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# **In-Memory Applications**

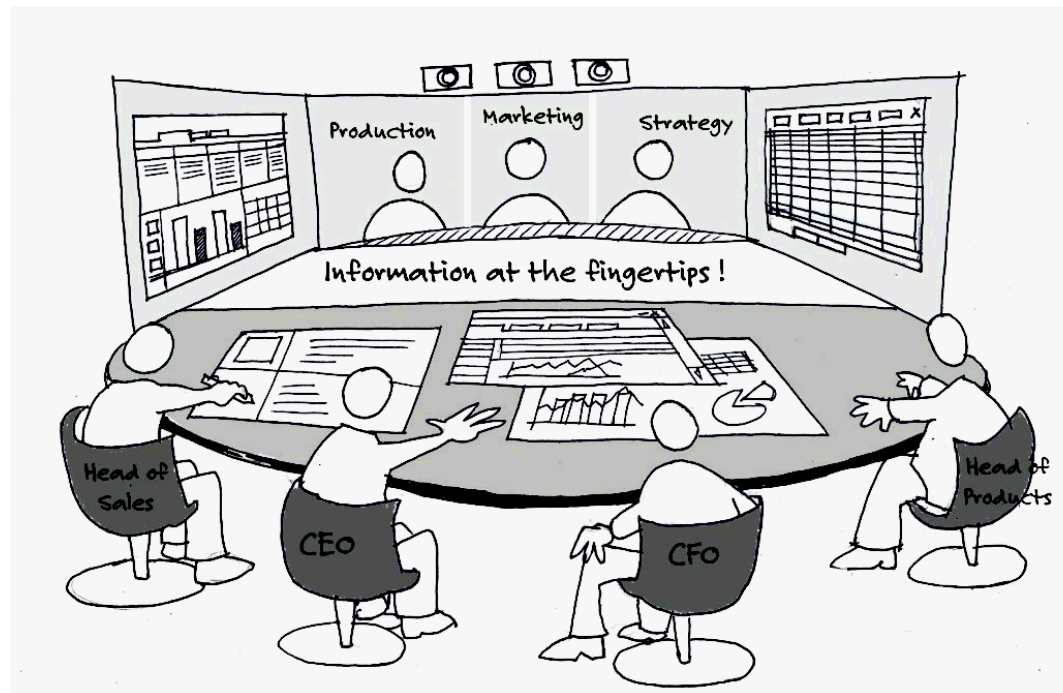
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# The Vision of In-Memory Applications: Information at your Fingertips

- Query and analyze operational business data interactively and without support from the IT department
- Fully leverage massive amounts of data to create strategic advantage



# We see In-Memory Technology Trigger Improvements in Three Strategic Areas



<b>Strategic improvement</b>	<b>Description</b>
<b>Reduced Total Cost of Ownership</b>	Incorporating analytical capabilities directly into operational systems make dedicated analytical systems largely obsolete
<b>New Innovative Applications</b>	Combining high-volume transactions with analytics in the operational system enables new applications for business processes, such as planning, forecasting or pricing optimizations
<b>Better and Faster Decisions</b>	Allowing simulation, what-if analyses, and planning interactively on the latest operational data enables a more dynamic management style

# In-Memory Technology Creates New Opportunities Across All Industries – Examples



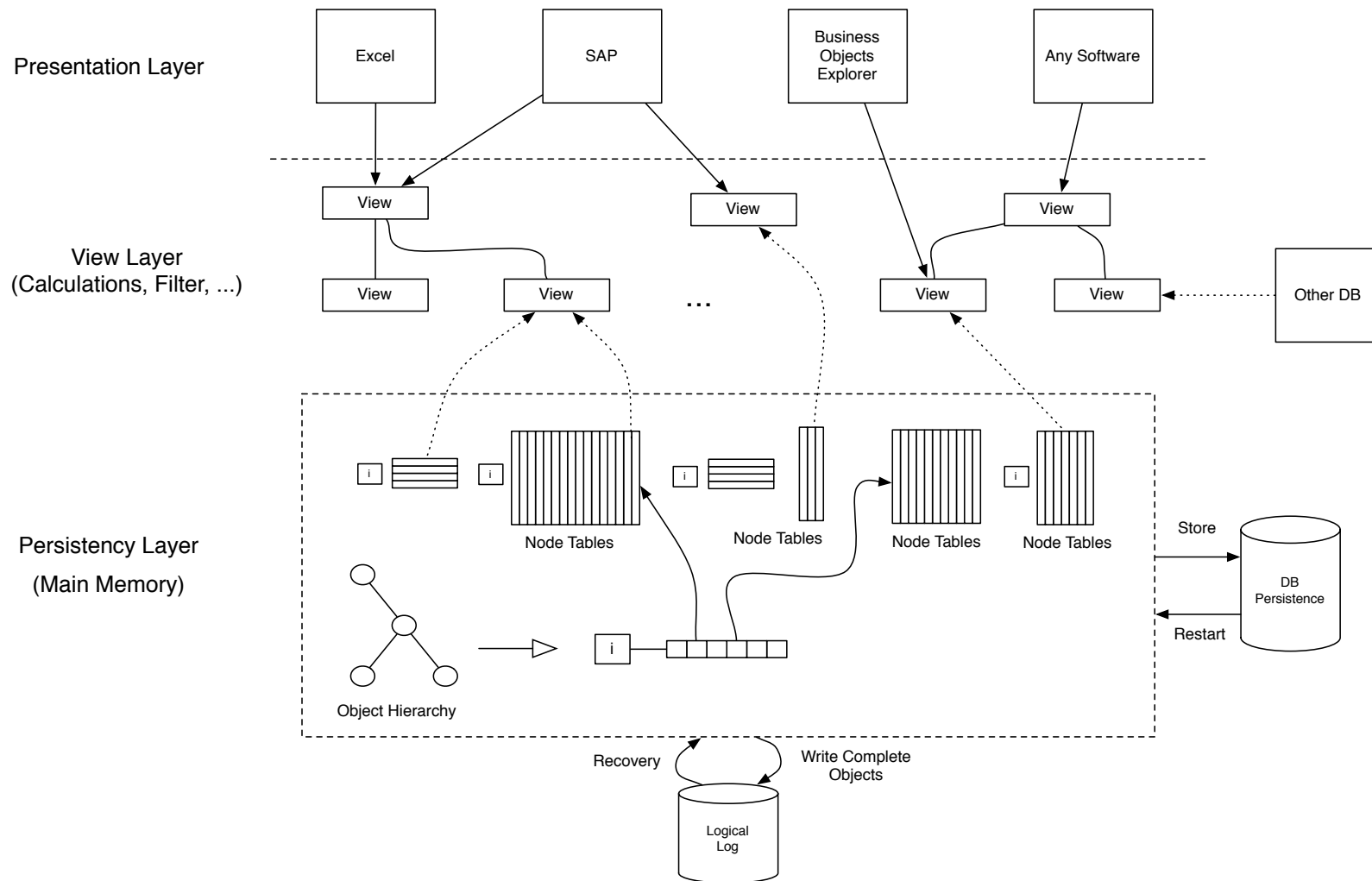
- **Daily Operations:** Gain real-time insight into daily revenue, margin, and labor expenses split by brand or product categories.
- **Competitive Pricing:** Intuitively explore impact of competition on product pricing to instantly understand impact to profit contribution.
- **Risk Management:** Immediately identify high-risk areas across multiple products and services and run what-if scenario analyses on the fly.
- **Inventory Management:** Optimize inventory and reduce out-of-stocks based on live business events.
- **Real-Time Warranty and Defect Analysis:** Get live insight into defective products to identify deviation in production processes or handling.

# Key for Increased Performance is to Bring Application Logic Closer to the Storage layer

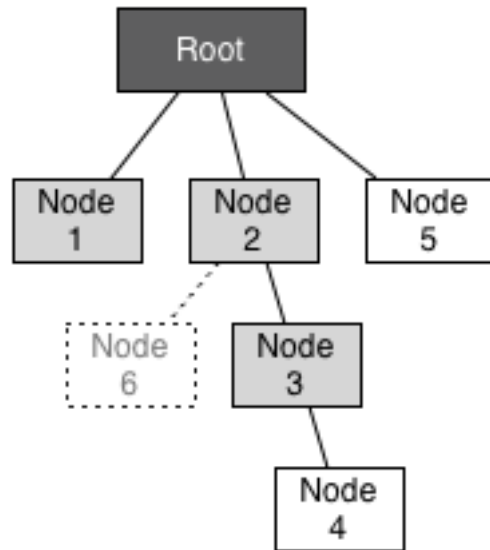
Objective is to bring **application logic closer to the storage layer** using stored procedures / business library functions

Benefit	Description
Improve Performance	<ul style="list-style-type: none"><li>■ Reduce data transfer between the application and the database server</li><li>■ Pre-compile queries for repeated execution</li></ul>
Shorten Application Development	<ul style="list-style-type: none"><li>■ Reduce application code</li><li>■ Share business logic among applications</li></ul>

# Repositories of Dynamic Views Facilitates Data Access for Application Developers



# Improved Retrieving Performance of Business Objects through Object Data Guide



- Enterprise systems make heavy use of objects - objects must be mapped to relations
- Often, objects are distributed sparsely over all tables representing nodes
- Relevant tables can now be queried in parallel
- When adding new tables, only add another bit

ID	Type	...	...	ODG
1	Order	...	...	(1,1,1,0,0)

- Root Table
- Used Table
- Unused Table
- New Table

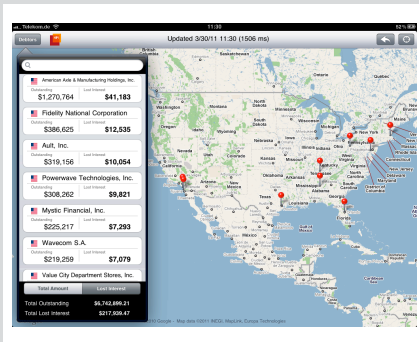
1 = table is relevant

0 = table not relevant

# Outlook – In-Memory Technology Enables Mobile Analytics

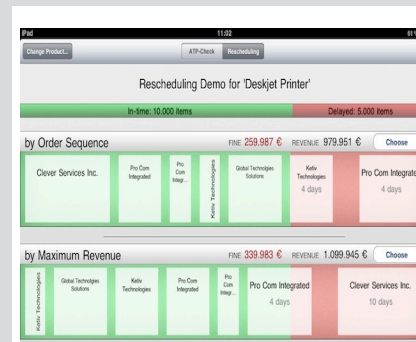
## Dunning Application

- Determine outstanding payments on the fly
- Locate customers with debts in reach
- Integrated contact data



## Availability-to-Promise

- Real-time ATP checks
- Ad-hoc rescheduling
- No materialized aggregates



## Demand Planning

- Interactive querying of demand planning data
- Integration of location-based geo data

