



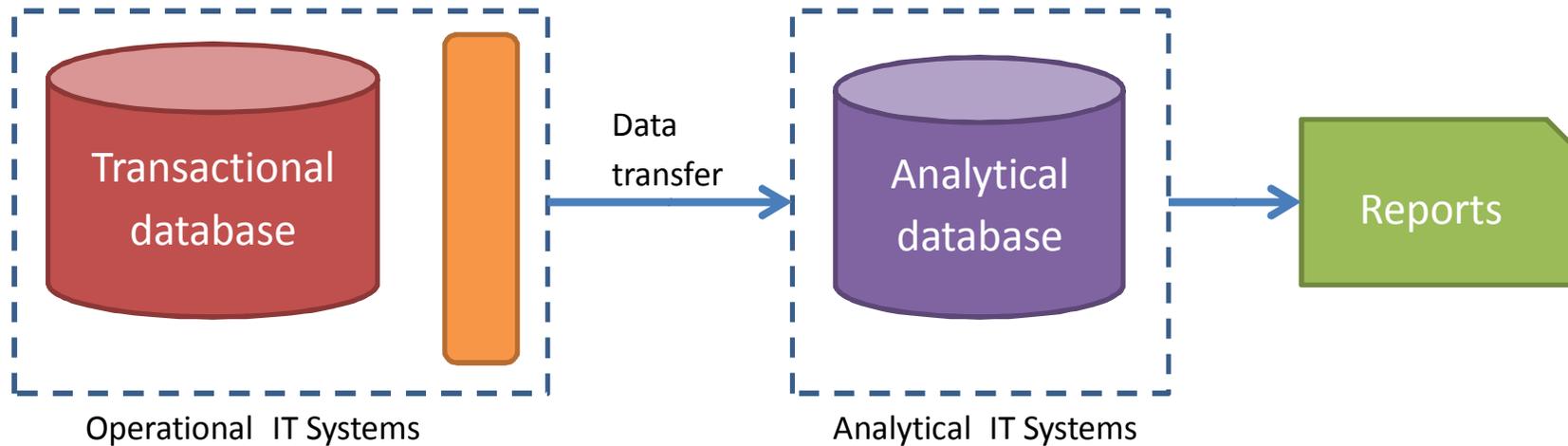
Analytical Consolidation of Reporting Requirements

Tunç Ali Kütükçüoğlu

CFA, Dipl. Ing. ETH

Email: tuncalik@finaquant.com

Operational & Analytical Systems



Some operational data are regularly transferred to the analytical database in order to generate the requested reports on the analytical side.

Aggregation over Regions and Months

Source table T1: Sales by region and month

Sales	Region	Month
1500 EUR	West Tigerland	November 2010
500 EUR	East Tigerland	November 2010
200 EUR	West Tigerland	December 2010
300 EUR	East Tigerland	December 2010

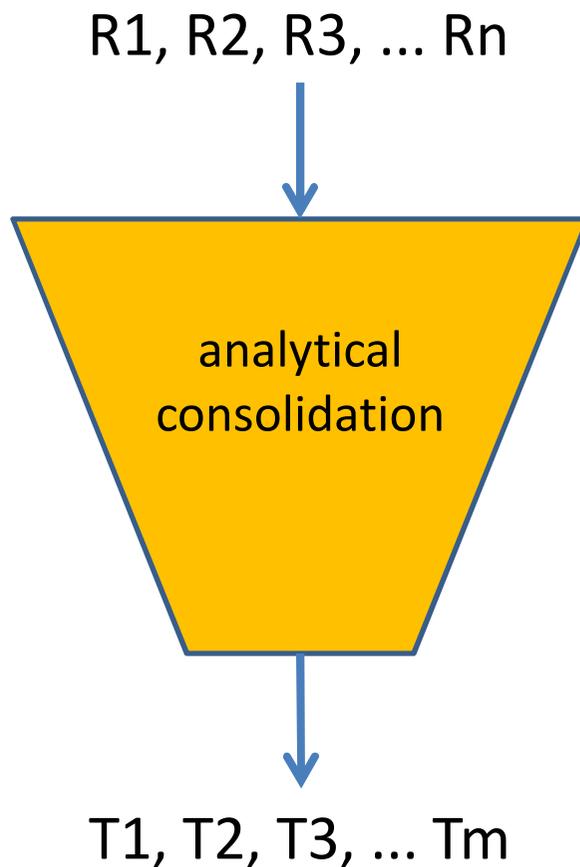
Step 1: After aggregation over regions; sales by country and month

Sales	Country	Month
2000 EUR	Tigerland	November 2010
500 EUR	Tigerland	December 2010

Step 2: After aggregation over months; sales by country and year

Sales	Country	Year
2500 EUR	Tigerland	2010

Analytical Consolidation Process



Requested reports

Minimal set of source tables required to generate all the requested reports

Information Content of Tables

$$\begin{aligned} \text{Operations on } (T1, T2, \dots Tm) &\rightarrow (R1, R2, \dots Rn) \\ &\Leftrightarrow \\ IC(T1, T2, \dots Tm) &\supset IC(R1, R2, \dots Rn) \end{aligned}$$

In English:

If we can obtain all the reports (i.e. tables $R1 \dots Rn$) by applying some table operations on the source tables ($T1 \dots Tm$), we can say by definition that the information content (IC) of the source tables contain (or include) the information content of the report tables.

What else can Analytical Consolidation do?

Available source data (tables)

$T_1, T_2, \dots T_m$

Reporting requirements

$R_1, R_2, \dots R_n$

Check if all the requested reports can be generated with the available source data.

If not:

- “ Check which reports in the set can be generated
- “ Find out, what table operations must be applied on the source data to generate these reports