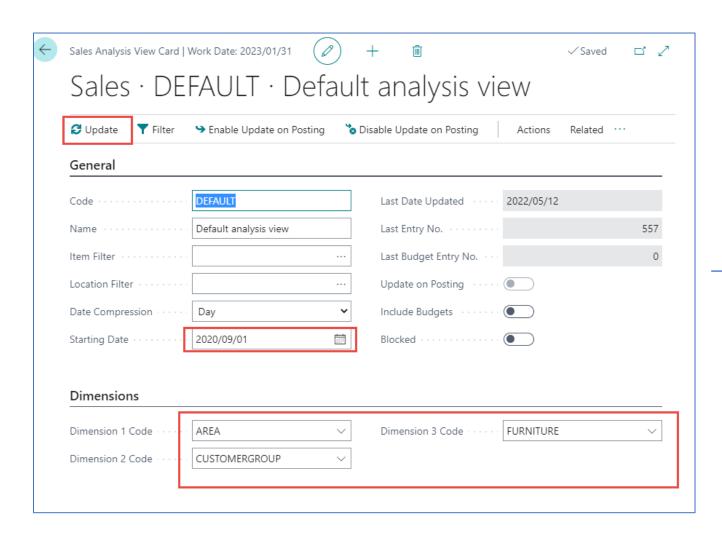
	Dime	ension Values	ρ S∈	earch + New	Edit List	ı	
\		Code		Name			
	$\rightarrow$	B&W	:	Black and Whi	te		
	,	COLOR		Color			
		MOVIE		Movie Poster			
		WATER-COLOR		Water Color pic	ture		





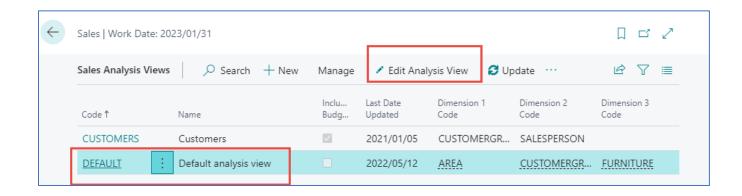


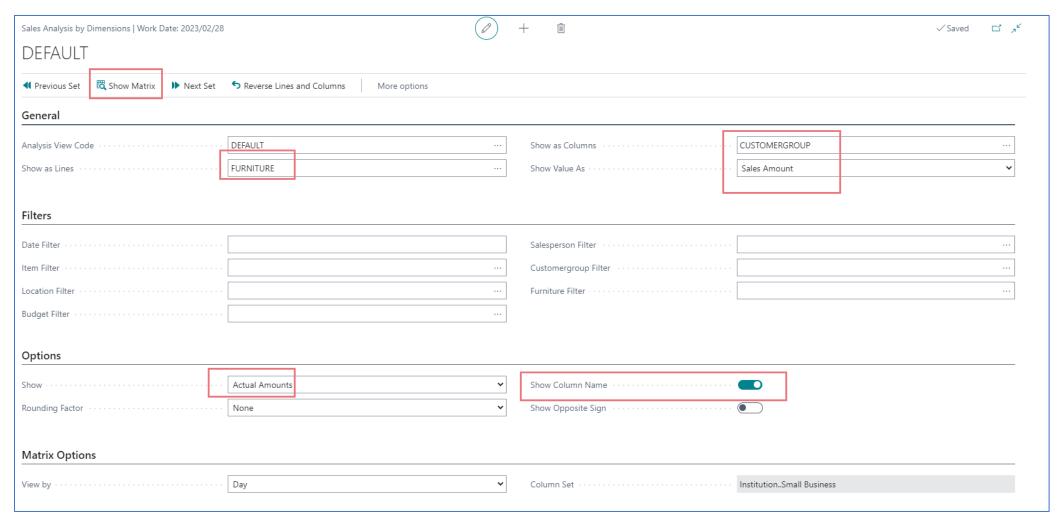
#### Analysis by Dimensions – view



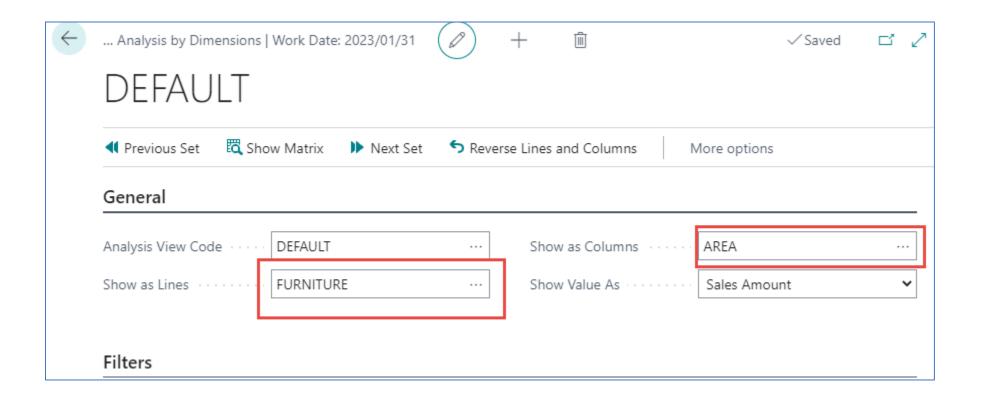
## \* UPDATE

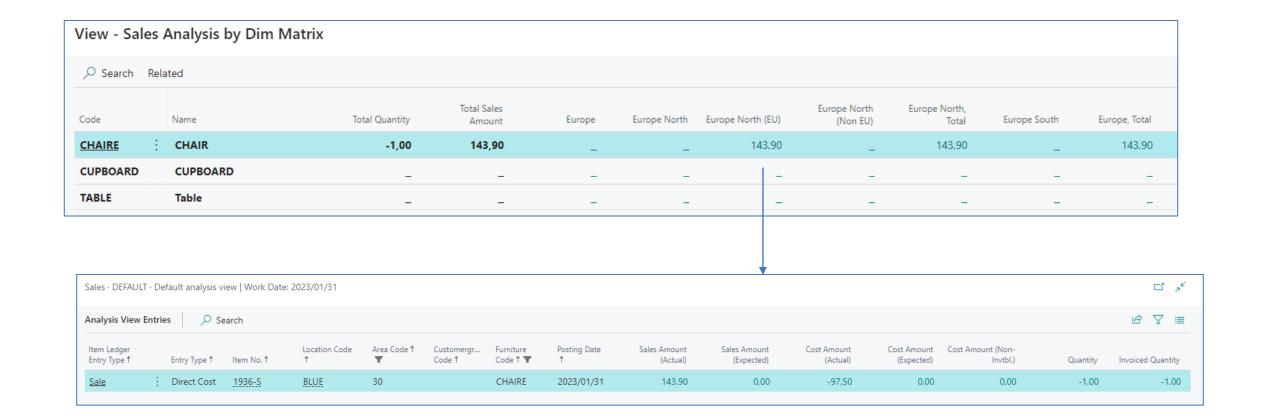
Update allows all entries set in filters to be included in the analysis view





View - Sales Analysis by Dim Matrix									
	I								Ė
Code	Name	Total Quantity	Total Sales Amount	Institution	Intercompany Customers	Large Business	Medium Business	Private	Small Business
CHAIRE	CHAIR	-83,00	10 840,66	-	_	2 392,30	4 439,62	-	1 268,04
CUPBOARD	CUPBOARD	-2,00	1 949,61	_	_	_	1 949,61	_	_
TABLE	Table	-2,00	819,78	_	_	_	819,78	_	_
WHITBOARD	WHITBOARD	-26,00	24 169,76	_	_	2 631,96	5 848,80	_	5 848,80





## Another type of analysis – Customer type

View - Sales	s Analysis by Dim Matrix						7 <sup>k</sup> ×
∠ Search Re	elated						ıŝ
Code	Name	Total Quantity	Total Sales Amount	CHAIR	CUPBOARD	Table	WHITBOARD
<u>10</u>	Europe	_	-	-	-	-	-
20	Europe North	-	_	_	-	_	-
30	Europe North (EU)	-287,90	73 347,05	8 106,42	1 949,61	819,78	14 329,56
40	Europe North (Non EU)	-22,00	5 446,07	137,44	_	_	_
45	Europe North, Total	-309,90	78 793,12	8 243,86	1 949,61	819,78	14 329,56
50	Europe South	_	-	_	_	_	_
55	Europe, Total	-309,90	78 793,12	8 243,86	1 949,61	819,78	14 329,56
60	America	_	-	-	_	_	-
70	America North	-28,00	3 112,04	-	_	_	_
80	America South	-	-	-	_	_	-
85	America, Total	-28,00	3 112,04	-	_	_	-
90	SA	-	_	_	_	_	_
91	Durban	-	_	_	_	_	_
92	Total SA	_	_	-	_	_	_

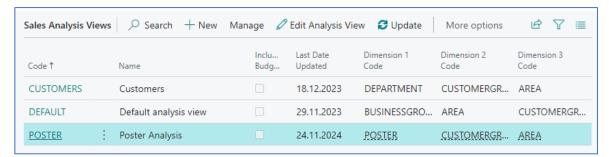
Dimensions play an important role in business intelligence, such as when defining analysis views. For more information, see <u>Analyze Data by Dimensions</u>.

<u>Analyze Data by Dimensions - Business Central | Microsoft Docs</u>

An analysis by dimensions displays a selected combination of dimensions. You can store and retrieve each analysis you have set up. The information for setting up an analysis is stored on an Analysis View card to simplify future analysis.

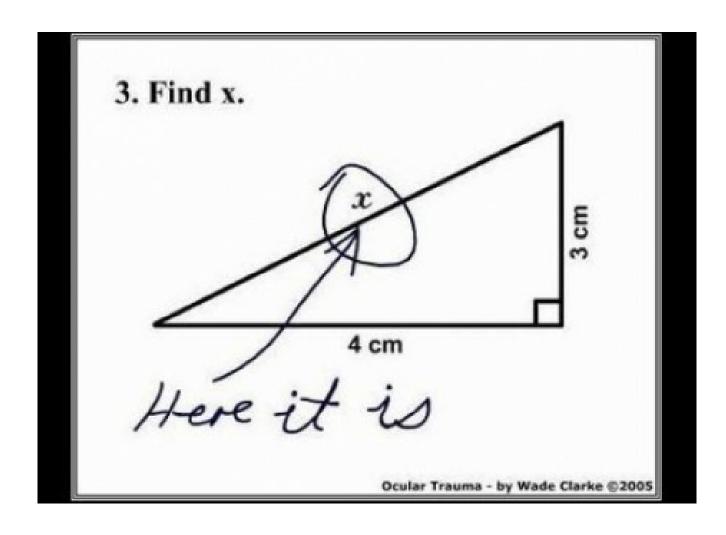
- 1. Choose the icon Searching window, enter **Analysis Views**, and then choose the related link.
- 2.On the **Analysis View List** page, choose the **New** action.
- 3. Fill in the fields as necessary. Hover over a field to read a short description.
- 4.To add other dimension codes in addition to the four on the **Dimensions** FastTab, choose the **Filter** action, fill in the fields, and then choose the **OK** button.
- 5.To update the view, choose the **Update** action.

## Poster Analysis

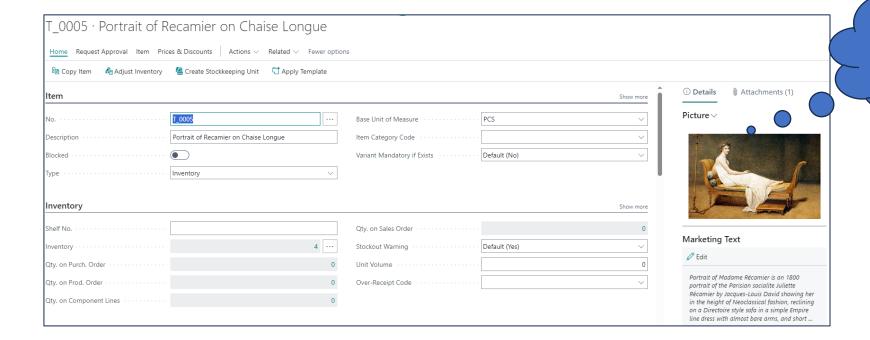




View - Sales Analysis by Dim Matrix										
Code		Name	Total Quantity	Total Sales Amount	BRNO	INSTITUTION	INTERCOMPANY	LARGE	MEDIUM	
B&W	:	Black and White	-	_	_	_	_	_	_	
COLOR		Color	-8,00	840,00	_	_	_	540,00	300,00	
MOVIE	÷	Movie Poster	-3,00	36,00	_	_	_	36,00	_	
WATER-COLOR		Water Color picture	-2,00	40,00	-	-	-	-	40,00	



$$a^2 + b^2 = c^2 \rightarrow 4 * 4 + 3*3 = 25 \rightarrow c = 5$$



Au revoir mes amis!!