Data Warehousing Has More Colours Than Just Black & White

Thomas Zurek
Markus Sinnwell

Business Information Warehouse
SAP AG
Germany
Overview

- Black & White Patterns
- Data Warehousing & ERP
- Non-Standard Requirements
  - Realignment - Hierarchies
  - Others
- Conclusions
<table>
<thead>
<tr>
<th>Operational Databases</th>
<th>Data Warehouses</th>
</tr>
</thead>
<tbody>
<tr>
<td>transactional</td>
<td>analytical</td>
</tr>
<tr>
<td>operational</td>
<td>informational</td>
</tr>
<tr>
<td>application-oriented</td>
<td>subject-oriented</td>
</tr>
<tr>
<td>predictable retrieval</td>
<td>ad-hoc retrieval</td>
</tr>
<tr>
<td>OLTP</td>
<td>OLAP</td>
</tr>
<tr>
<td>detailed data</td>
<td>summary data</td>
</tr>
<tr>
<td>current data</td>
<td>historic data</td>
</tr>
<tr>
<td>normalised data</td>
<td>denormalised data</td>
</tr>
<tr>
<td>read/write accesses</td>
<td>read-only accesses</td>
</tr>
</tbody>
</table>
create table AGGREGATE1 as
select PRODUCT, YEAR, SALES_REGION, sum(SALES), ...
from ...  • fixed number of levels
where ...  • some changes / realignment
group by PRODUCT, YEAR, SALES_REGION
Hierarchy - Realignment (2)

Cost Centre Hierarchy

- unbalanced
- DAGs are possible
- frequent reorganisations
Further Non-Black-White Requirements

- 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
Conclusions

- OLTP systems and data warehouses are not as orthogonal as the literature suggests.

- Data warehouses are part of a wider IT infrastructure.