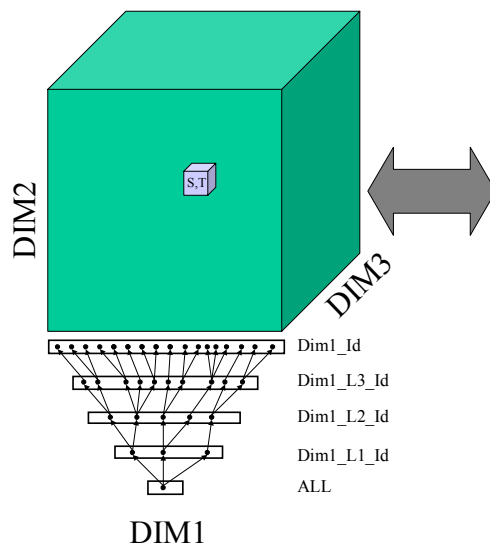


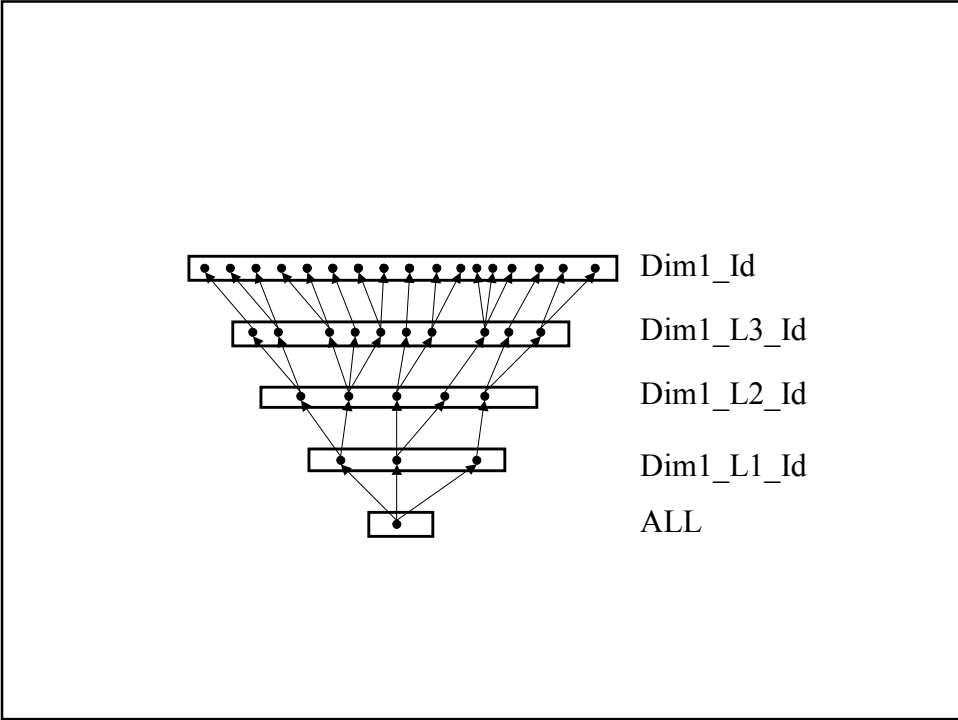
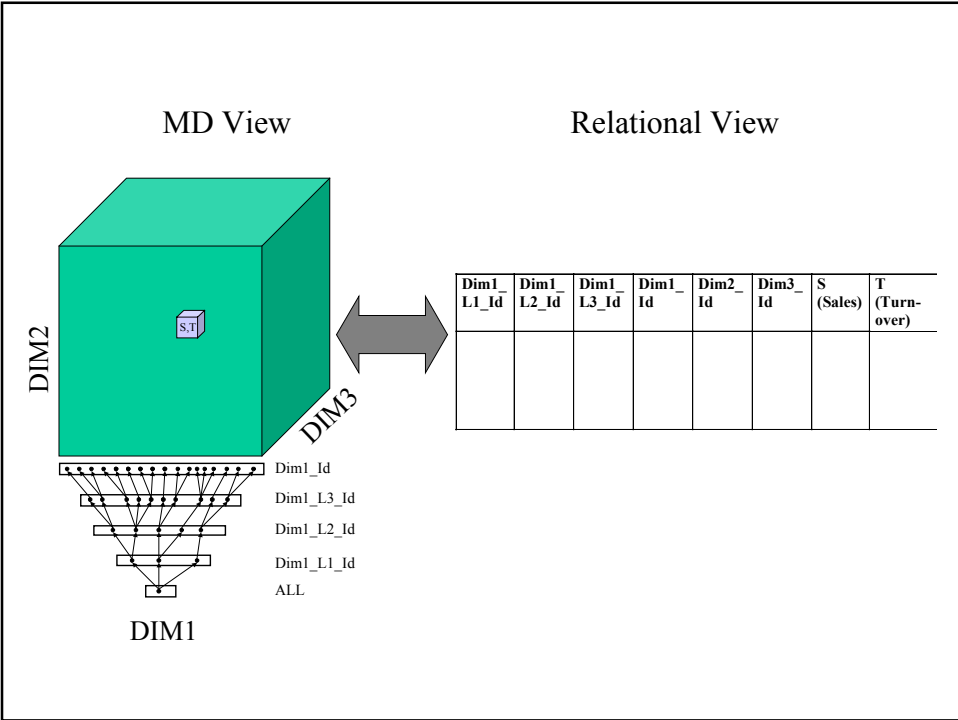
## Kap. 10 Anwendungen Relationaler Systeme

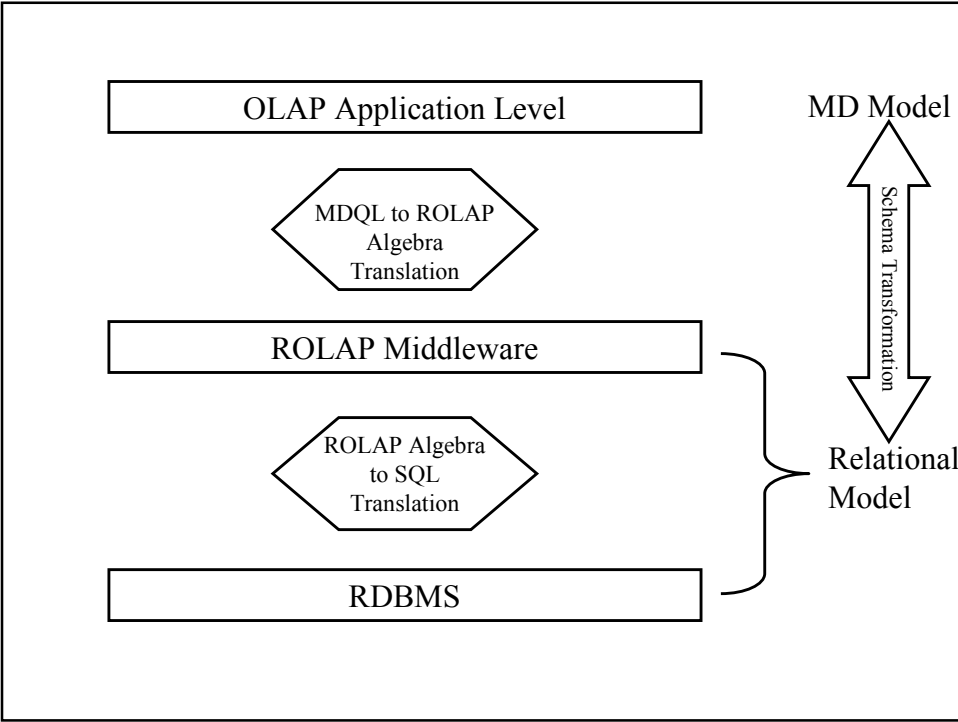
### Kap 10.2 Datawarehouse (DWH)

Decision Support Systeme fürs Management

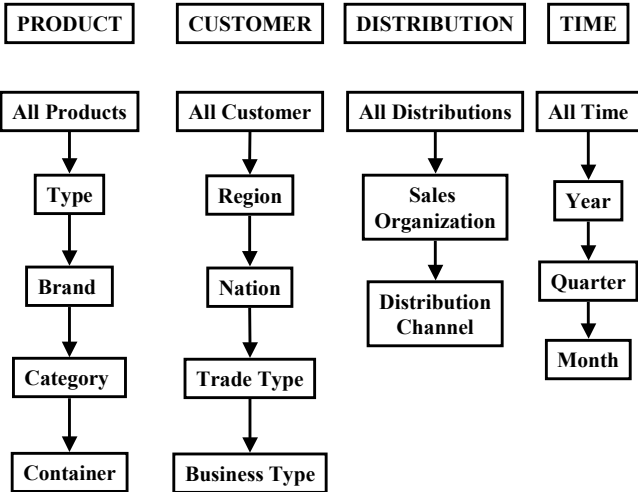
Online Analytical Processing (OLAP)

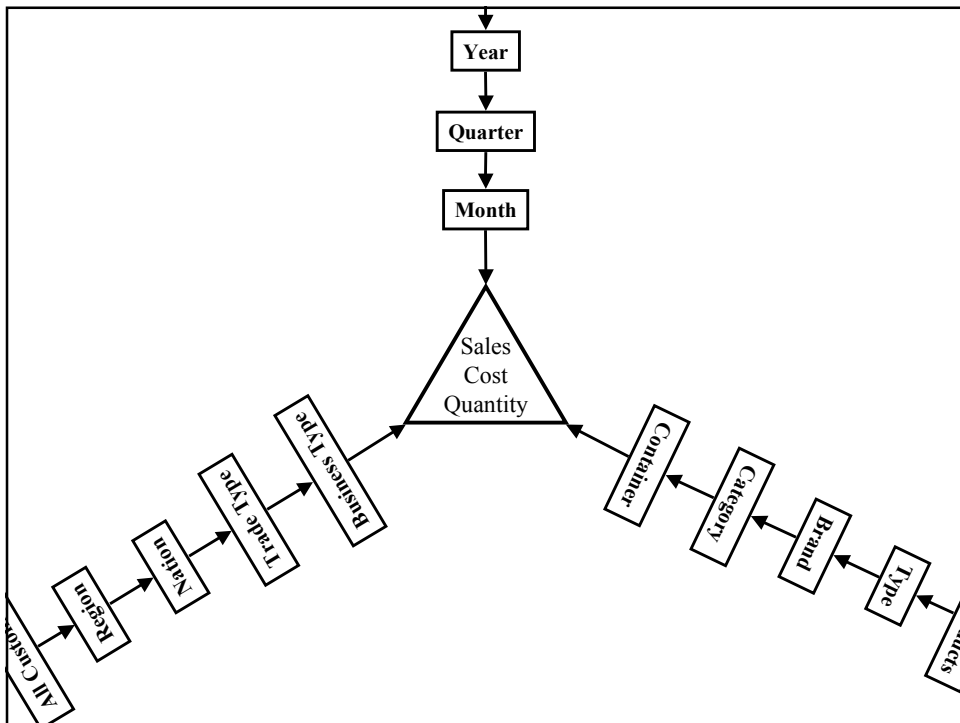






**Dimensionen mit Hierarchien**





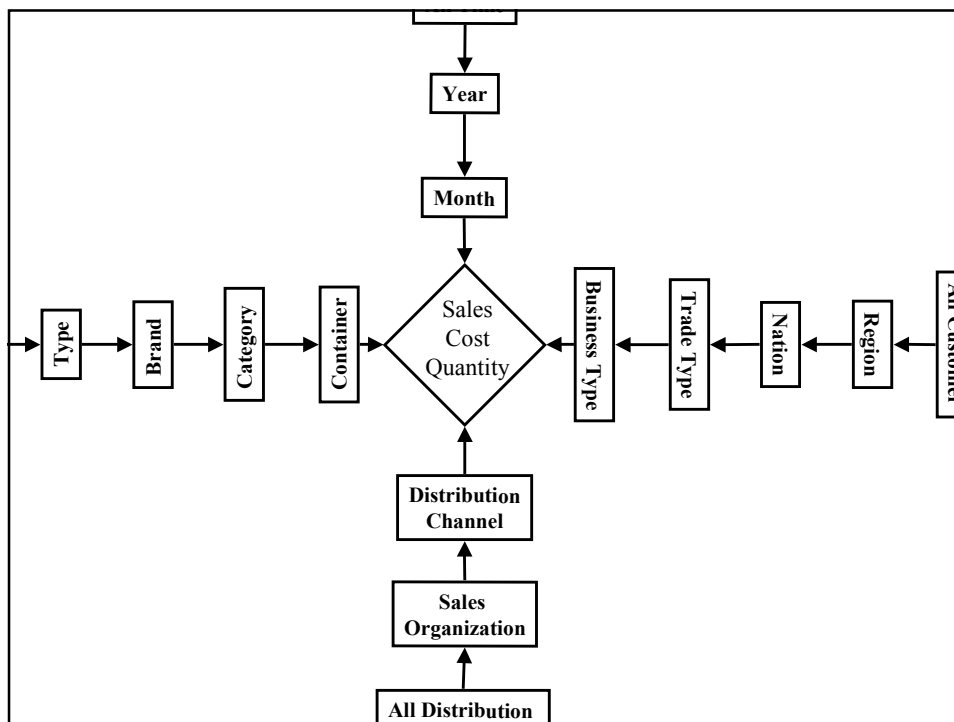
### Typische Aggregations-Anfragen

```

select Brand, Quarter, sum(Sales)
from SalesCube
group by Brand, Quarter
having      sum(Sales) > 100.000
  
```

## Typische Aggregations-Anfragen mit Restriktionen pro Dimension

```
select Brand, Quarter, sum(Sales)
  from SalesCube
  where Year = 2002 and Nation = Germany
  group by Brand, Quarter
  having      sum(Sales) > 100.000
```



Sum - Sales		Year	Quarter				1998 Total	Total
		1998	1	2	3	4		
Region	Nation							
Asia	China		1				4	7
	Japan							
Asia Total			2				5	8
Europe	France							
	Germany		1				4	7
	Spain							
Europe Total			2				5	8
Total			3				6	9

*pot(R, G, F)*

$$G = \left\{ \begin{array}{l} \{Year, Quarter, Region, Nation\}, \{Year, Quarter, Region\}, \{Year, Quarter\}, \\ \{Year\}, \{Year, Region, Nation\}, \{Region, Nation\}, \{Region, Nation\}, \{Nation\} \end{array} \right\}$$