

# Data Warehousing Has More Colours Than Just Black & White

Thomas Zurek

Markus Sinnwell

Business Information Warehouse  
SAP AG  
Germany

- Black & White Patterns
  
- Data Warehousing & ERP
  
- Non-Standard Requirements
  - Realignment - Hierarchies
  - Others
  
- Conclusions

## Operational Databases

transactional

operational

application-oriented

predictable retrieval

OLTP

detailed data

current data

normalised data

read/write accesses

vs.

vs.

vs.

vs.

vs.

vs.

vs.

vs.

vs.

## Data Warehouses

analytical

informational

subject-oriented

ad-hoc retrieval

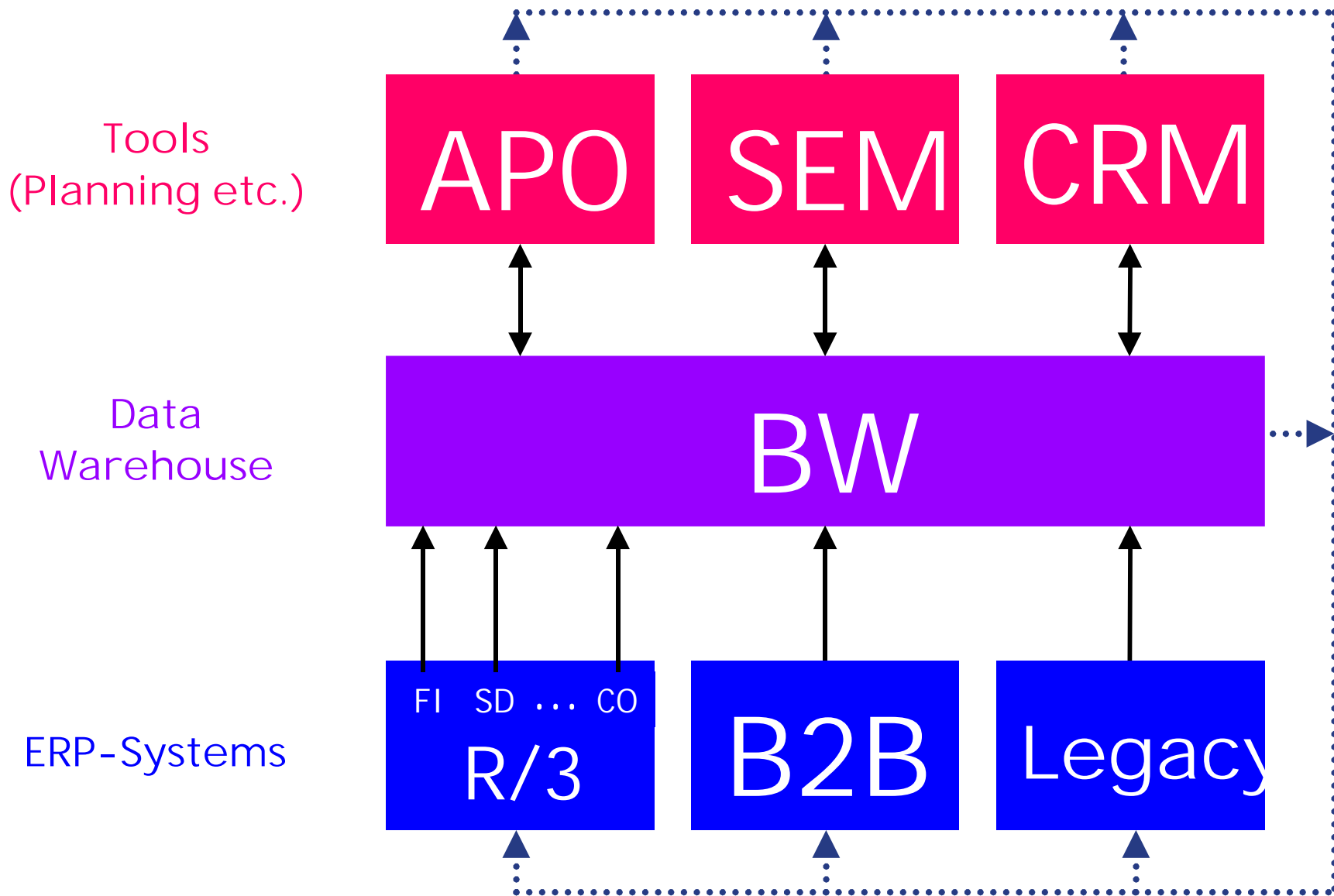
OLAP

summary data

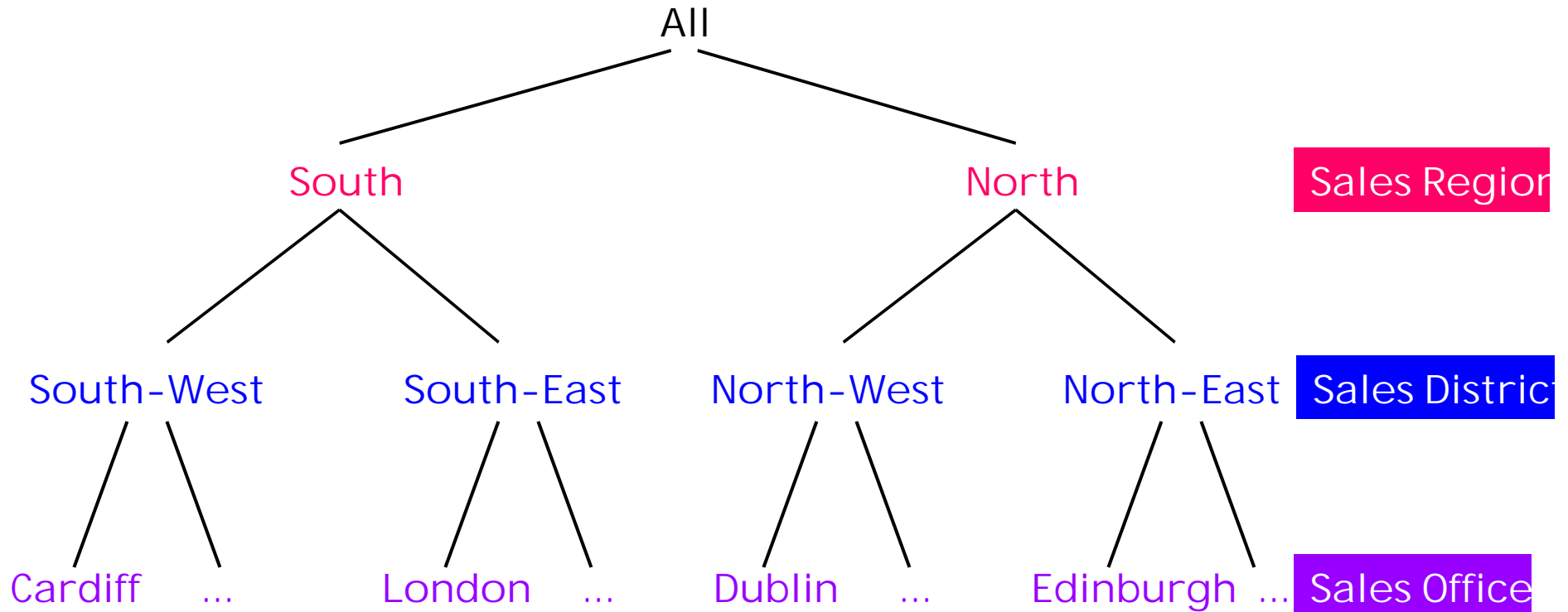
historic data

denormalised data

read-only accesses



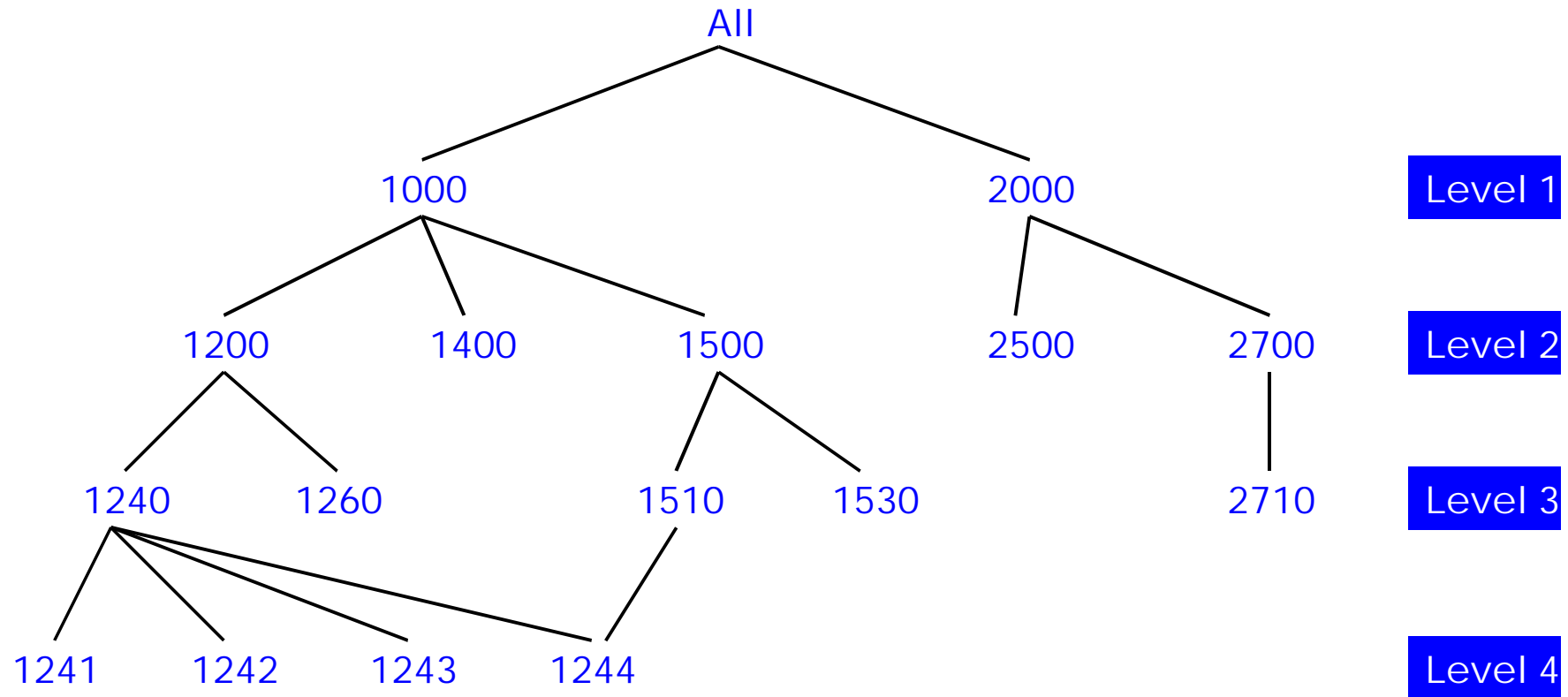
## Sales Org Hierarchy



```
create table AGGREGATE1 as
select PRODUCT, YEAR, SALES_REGION, sum(SALES), ...
from ...
where ...
group by PRODUCT, YEAR, SALES_REGION
```

- fixed number of levels
- some changes / realignment

## Cost Centre Hierarchy



- unbalanced
- DAGs are possible
- frequent reorganisations

- detailed vs. summarised data
  - line items
- read/write accesses vs. read-only accesses
  - planning tools
  - status tracking
  - changing dimensions
- predictable vs. ad-hoc retrieval
  - standard OLAP reports
- current vs. historic data
  - adjusting plan data
  - status tracking

- OLTP systems and data warehouses are not as orthogonal as the literature suggests.
- Data warehouses are part of a wider IT infrastructure.