OLAP Theory-English version
On-Line Analytical processing (Buisness Intelligence)
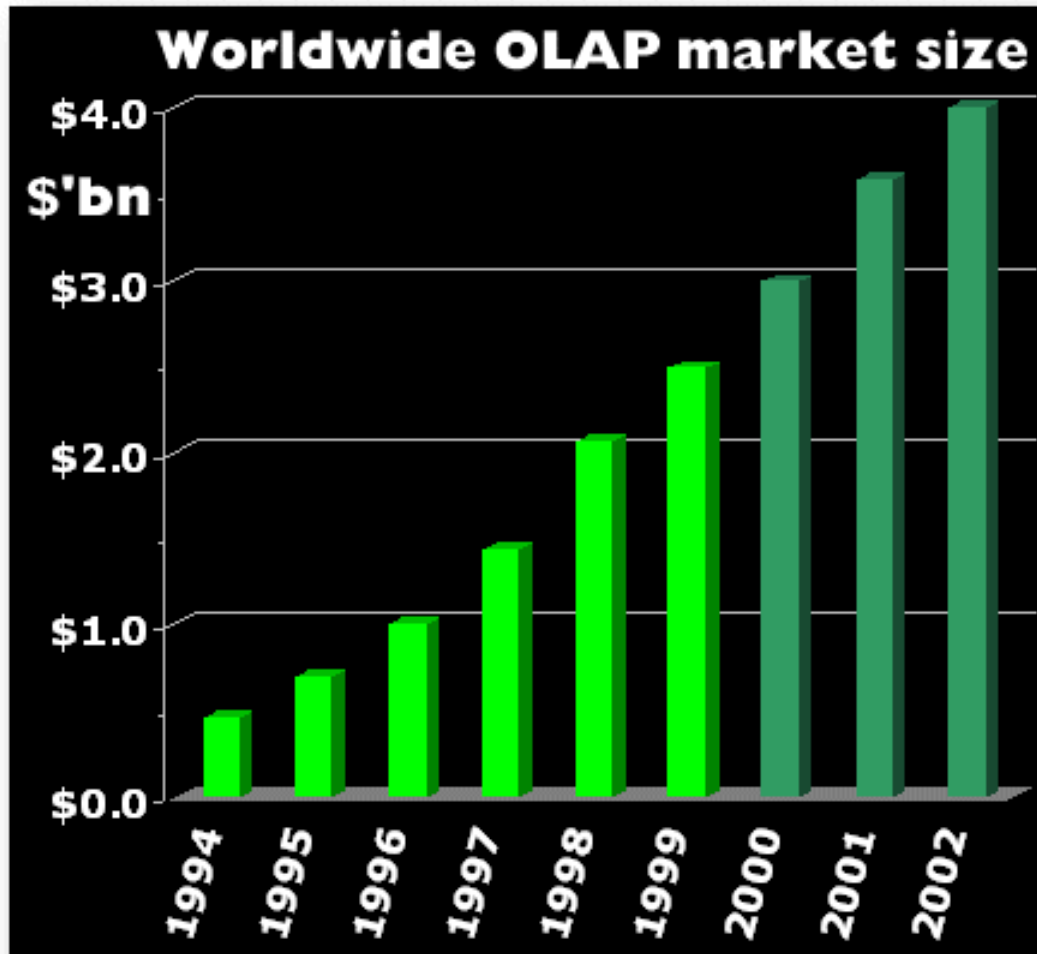
[Ing.Skorkovský,CSc]
 KPH_ESF_MU

Agenda

- The Market
- Why OLAP
- Introduction to OLAP
- OLAP Terms and Concepts
- Summary

OLAP market size

Why OLAP

- **The Right Information In The Right Place At The Right Time**
- **Why**
  - More self-sufficient Business users
  - Keep the integrity of the data
  - Reduces the query drag(burden) and network traffic
  - Organization can respond more quickly to market demands

Introduction to OLAP

"OLAP enables analysts, managers, and executives to gain insight into data through fast, consistent, interactive access to a wide variety of possible views of information. OLAP transforms raw data so that it reflects the real dimensionality of the enterprise as understood by the user. "

Introduction to OLAP

- Users
  - Analysts, managers and executive managers
- Access
  - Fast consistent, interactive
  - Wide variety of possible views
- Transformation
  - Raw data
  - Real dimensionality of enterprise

Introduction to OLAP

- Organizational functions
  - Finance
    - Budgeting
    - Performance analysis
  - Sales
    - Sales analysis and forecasting
  - Marketing
    - Market research analysis
    - Market/customer segmentation
  - Purchase
    - Cost of materials
  - Production
    - Cost of conversion
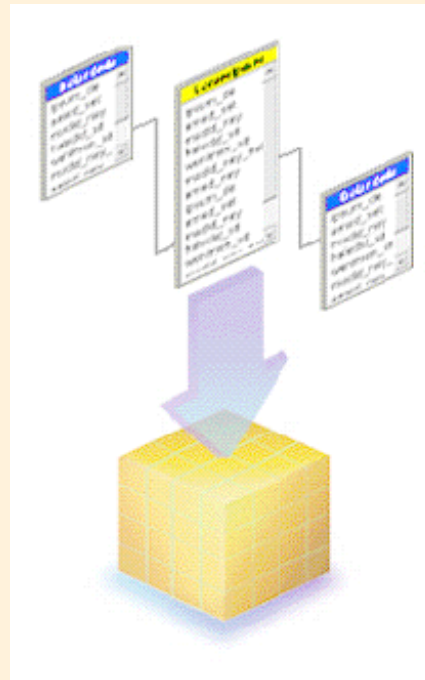 - Distribution
    - Cost of shipping
  - etc

OLAP Terms and Concepts
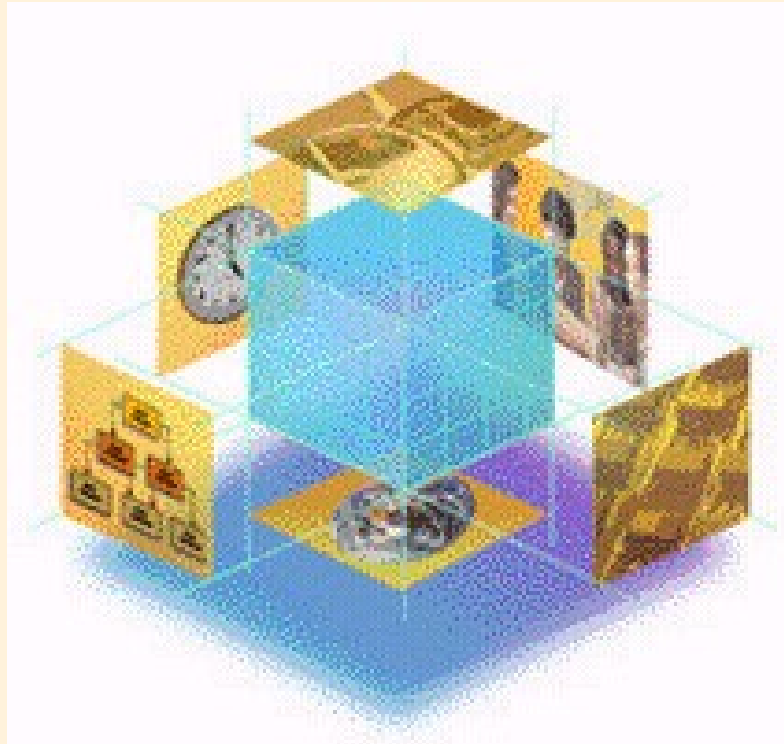
OLAP Terms and Concepts
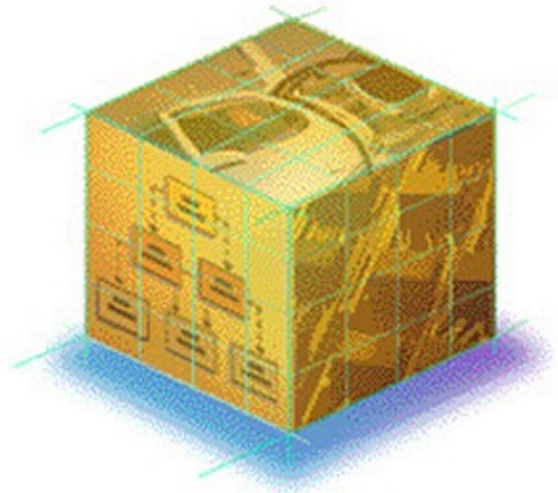
- Relational database

- Multidimensional database
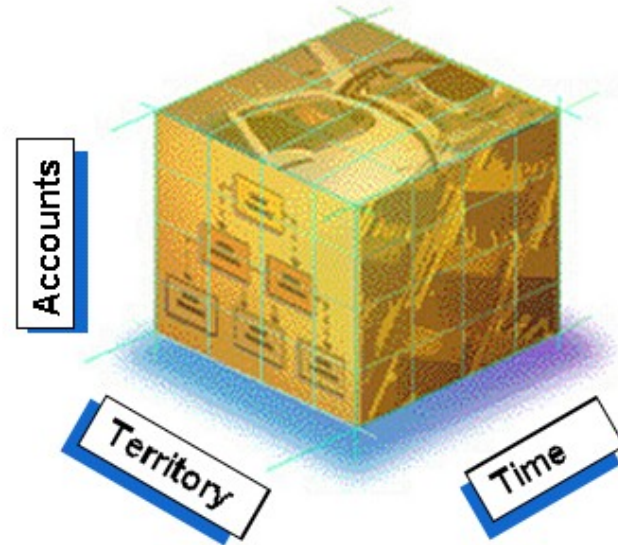

Relational database

Multidimensional database

OLAP Terms and Concepts
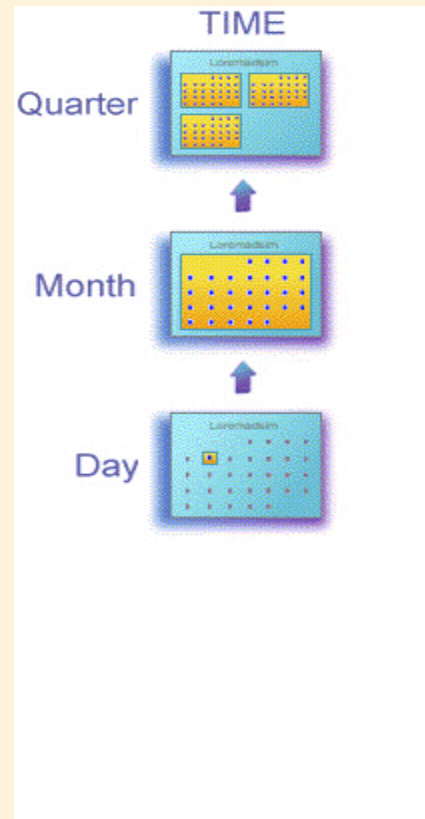
- Cube
  - Information Is conceptually viewed as cubes.

OLAP Terms and Concepts

- Cube
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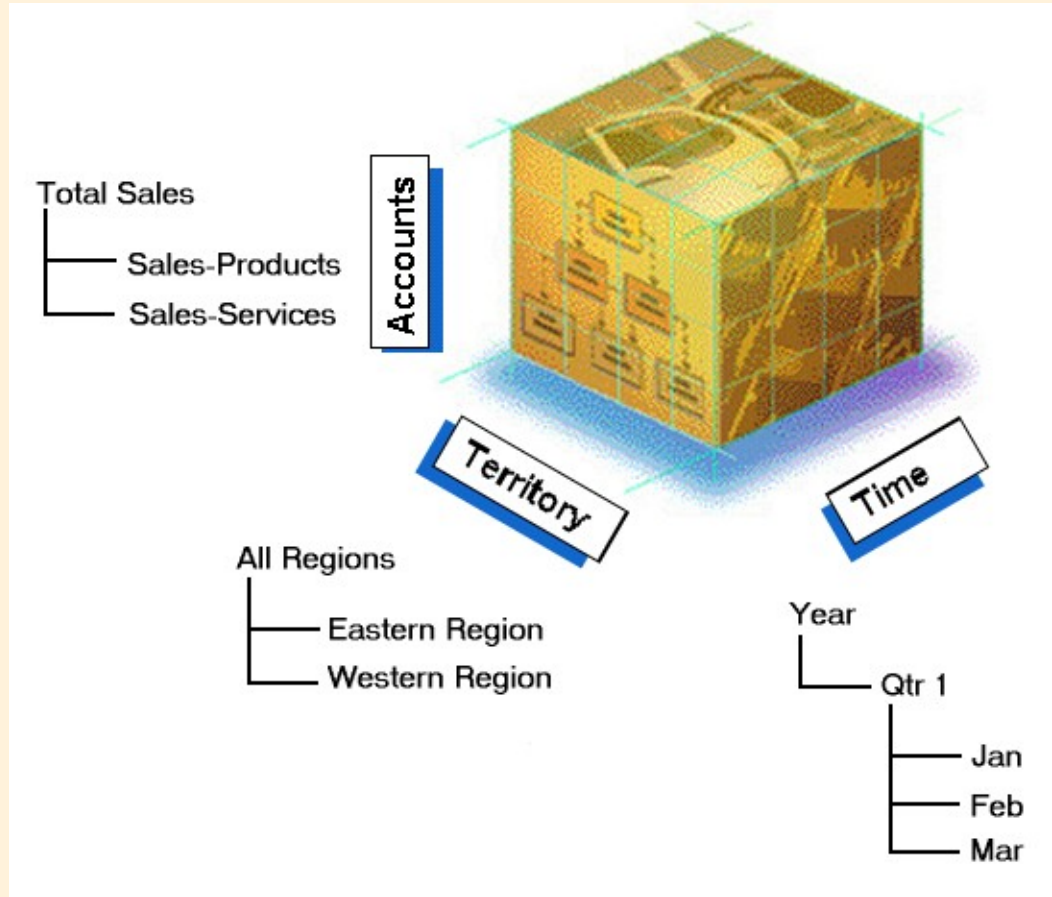- Dimension
  - Distinct categories for business data.

OLAP Terms and Concepts

- Cube
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- Dimension
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- Hierarchy
  - Levels of details on the data.

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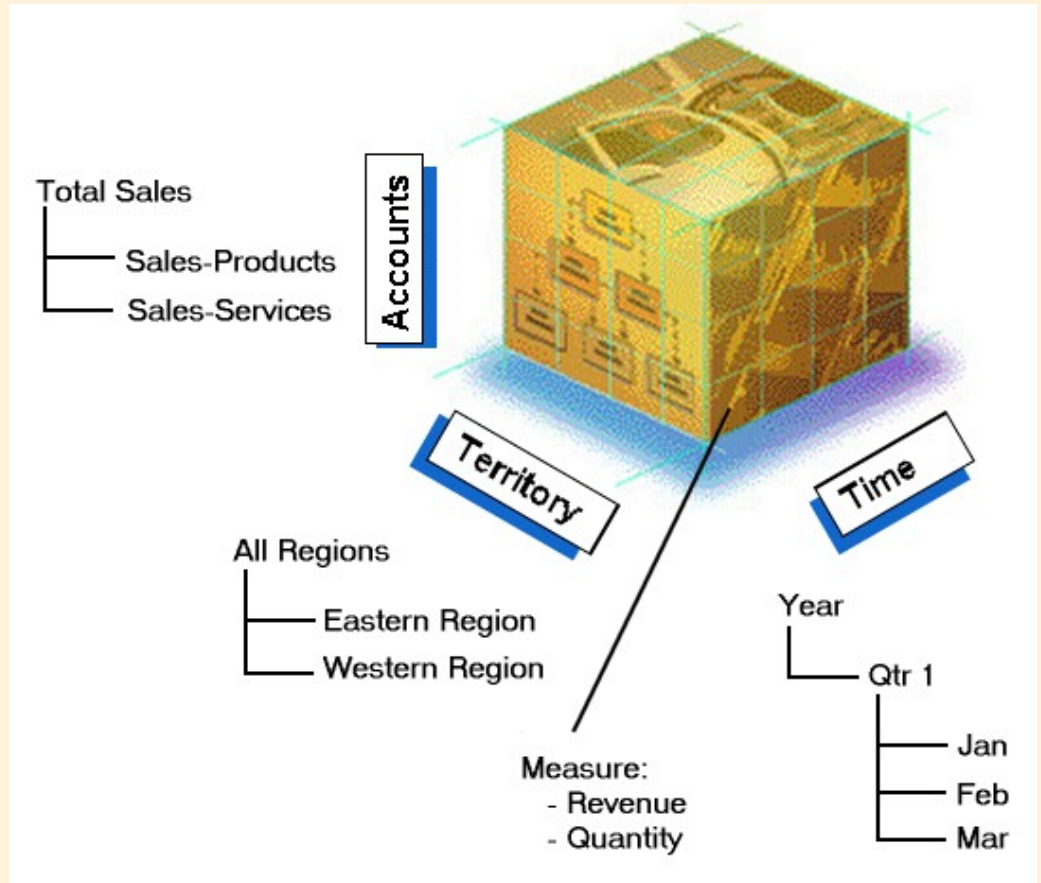 - Levels of details on the data.

OLAP Terms and Concepts

- Cube
  - Information Is conceptually viewed as cubes.
- Dimension
  - Distinct categories for business data.
- Hierarchy
  - Levels of details on the data.
- Measure
  - Quantitative values.

OLAP Terms and Concepts

Cube
Information Is conceptually viewed as cubes.

Dimension
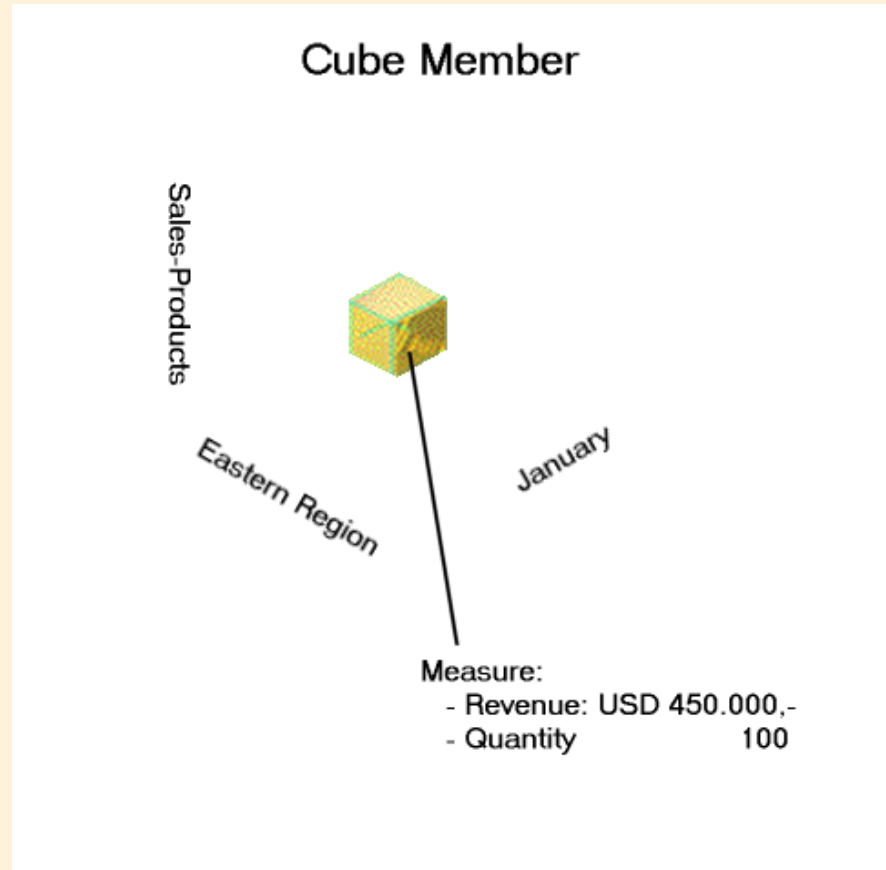Distinct categories for business data.
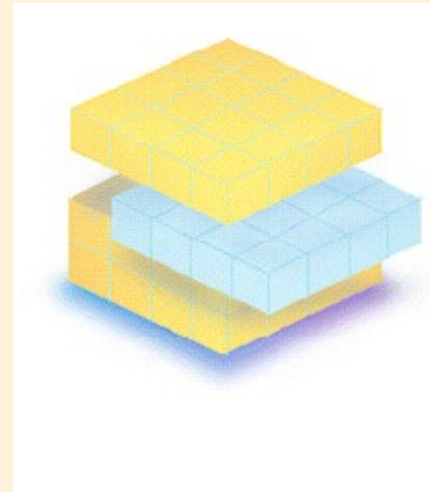
Hierarchy
Levels of details on the data.

Measure
Quantitative values.

Cube Member

Sales-Products

Eastern Region

January

Measure:
- Revenue: USD 450.000,-
- Quantity   100
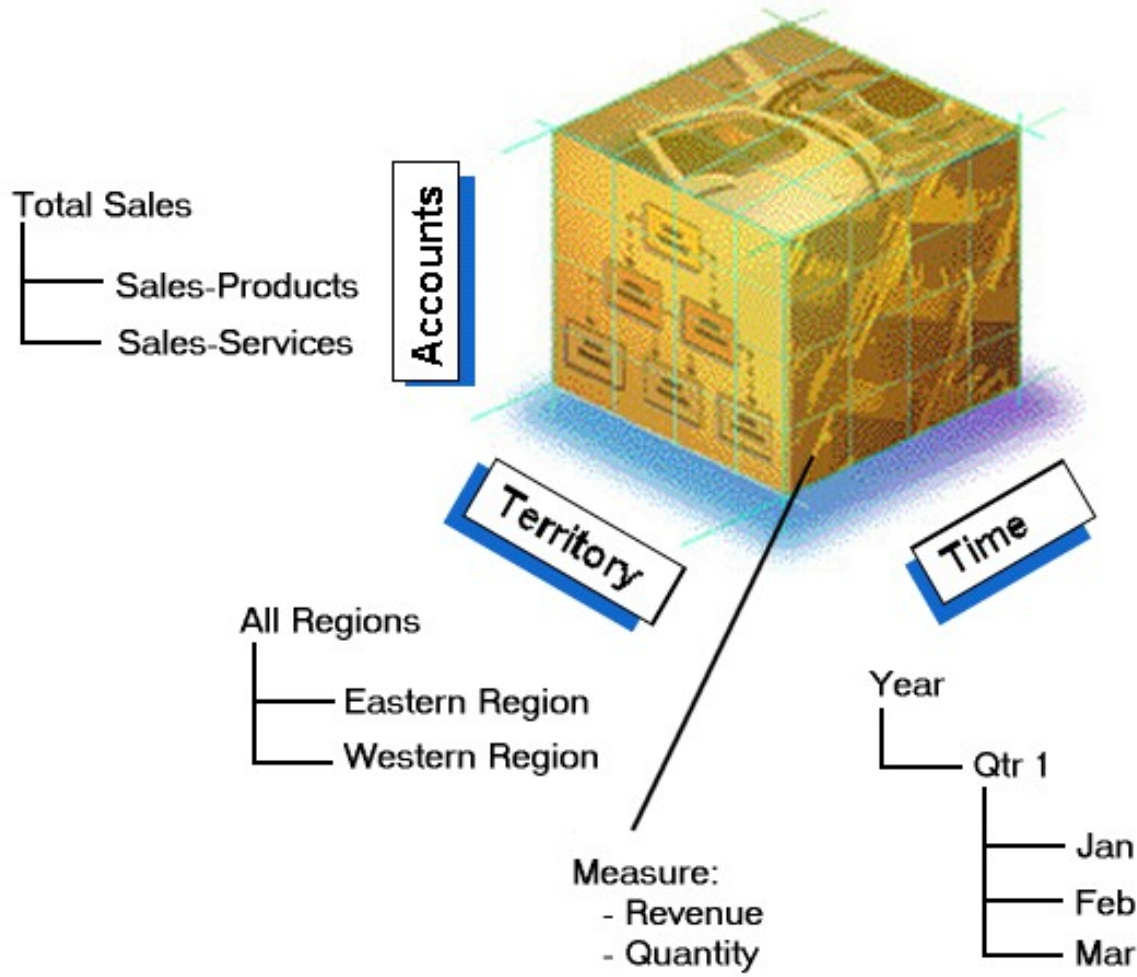
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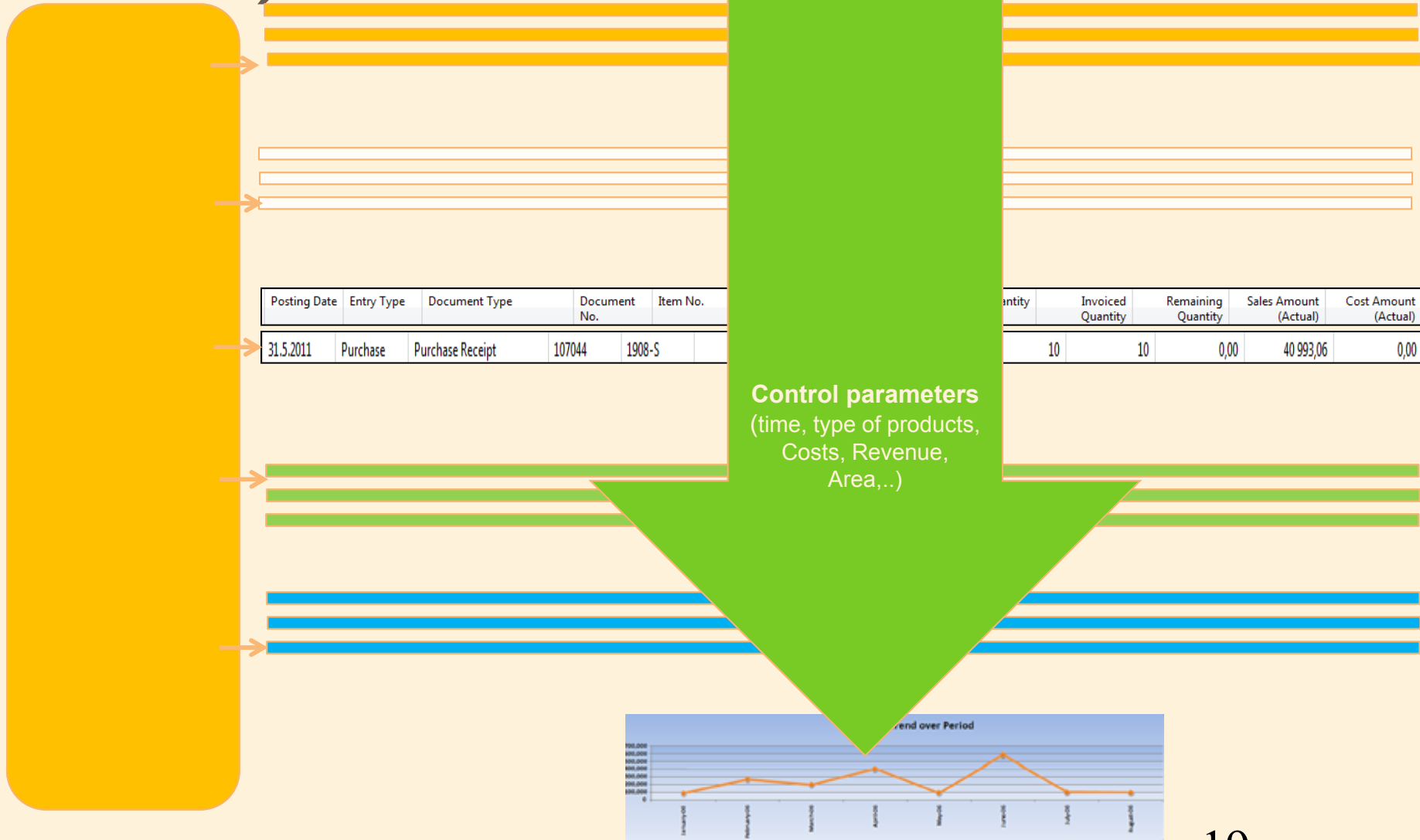- Data slice
  - A subset of the data in a partition.

OLAP Cube

Total Sales
- Sales-Products
- Sales-Services

Accounts

Territory

Time

All Regions
- Eastern Region
- Western Region

Measure:
- Revenue
- Quantity

Year
- Qtr 1
  - Jan
  - Feb
  - Mar

Reporting (NAV tools or JETs)

Main principles (source tables and their entries)

Posting Date	Entry Type	Document Type	Document No.	Item No.		antity	Invoiced Quantity	Remaining Quantity	Sales Amount (Actual)	Cost Amount (Actual)
31.5.2011	Purchase	Purchase Receipt	107044	1908-S		10	10	0,00	40 993,06	0,00

Control parameters
(time, type of products, Costs, Revenue, Area,..)

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Some chosen analysis asked by CFO of company X in Czech Republic

○ Working capital – setup of the accounting schedule from NAV

Some chosen analysis asked by CFO of company X in Czech Republic

- Working capital – Show of the results from NAV

Some chosen analysis asked by CFO of company X in Czech Republic

⚙ Working capital – Show of the results from JETs

Working Capital & Current Ratio

Report Date   8/23/2011

	January	February	March	April	May	June	July	August	September	October	November	December
2011												
Current Assets	74,405	(90,939)	(16,110)	136,096	(92,528)	101,144	(155,777)	174,615	(363,170)	1,015	72,525	(72,789)
Current Liabilities	109,902	(62,118)	(14,989)	127,587	(76,890)	78,566	(193,757)	112,467	(376,168)	2,070	79,494	(65,841)
Working Capital	(35,497)	(28,821)	(1,121)	8,508	(15,638)	22,579	37,980	62,148	12,998	(1,055)	(6,969)	(6,948)
Current Ratio	0.68	1.46	1.07	1.07	1.20	1.29	0.80	1.55	0.97	0.49	0.91	1.11
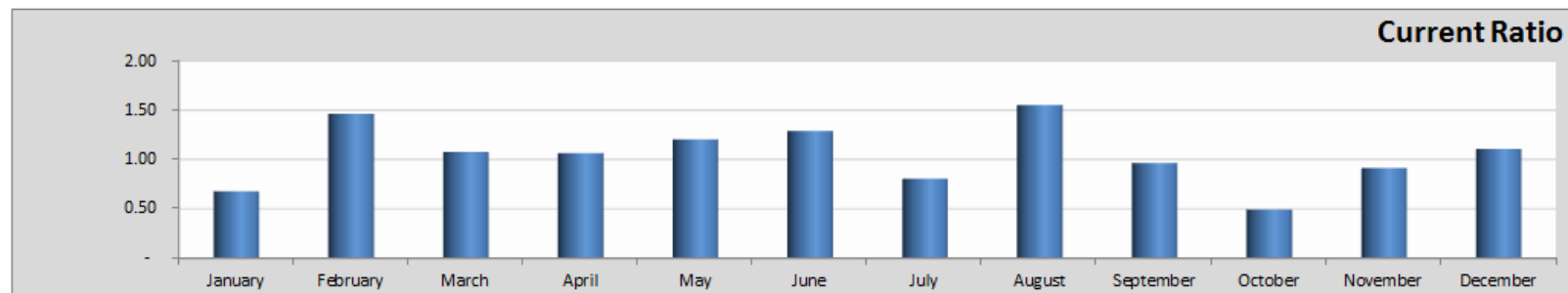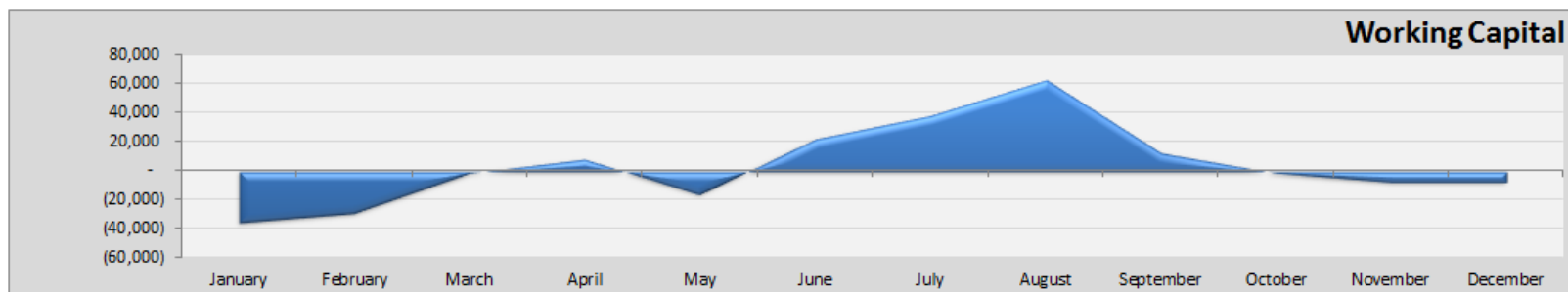
Some chosen analysis asked by CFO of company X in Czech Republic

Inventory - Dashboard

Company
- JetCorp, Belgium
- JetCorp, North America

Location
- Amsterdam Warehouse 1
- Amsterdam Warehouse 2

Item Category
- Awards & Recognition
- Bags & Totes

Product Group
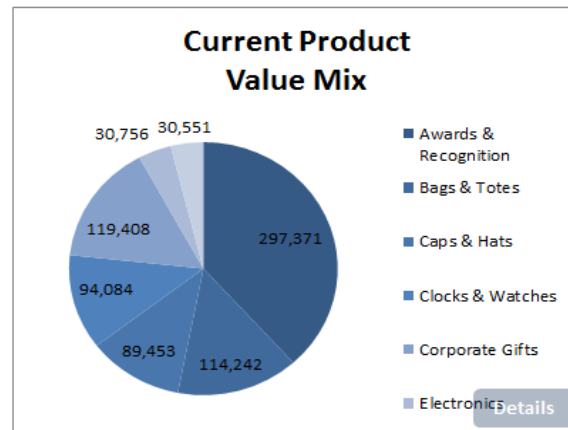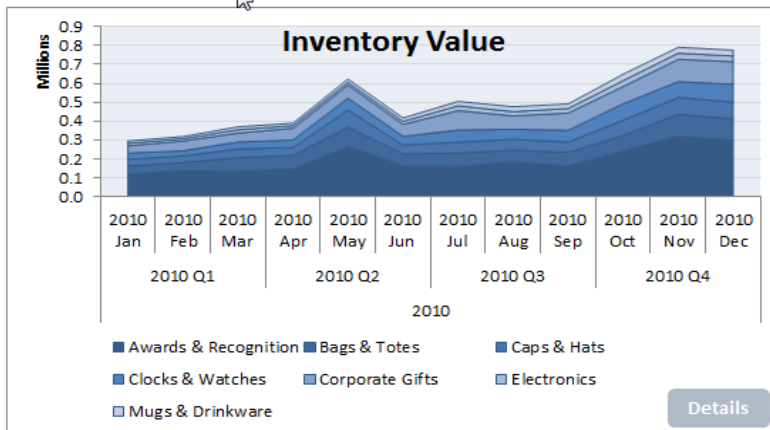- Flashlights
- USB Drives

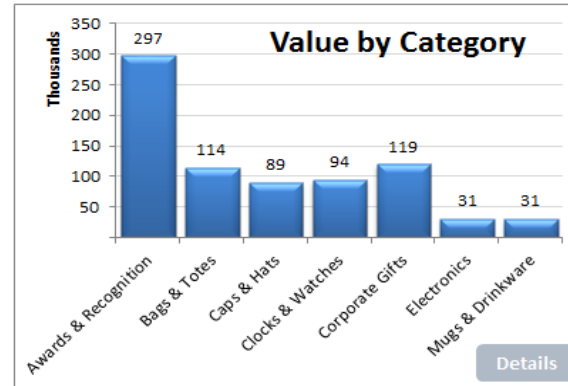**Year**
- 2007 | 2008
- 2009 | 2010

Quarter
- 2010 Q1 | 2010 Q2
- 2010 Q3 | 2010 Q4

Month
- 2010 May | 2010 Jun
- 2010 Jul | 2010 Aug

Inventory Value

Legend: Awards & Recognition, Bags & Totes, Caps & Hats, Clocks & Watches, Corporate Gifts, Electronics, Mugs & Drinkware

Current Product Value Mix

Pie values: 30,756 30,551 297,371 119,408 94,084 89,453 114,242

Legend: Awards & Recognition, Bags & Totes, Caps & Hats, Clocks & Watches, Corporate Gifts, Electronics

Average Inventory Value	Period	Prev. Yr	Variance	%	Grand Total
⊞ Awards & Recognition	188,840	200,797	-11,957	-5.95%	188,840
⊞ Bags & Totes	72,551	83,459	-10,908	-13.07%	72,551
⊞ Caps & Hats	56,765	63,983	-7,218	-11.28%	56,765
⊞ Clocks & Watches	57,043	63,353	-6,310	-9.96%	57,043
⊞ Corporate Gifts	73,856	81,520	-7,664	-9.40%	73,856
⊞ Electronics	19,293	18,451	842	4.56%	19,293
⊞ Mugs & Drinkware	19,052	16,732	2,320	13.86%	19,052

Value by Category

Values: 297 114 89 94 119 31 31

Categories: Awards & Recognition, Bags & Totes, Caps & Hats, Clocks & Watches, Corporate Gifts, Electronics, Mugs & Drinkware

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Some chosen analysis examples (JETs)

Business Intelligence Architecture