Chapter 11

Business Intelligence and Corporate Performance Management

Information Technology For Management 6th Edition

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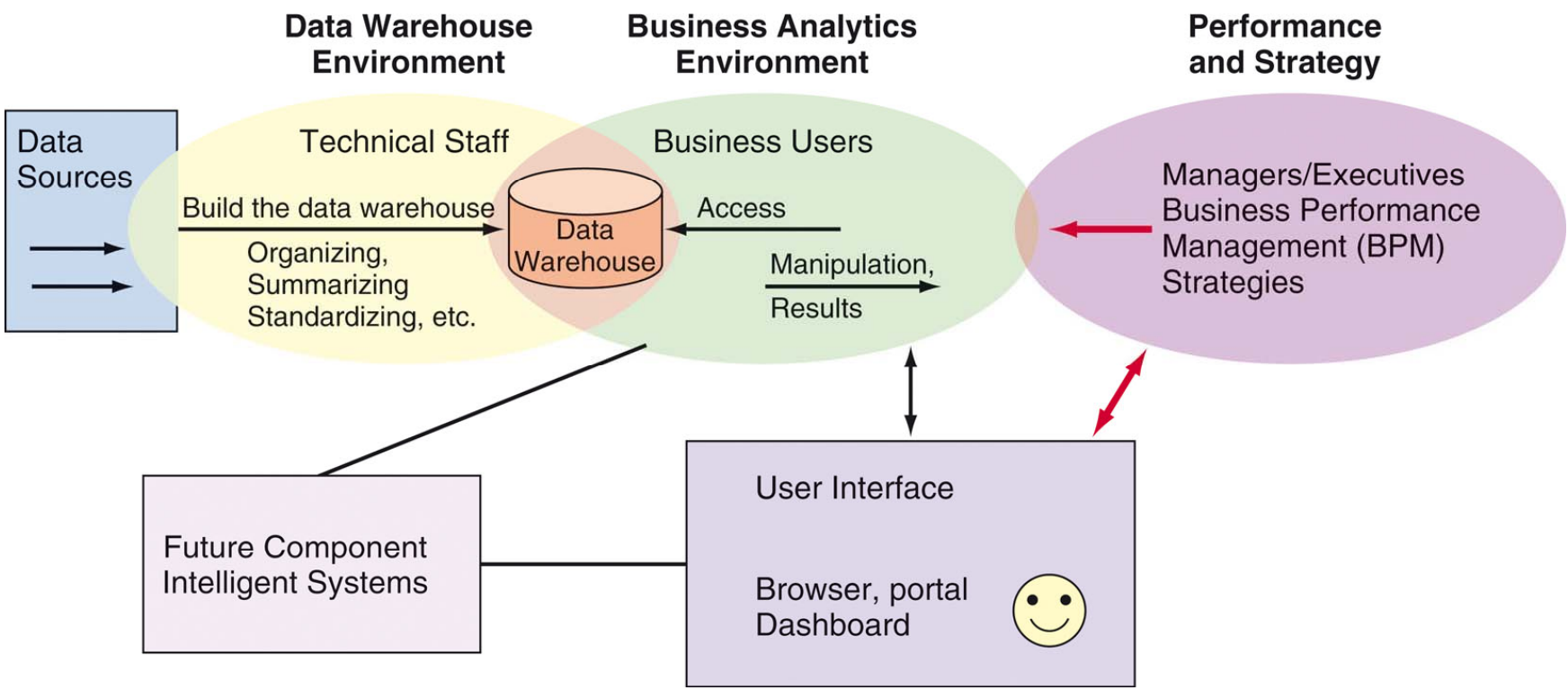
Learning Objectives

- Understand the drivers for BI
- Understand the structure and components of BI
- OLAP, querying, multidimensional analysis
- Data visualization and BI
- Real time BI and competitive Intelligence

BI components

- Data warehouse
- Business analytics
- Business Performance Management
- User Interface

BI components and Architecture



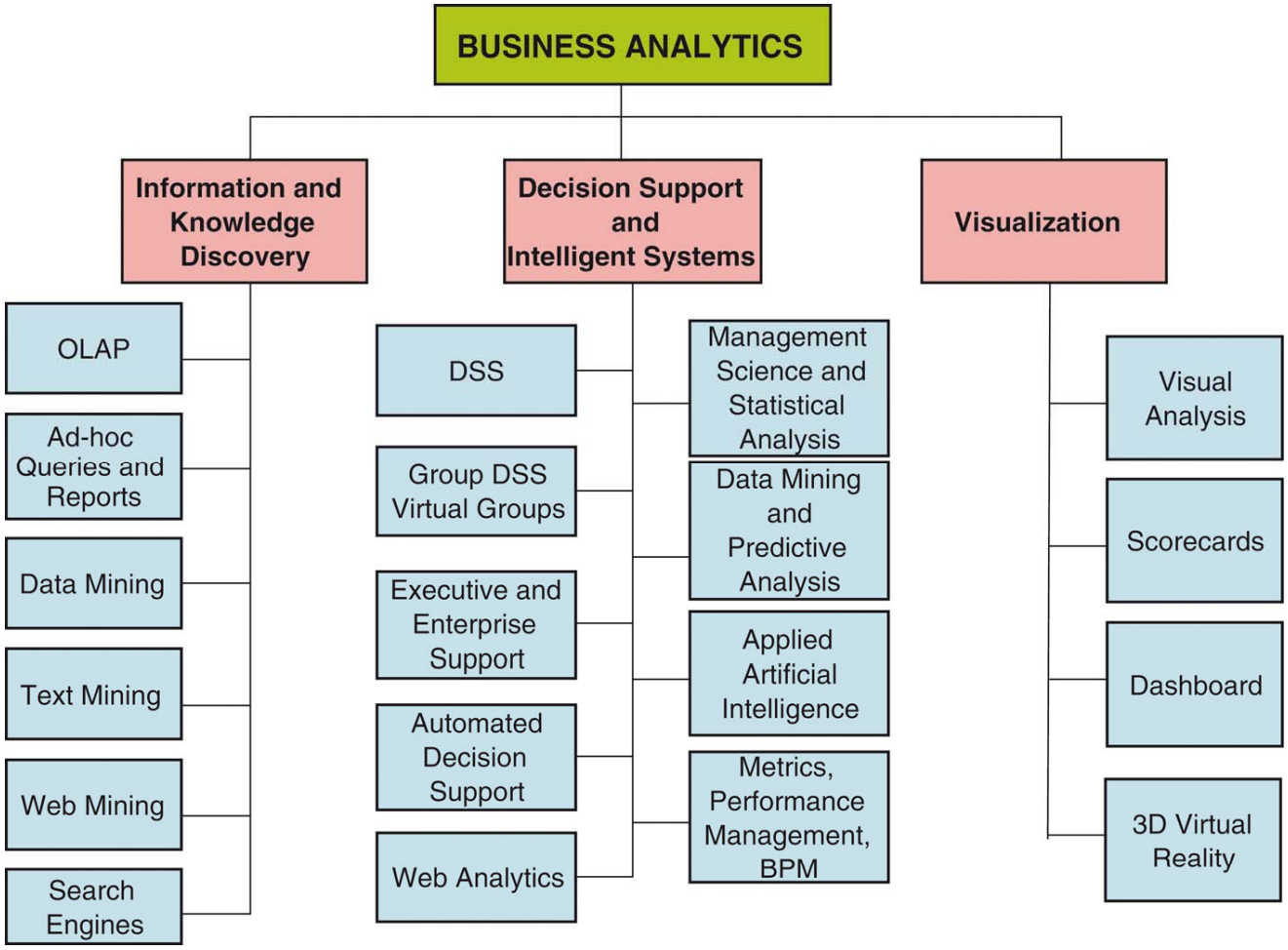
Business Value of BI

TABLE 11.1 Business Value of BI Analytical Applications

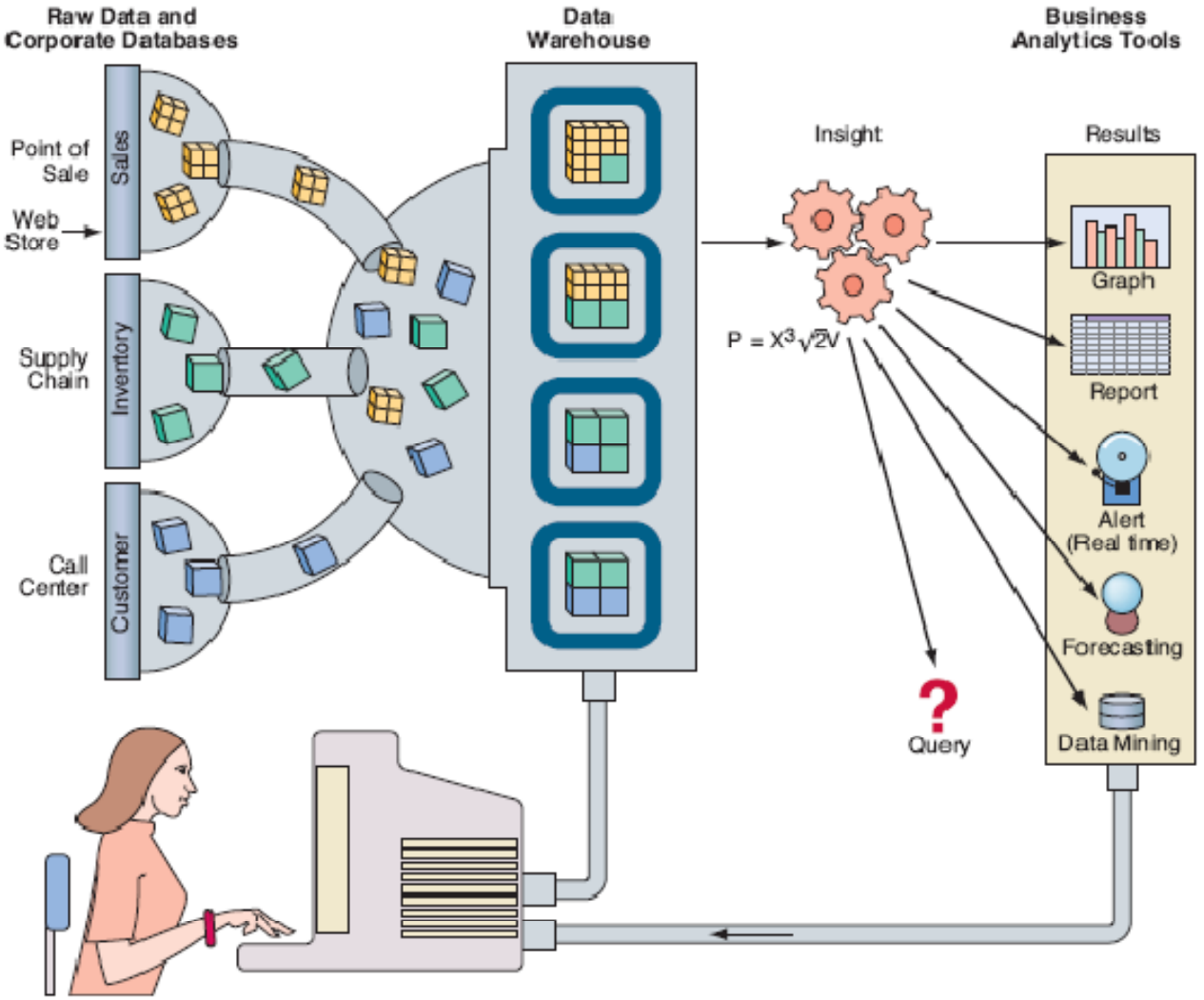
Analytical Application	Business Question	Business Value
Customer segmentation	What market segments do my customers fall into and what are their characteristics?	Personalize customer relationships for higher customer satisfaction and retention.
Propensity to buy	Which customers are most likely to respond to my promotion?	Target customers based on their need to increase their loyalty to your product line. Also, increase campaign profitability by focusing on the most likely to buy.
Customer profitability	What is the lifetime profitability of my customers?	Make business interaction decisions based on the overall profitability of customers or customer segments.
Fraud detection	How can I detect which transactions are likely to be fraudulent?	Quickly detect fraud and take immediate action to minimize cost.
Customer attrition	Which customers are at risk of leaving?	Prevent loss of high-value customers and let go of lower-value customers.
Channel optimization	What is the best channel to reach my customers in each segment?	Interact with customers based on their preference and your need to manage cost.

Source: Ziama and Kasher (2004). Courtesy of Teradata, divison of NCR Corp.

BI, Data, and the Warehouse



Business Intelligence



Analytics in Example





Knowledge Discovery

TABLE 11.3 Stages in the Evolution of Knowledge Discovery

Evolutionary Stage	Business Question	Enabling Technologies	Characteristics
Data collection (1960s)	What was my total revenue in the last five years?	Computers, tapes, disks	Retrospective, static data delivery
Data access (1980s)	What were unit sales in New England last March?	Relational databases (RDBMS), structured query language (SQL)	Retrospective, dynamic data delivery at record level
Data warehousing and decision support (early 1990s)	What were the sales in region A, by product, by salesperson?	OLAP, multidimensional databases, data warehouses	Retrospective, dynamic data delivery at multiple levels
Intelligent data mining (late 1990s)	What's likely to happen to the Boston unit's sales next month? Why?	Advanced algorithms, multiprocessor computers, massive databases	Prospective, proactive information delivery
Advanced intelligent system Complete integration (2000–2004)	What is the best plan to follow? How did we perform compared to metrics?	Neural computing, advanced AI models, complex optimization, Web Services	Proactive, integrative; multiple business partners

Factors of Multidimensionality

- Dimensions
- Measures
- Time

Data Visualization

Travel
Hours

	Planes		Trains		Automobiles	
	This Year	Next Year	This Year	Next Year	This Year	Next Year
Canada	740	888	140	168	640	768
Japan	430	516	290	348	150	180
France	320	384	460	552	210	252
Germany	425	510	430	516	325	390

Country

(a)

Hours

		This Year	Next Year
Planes	Canada	740	888
	Japan	430	516
	France	320	384
	Germany	425	510
Trains	Canada	140	168
	Japan	290	348
	France	460	552
	Germany	430	516
Automobiles	Canada	640	768
	Japan	150	180
	France	210	252
	Germany	325	390

Travel | Country

(b)

Worksheet1-View1-TUTORIAL

Hours

			This Year	Next Year
Planes	Canada		740	888
	Japan		430	516
		France	320	384
		Germany	425	510
	Europe	Total	745	894
Trains	Canada		140	168
	Japan		290	348
		France	460	552
		Germany	430	516
	Europe	Total	890	1068
Automobiles	Canada		640	768
	Japan		150	180
		France	210	252
		Germany	325	390
	Europe	Total	535	642

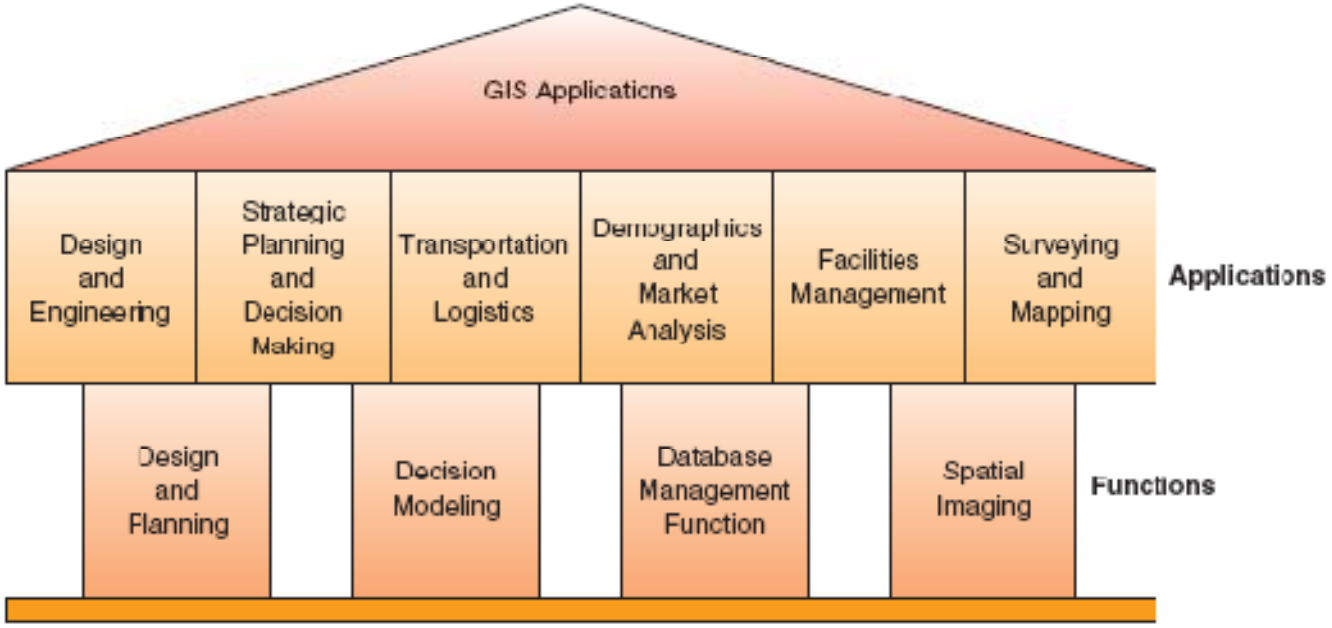
Travel | Country

Next Year = (This Year)*1.2

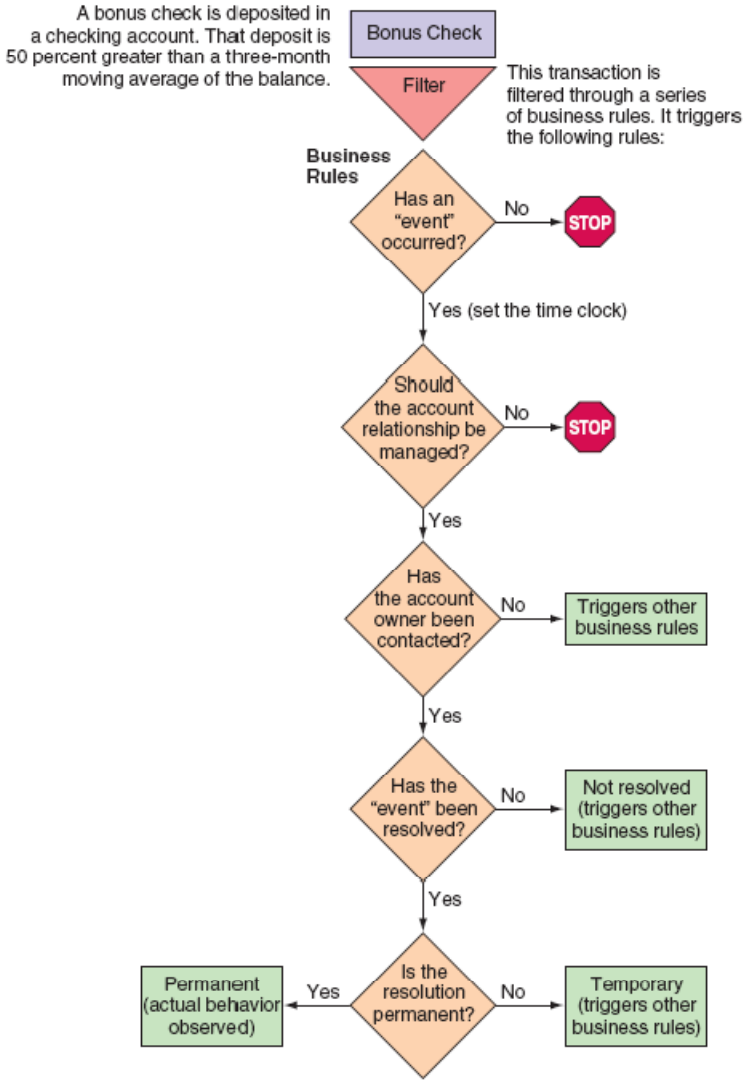
- The software adds *Total* rows.
- The software calculates "Next Year" totals.

Shows how formula 1 calculates cells (in this case, the cells in the *Next Year* column.)

GIS Functions



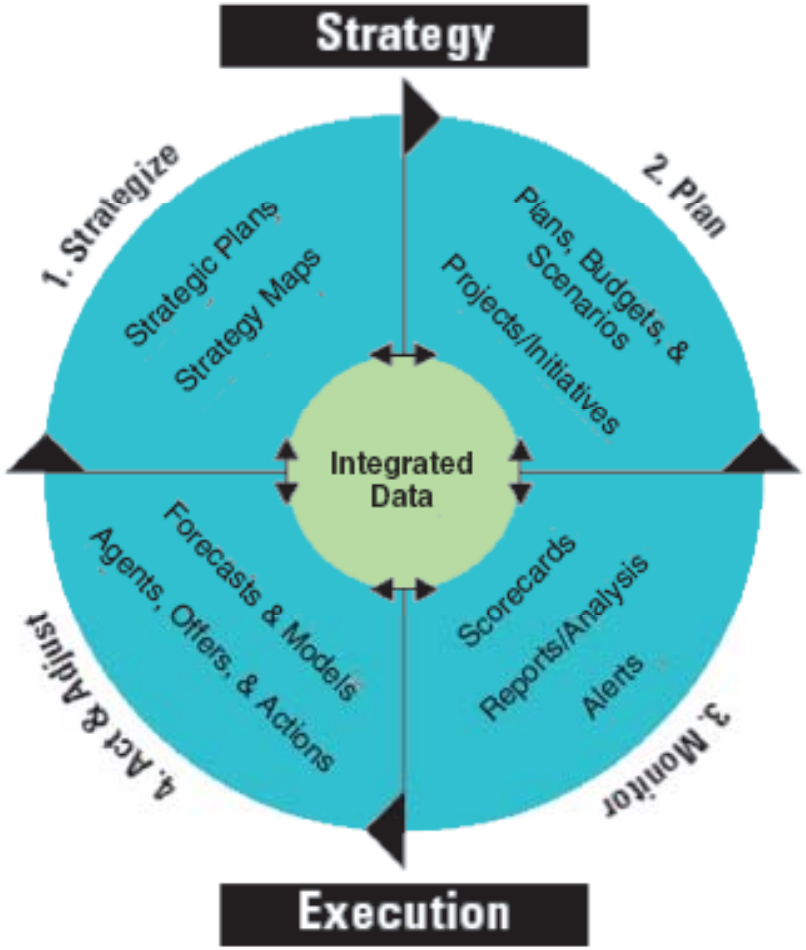
Real Time BI


A bonus check is deposited in a checking account. That deposit is 50 percent greater than a three-month moving average of the balance.
Bonus Check
Filter
This transaction is filtered through a series of business rules. It triggers the following rules:
Business Rules
Has an "event" occurred?
No
STOP
Yes (set the time clock)
Should the account relationship be managed?
No
STOP
Yes
Has the account owner been contacted?
No
Triggers other business rules
Yes
Has the "event" been resolved?
No
Not resolved (triggers other business rules)
Yes
Is the resolution permanent?
Yes
Permanent (actual behavior observed)
No
Temporary (triggers other business rules)

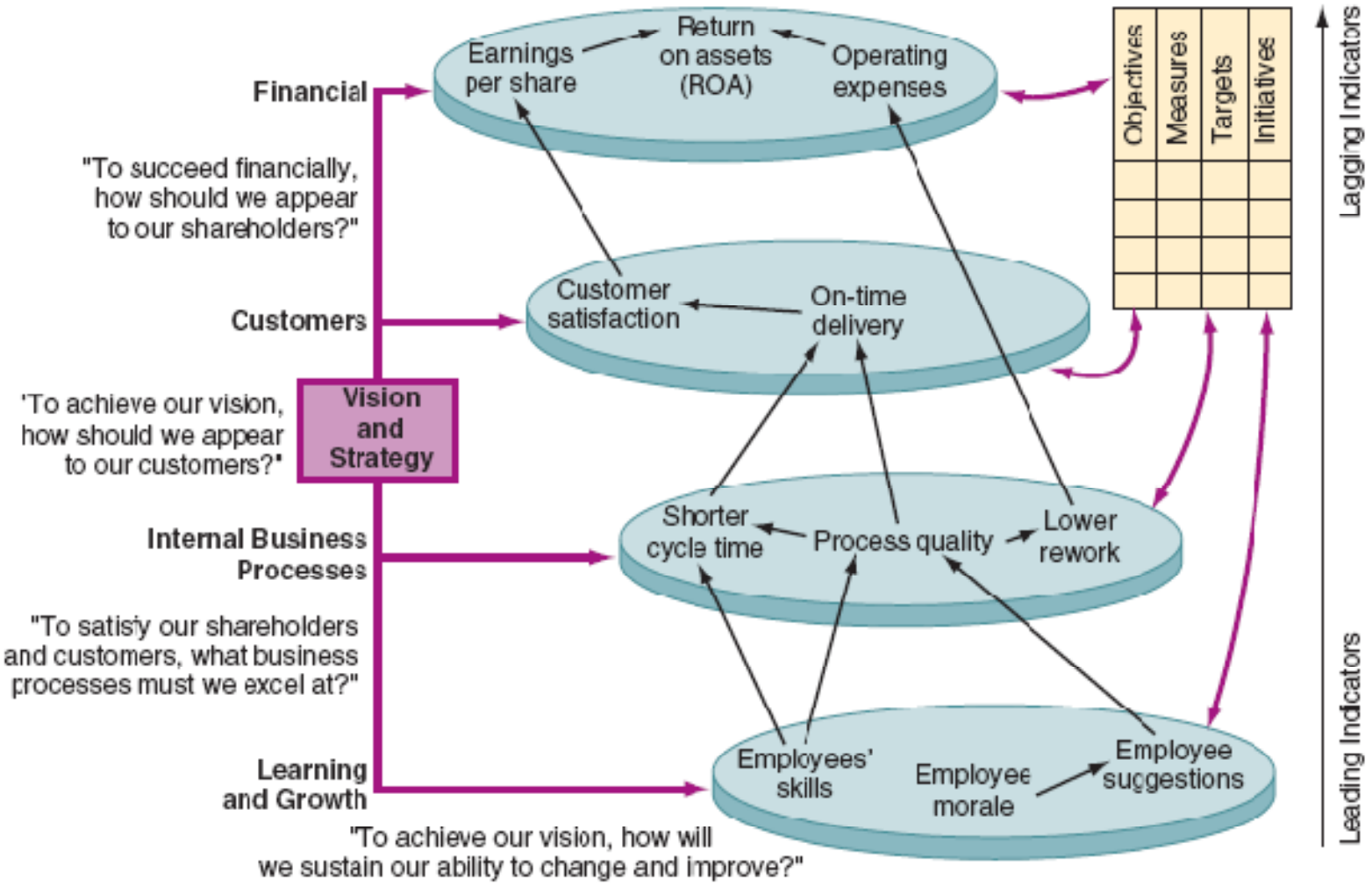
BI Monitoring and Evaluation

- Benchmarks
- Scorecards
- BAM
- Dashboards

BI monitoring and Evaluation
(Continued)



BI monitoring and Evaluation (Continued)



Managerial Issues

- **Cost/Benefit and Justification Issues.**
- **Why BI projects fail.**
- **Systems Development and Integration.**
- **Legal / Ethical Issues**

Chapter 11

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