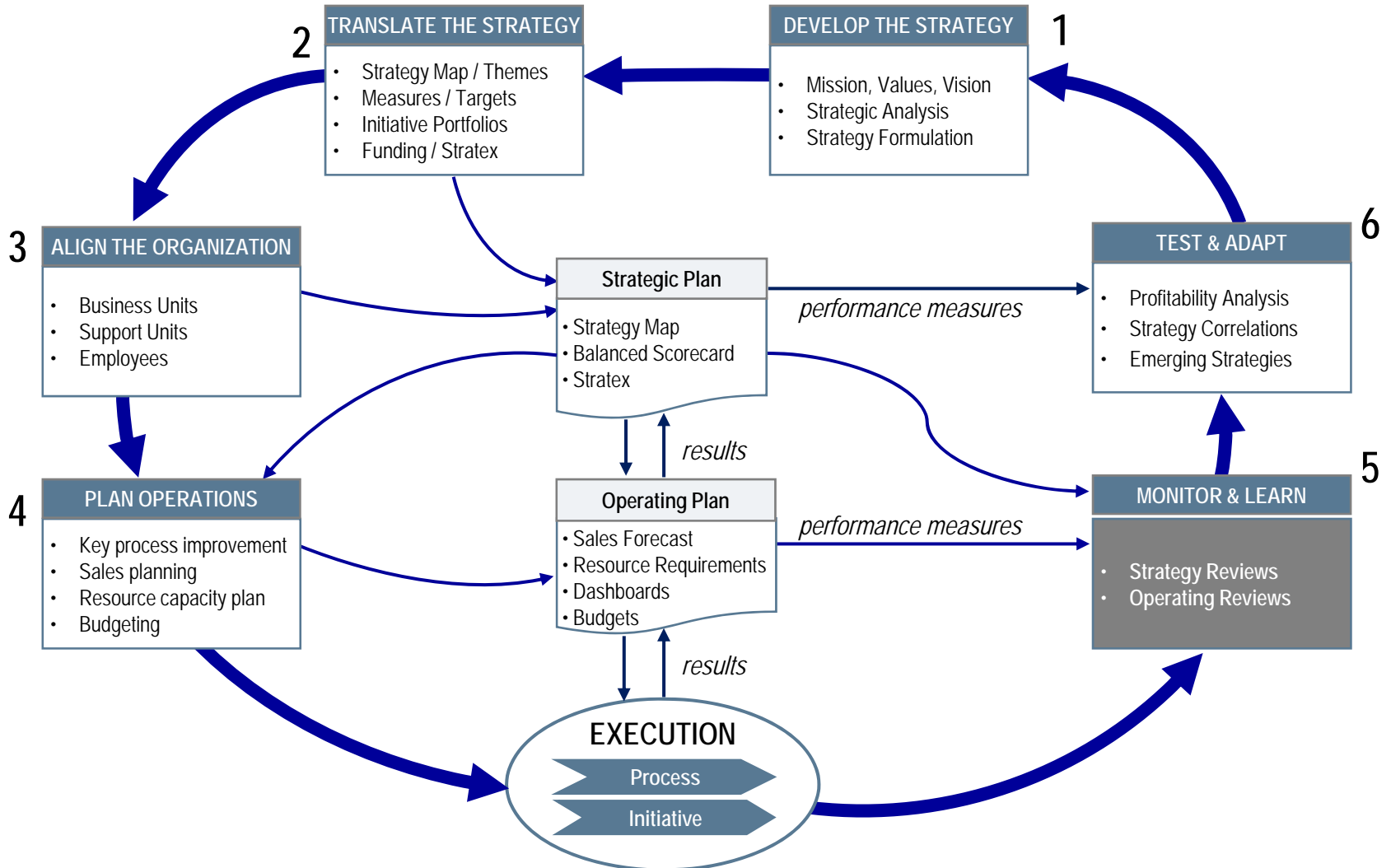


Reinventing your Cost Management Systems in Volatile Times

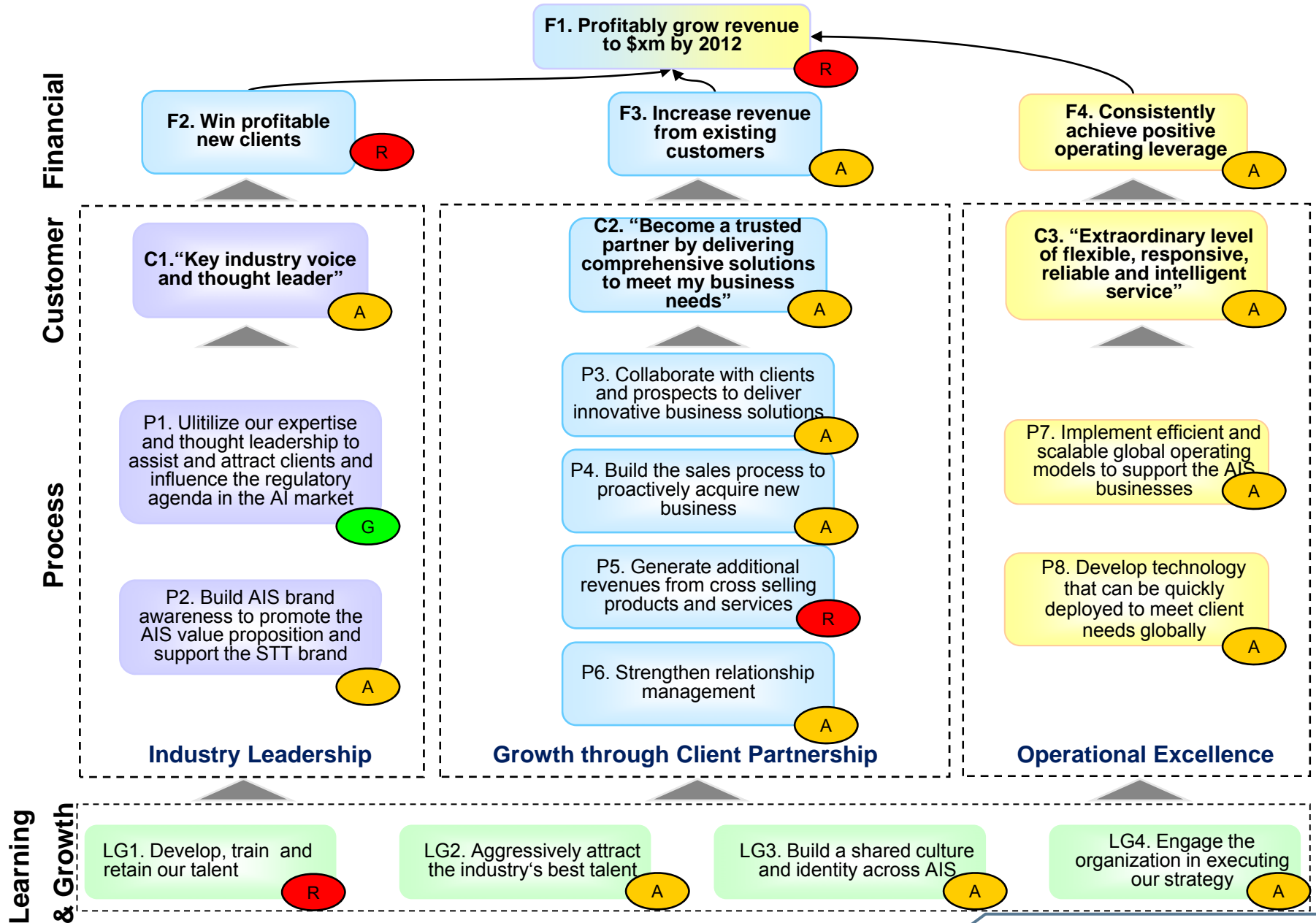
Dr. Robert S. Kaplan

Baker Foundation Professor, Harvard Business School

Stage 5 of the Management System: Monitor and Learn



Organize strategy review meetings by strategic themes



Managing in Turbulent Times

“In good times, companies expand their operations. They add product lines, expand into new geographic areas and customer segments, and even experiment with new business models. **Then comes a downturn.** The company can no longer do everything it once did, and the decisions about where to focus can be agonizing.

[The company needs to perform] a thorough inside-out analysis: Where is the company generating the best results, **measured by profitability and growth**? Which product lines, which markets, which customers segments?

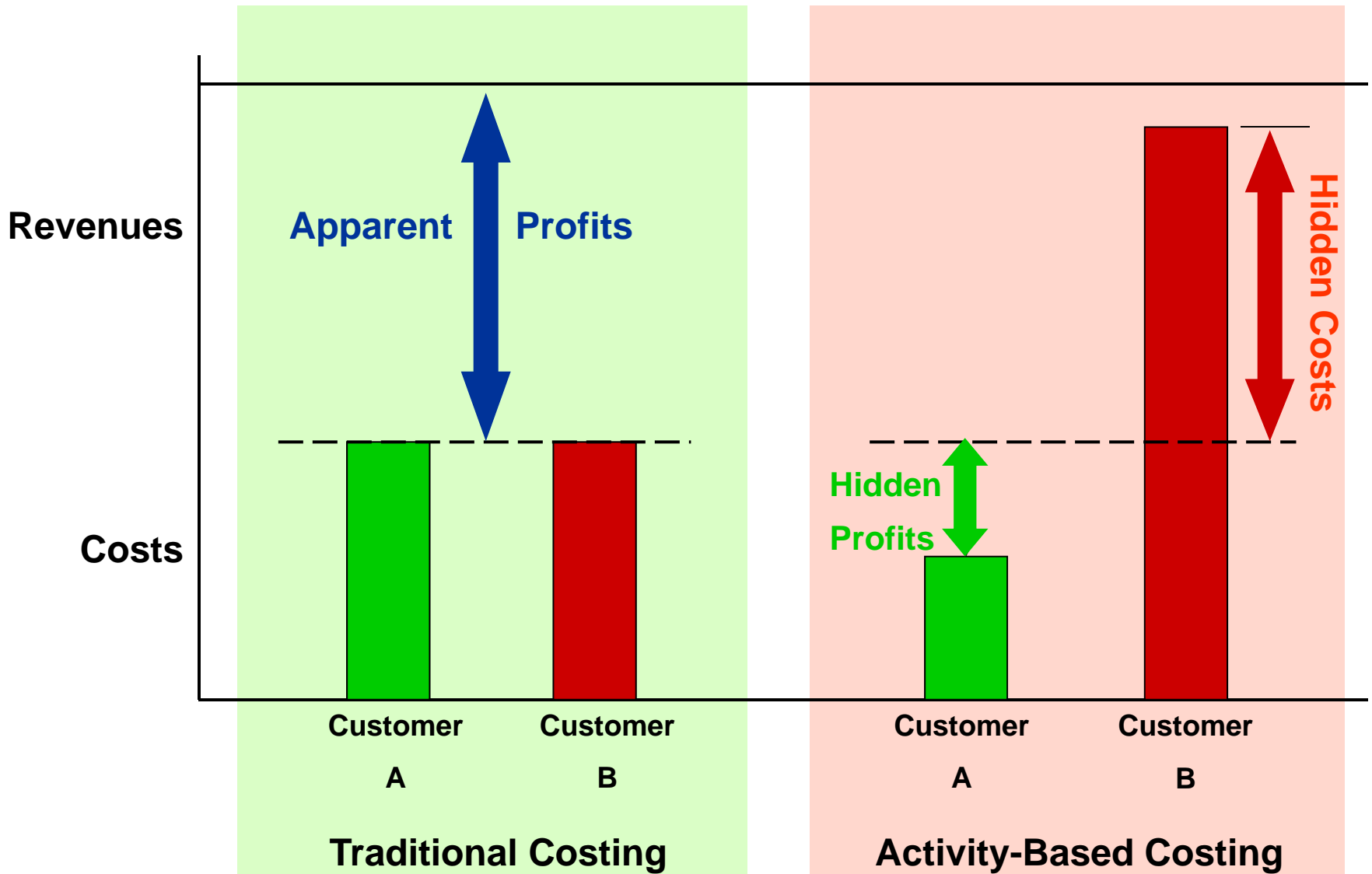
Who are the customers that we love the most ...?”

Growth in SG&A Expenses versus Sales

Wal-Mart Income Statement (\$US billions)

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Sales	\$ 218	\$ 245	\$ 257	\$ 286	\$ 313	\$ 346
SG&A Expenses	36	41	44	51	57	64
SG&A %	16.6%	16.7%	17.5%	17.9%	18.1%	18.5%
Sales	100	112	118	131	143	158
SG&A	100	113	124	141	157	177

Activity-Based Costing Reveals the Hidden Profit and Hidden Cost Customers



Consider two customers of approximately the same size and apparently similar profitability (when assigning selling, marketing, distribution and administrative expenses as % of Sales)

	CARVER	DELTA
Sales	\$320,000	\$315,000
Cost of goods sold	<u>190,000</u>	<u>195,000</u>
Gross margin	\$130,000	\$120,000
MSDA expenses at 30% of sales	<u>96,000</u>	<u>94,500</u>
Operating profit	\$34,000	\$25,500
Profit percentage	16.9%	15.5%

Actual Customer Profitability (after ABC analysis) is very different

	CARVER	DELTA
Sales	\$320,000	\$315,000
Cost of goods sold	<u>190,000</u>	<u>195,000</u>
Gross margin	\$130,000	\$120,000
Gross margin percentage	40.6%	38.1%
Marketing and technical support	7,000	54,000
Travel to customers	1,200	7,200
Service customers	4,000	42,000
Handle customer orders	1,400	26,900
Ship to customers	<u>12,600</u>	<u>42,000</u>
Total MSDA activity expenses	<u>26,200</u>	<u>172,100</u>
Operating profit	<u>\$103,800</u>	<u>\$(52,100)</u>
Profit percentage	32.4%	(16.5%)

ABC drives shift in cost assignment of a shared service to lines of business at a financial institution

Dramatic shifts in cost assignment occurred when ABC was applied to an operational area that supported multiple Lines of Business.

ABC highlighted the cross-subsidization that was occurring across the organization and transformed arbitrary allocations to accurate and actionable cost information.

Accurate cost assignment provided correct economic incentives for both supplying and purchasing organizational units.

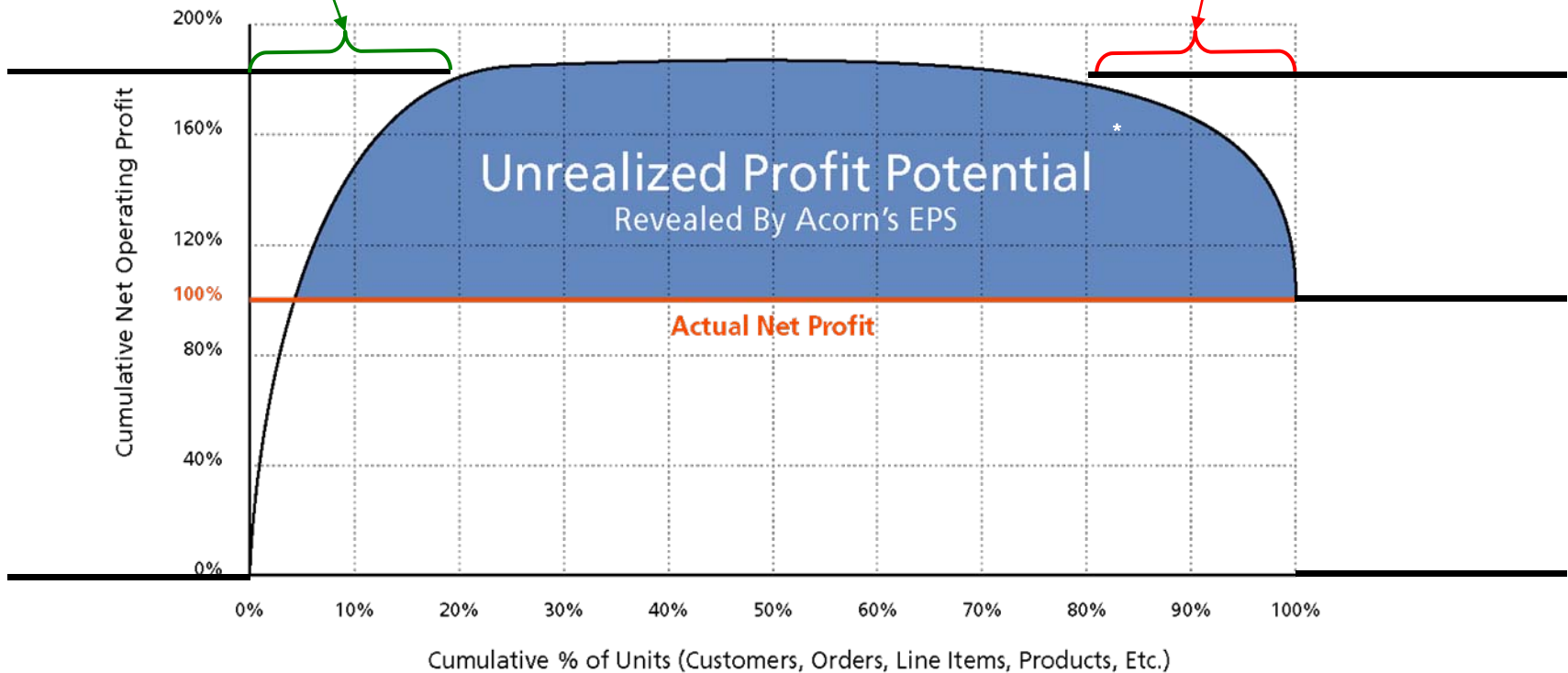
Line of Business	Distribution of Totals		
	Activity Cost	Existing	% change
Capital Markets	0.4%	0.2%	141%
Corporate Banking	15.1%	15.9%	-5%
Corporate Finance	9.0%	18.2%	-51%
Other Lines Of Business	3.2%	1.0%	209%
Advisory	7.6%	7.1%	6%
Business Credit	7.2%	17.6%	-59%
Real Estate Finance	13.3%	8.5%	57%
Regional Community Banking	44.2%	31.5%	41%
Total	100%	100%	

A typical “Whale Curve” of Cumulative Customer Profitability

Operating Profit Profile

20% most profitable generate 180% of profits

20% least profitable lose 80% of net profits



Companies need ABC to learn whether their differentiation strategies are working.

ABC helps companies understand whether:

- Δ Value created from strategy $>$ Δ Costs required to create and deliver the strategy?
- Where is the strategy leading to higher profits and where are profits declining?

With this information, companies can take targeted actions to transform unprofitable products and customers into profitable ones

Measuring Customer Profitability

Breakeven or Loss Customers

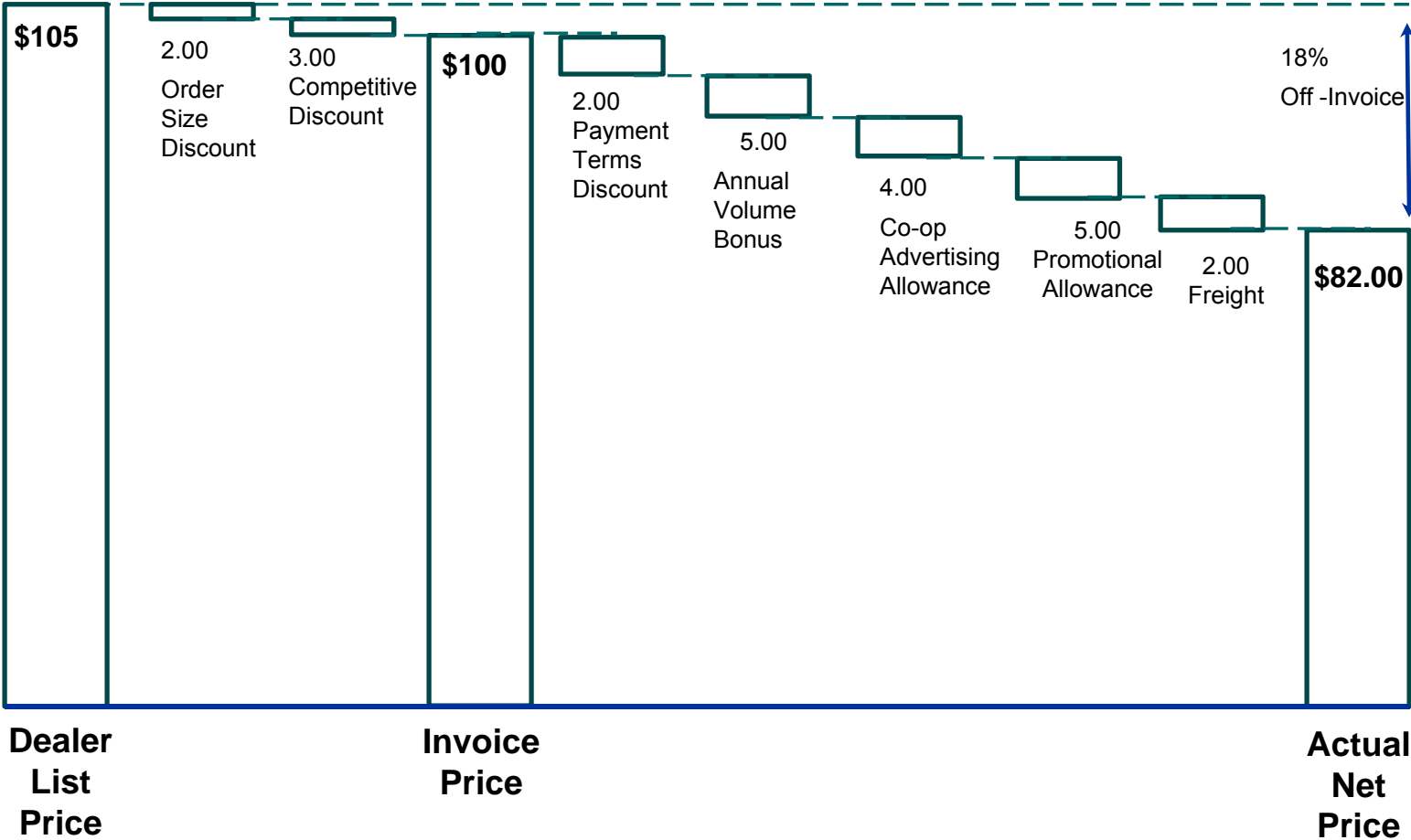
Extensive discounting and allowances

Highly Profitable Customers

No discounting or allowances

The Pricing Waterfall gives visibility to all customer-specific discounts and allowances

(Dollars per square yard)



Measuring Customer Profitability

Breakeven or Loss Customers

Extensive discounting and allowances

Order custom products

Small order quantities

Unpredictable order arrivals

Customized delivery

Change delivery requirements

Manual processing

Large amounts of pre-sales support (marketing, technical, and sales resources)

Large amounts of post-sales support (installation, training, warranty, field service)

Require specialized inventory

Pay slowly (high accounts receivable)

Highly Profitable Customers

No discounting or allowances

Order standard products

High order quantities

Predictable order arrivals

Standard delivery

No changes in delivery requirements

Electronic processing (EDI)

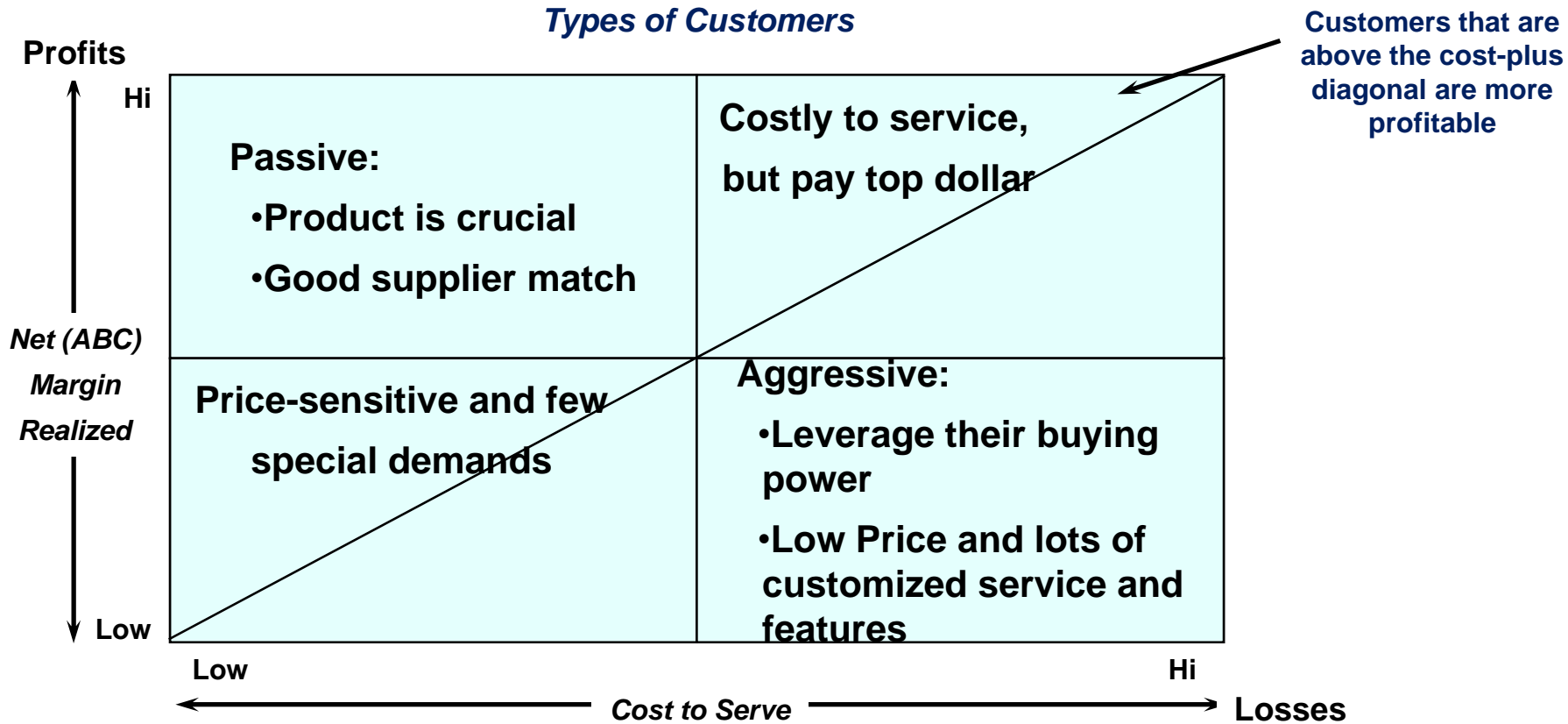
Little to no pre-sales support (standard pricing and ordering)

No post-sales support

Little inventory support required

Pay on time

Options for Managing Customers



Profitability depends on whether and how much the net product margins recover the customer-specific costs.

Managing Customer Profitability:

Once companies understand customer profitability at the individual customer level, they can target actions to improve customer by:

- **Process improvements that lower the cost of servicing customer demands (e.g., electronic ordering, electronic self-help and self-service)**
- **Product design decision: de-feature products to match the price points and value proposition to price-sensitive customers**
- **Menu-Based Pricing, allowing customers to choose the level and features of service they wish, and also to pay for them**
- **Managing customer relationships: minimum order size, standard packaging and shipping, small orders through distributors**

Case Study: Kemps

Kemps Dairy is a manufacturer and distributor of ice cream and dairy products and part of HP Hood, the 2nd largest dairy group in the U.S.

Kemps faced growing industry and customer consolidation, increased competition, and greater demands from its customers for specialized products, services, and delivery

Kemps' new strategy – to be the best cost producer in the industry and the best branded food products company – required it to have much better insights about its cost of production, delivery, and service



Kemps' Corporate Initiatives

Kemps customers expect products with high quality, quick delivery and low price. So to be competitive, Kemps needed to know the true cost of using all its resources.

- Obtain cost advantage through operational excellence
- Become/stay the lowest cost producer of commodity products
- Optimize distribution and supply chain efficiency
- Increase customer profitability
- Increase product profitability



Kemps Foods: Time-Driven ABC Reveals an Unprofitable Customer

Kemps learned it had a medium-sized unprofitable customer: a chain of specialty ice cream shops with special recipes, small production runs and frequent direct store deliveries

- Revenue (3 months) : **\$1,182,092**
- Loss (3 months) : **(\$95,510)**
- High number of stores, 133 active ship-to locations
- 39 locations were profitable; the remaining 94 locations lost money
- High degree of service (2 – 3 deliveries per week per location, partial cases, dumps, follow-up calls)
- Small order sizes

Kemps Foods: Change pricing or relationship to transform an unprofitable customer.

Kemps CEO offers customer the choice among three options:

- Institute an 11 percent price increase to continue the status quo
- Maintain existing pricing, but use Kemps-branded ice cream: standard recipes, large production runs, standard packaging, and weekly deliveries
- Find another ice cream supplier



Problems with Original ABC (as we introduced it in late 1980s)

Resource Intensive

Costly to interview and survey people for initial ABC model

Costly and difficult to maintain and update the ABC model as processes and resource spending change, and new activities added

Not Scalable

Can only handle relatively few activities; masks diversity and complexity of demands from individual orders, channels or customers

Inaccurate

Percentage allocations are subjective; difficult to validate estimates

Assumes resources are at 100% of capacity

The New Time-Driven Activity-Based Costing approach, illustrated with case study of Towerton Financial Services

Monthly Income Statement (000)

Sales	<u>\$ 4,035</u>
Brokers	1,561
Account Managers	161
Financial Planners	177
Principals	388
Customer Service Representatives	176
Computer Server Expenses	<u>241</u>
Total Costs	<u>2,704</u>
Margin	<u>1,331</u>
Margin %	33%
S, G & A (Unallocated Corporate Expenses)	1,300
Operating Income	31
Operating Margin	1%

Towerton had an extensive resource base.

230 Brokers

18 Investment Account Managers

20 Financial Planners

30 Principals

42 Customer Service Representative

76 Computer Servers

Time-Driven Activity-Based Costing Step 1: Calculate the **cost per unit time** of Supplying Resource Capacity.

$$\text{Capacity Cost Rate} = \frac{\text{Cost of capacity supplied}}{\text{Practical capacity of resources supplied}}$$

Broker: Annual compensation (including fringe benefits)	\$65,000
Occupies 80 square feet of space @ \$125/sq. ft/year	10,000
Computer technology and support	<u>6,500</u>
Annual cost	\$81,500
Monthly cost	\$ 6,800

Broker works 20 days per month, 7.5 hours per day.

After breaks and training, has **6.5** hours of productive time available per day

$$\text{Cost Rate} = \frac{\$6,800/\text{month}}{20 \times 6.5 = 130 \text{ hours/month}} = \text{\$52 per hour} [\text{\$0.87/minute}]$$

Time-Driven Activity-Based Costing Step 2: Use Time Equations to Estimate Resource Demands by Transactions and Products

Broker's time (minutes) = 60 minutes/new account opened +
5 minutes/trade (stock or mutual fund) +
20 minutes/meeting w. existing customer

The Time-Driven ABC Model reveals actual product-line profitability.

	Stock Trading	Mutual Fund Trading	Account Manage- ment	Financial Planning	Product Profits	Unused Capacity	Actual Profits
Sales	<u>\$ 2,687</u>	<u>\$ 1,091</u>	<u>\$ 90</u>	<u>\$ 167</u>	<u>\$ 4,035</u>		<u>\$ 4,035</u>
Brokers	1,421	141			1,563	(2)	1,561
Account Managers			143		143	18	161
Financial Planners			0	146	146	30	177
Principals	263	26	42	13	344	44	388
Customer service representatives	122	30	6	4	163	14	176
Computer server expenses	152	22	38	5	216	25	241
Total Costs	<u>1,958</u>	<u>219</u>	<u>229</u>	<u>168</u>	<u>2,574</u>	<u>129</u>	<u>2,704</u>
Margin	\$ 728	\$ 872	\$ (139)	\$ (1)	\$ 1,461	\$ (129)	\$ 1,331
Margin %	27%	80%	-154%	0%	36%	-3%	33%
S, G & A							1,300
Operating Income							\$ 31
Operating Margin							1%

Time equations enable TDABC to easily incorporate variety and complexity

$$\begin{aligned} \text{Order processing time (minutes)} &= 10 + 2 \times \text{number of line items} \\ &+ 5 \{\text{if new customer}\} + 4 \times \text{number of rate quotes from sales} \\ &+ \{\text{if international order}\} [2 \{\text{if customs form}\} + 5 \{\text{if shipping declaration}\} + 10 \{\text{if consular clearance}\}] \\ &+ \{\text{if special services}\} [5 \{\text{if rush order}\} + 10 \{\text{if credit hold}\} + 2 \{\text{if hazardous material}\}] \end{aligned}$$

Data about specific order characteristics for time equations come automatically from company's ERP and CRM systems.

Time Equation for Inside Sales Process

$$\begin{aligned} \text{Order Quote} &= \text{receive order} + \text{enter order} + \text{confirm order} \\ \text{Time (minutes)} & \\ &+ \{\text{if new account}\} \text{ setup account} \\ &+ \{\text{if quote needed}\} \\ &(\text{identify need} + \text{contact vendor} + \text{quote price}) \\ &= 2 + 2 * \text{number of line items} + 1 \\ &+ 5 \{\text{if new account}\} \\ &+ \{\text{if quote needed}\} \\ &[1 + 6 * \text{number of line items} + 5 \{\text{if not in stock}\}] \end{aligned}$$

Example of Corporate Support Department Assignment: Accounts Receivable (A/R) department

Calculate annual cost of A/R department:	\$800,000
Estimate practical capacity of six A/R clerks	10,000 hours
Capacity cost rate	\$80/ hour

Estimate time to perform activities :

Manual processing of invoice and cash receipt	1.0 hours
Electronic processing of invoice and EFT	0.1 hours
Maintain customer credit file	0.5 hours

Assign cost of Accounts Receivable department to operating divisions

Division 1: Large number of small to medium-sized customers

\$10 million sales

4,000 customer invoices, all manual invoicing and cash collection

1,000 customers

A/R processing costs: $[4,000*1 + 1,000*0.5] * 80 =$ \$360,000

Division 2: Small number of large customers

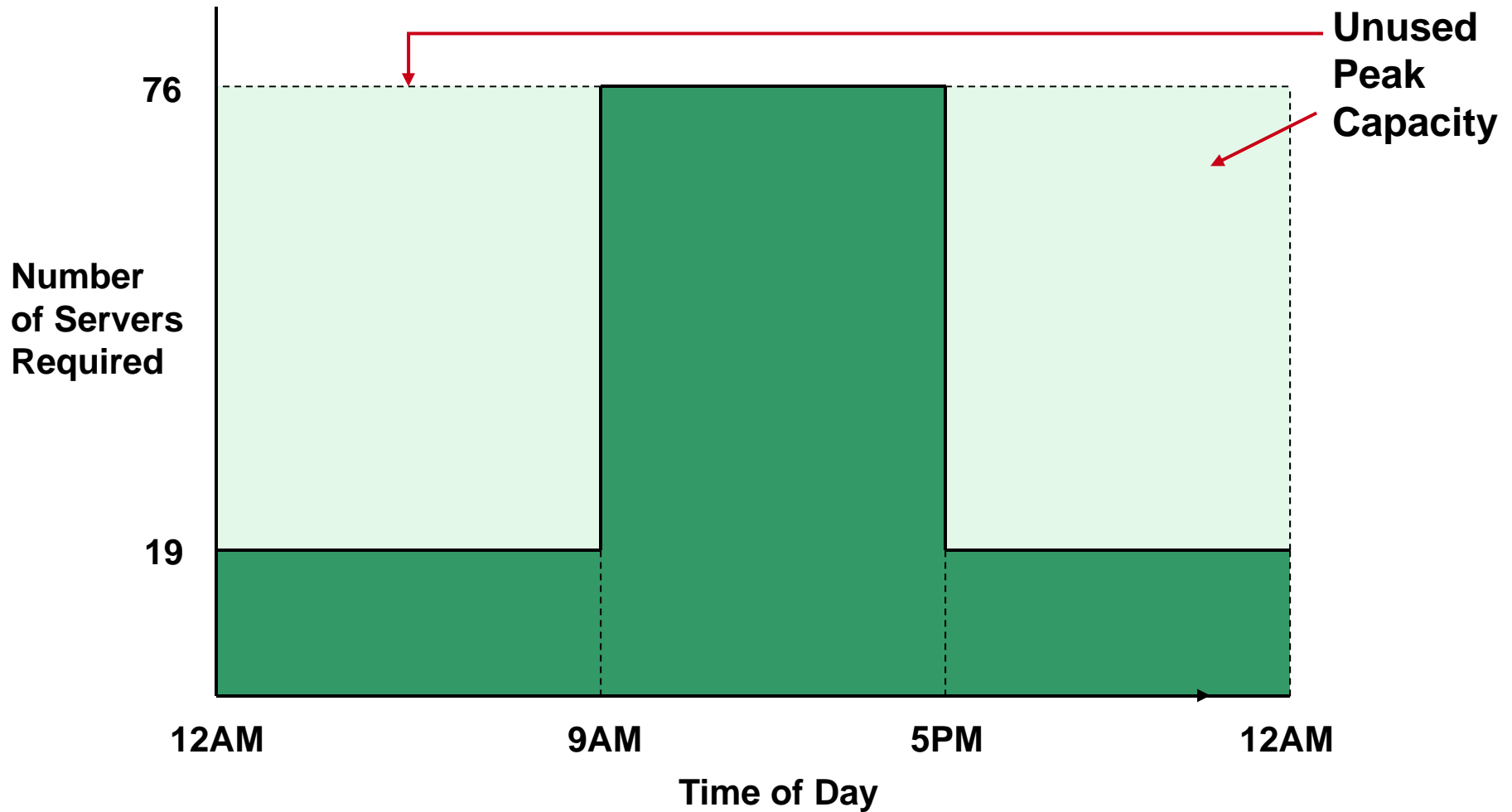
\$10 million sales

400 customer invoices, all electronic invoicing and funds transfer

200 customers

A/R processing costs: $[400*0.1 + 200*0.5] * 80 =$ \$11,200

Costing a resource with peak capacity demands



Calculate Server Cost per Hour

Each server costs \$3,168 per month [\$38,000 per year]

Servers available 22 days per month, 24 hours per day = 528 hours/month

Server cost per hour = $\$3,168 / 528 = \$6 / \text{hour}$

Server processing capacity: 50 MIPS/hour

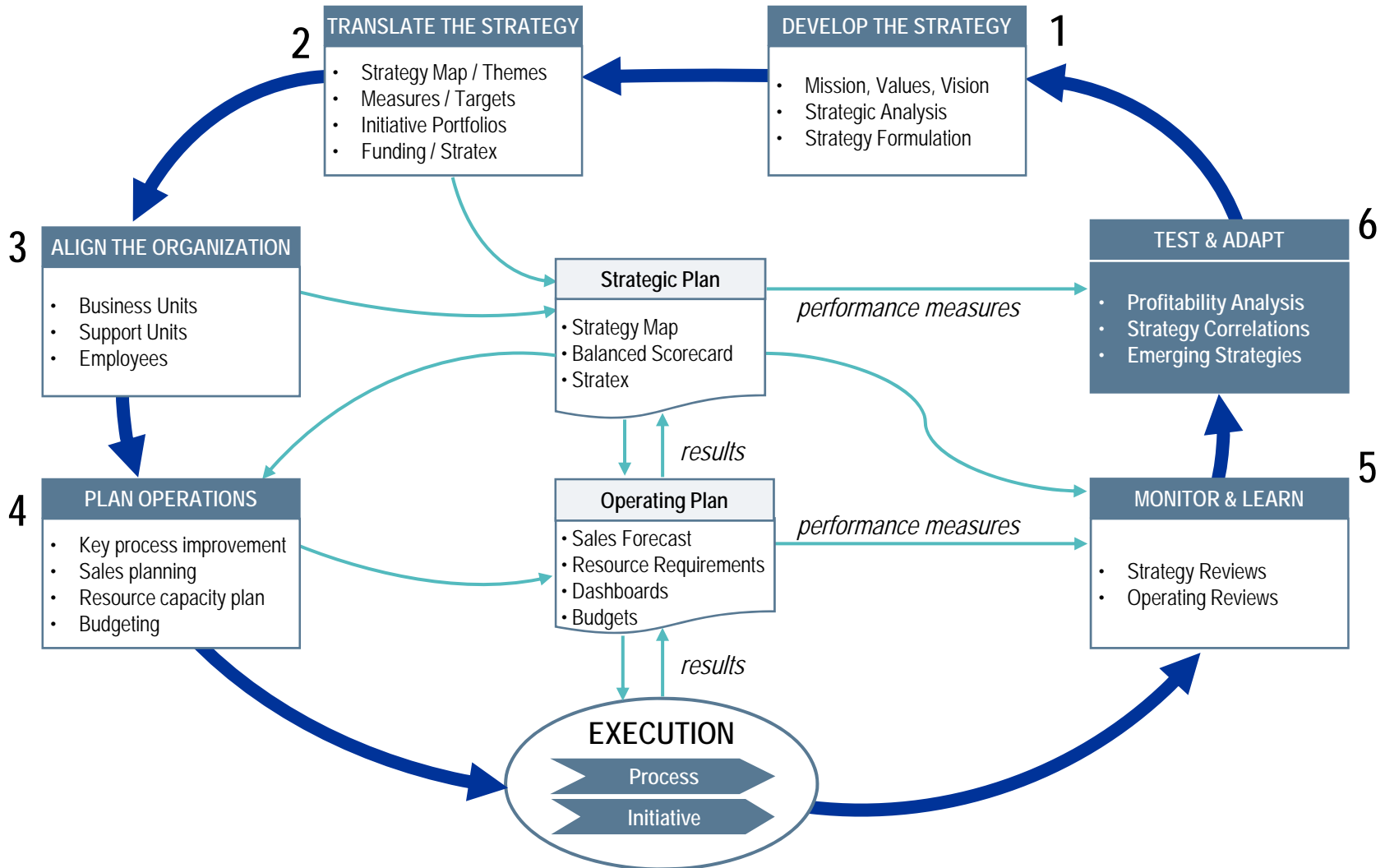
Calculate Server Cost Rate per Hour

The capacity cost rates for the server resource (in \$/MIPS) are calculated as follows:

Peak Hours:
$$\frac{[76 * 8 \text{ hours} + (76-19) * 16 \text{ hours}] * \$6}{[76 \text{ servers} * 8 \text{ hours} * 50 \text{ MIPS/hour}]} = \$0.30/\text{MIPS}$$

Off-Peak Hours:
$$[19 * 16 * \$6] / [19 * 16 * 50] = \$0.12/\text{MIPS}$$

Stage 6 of The Management System: Test and Adapt



Stage 6: Strategy Testing and Adapting Meetings

- **Analyze External, Competitive Information and Internal Information**
- **Annually (perhaps quarterly for fast-moving industries)**
- **Senior management team; functional and planning specialists**
- **Test and adapt strategy based on causal analytics**

The Time-Driven ABC Model reveals actual product-line profitability.

	Stock Trading	Mutual Fund Trading	Account Manage- ment	Financial Planning	Product Profits	Unused Capacity	Actual Profits
Sales	<u>\$ 2,687</u>	<u>\$ 1,091</u>	<u>\$ 90</u>	<u>\$ 167</u>	<u>\$ 4,035</u>		<u>\$ 4,035</u>
Brokers	1,421	141			1,563	(2)	1,561
Account Managers			143		143	18	161
Financial Planners			0	146	146	30	177
Principals	263	26	42	13	344	44	388
Customer service representatives	122	30	6	4	163	14	176
Computer server expenses	152	22	38	5	216	25	241
Total Costs	<u>1,958</u>	<u>219</u>	<u>229</u>	<u>168</u>	<u>2,574</u>	<u>129</u>	<u>2,704</u>
Margin	\$ 728	\$ 872	\$ (139)	\$ (1)	\$ 1,461	\$ (129)	\$ 1,331
Margin %	27%	80%	-154%	0%	36%	-3%	33%
S, G & A							1,300
Operating Income							\$ 31
Operating Margin							1%

Towerton revises its strategy.

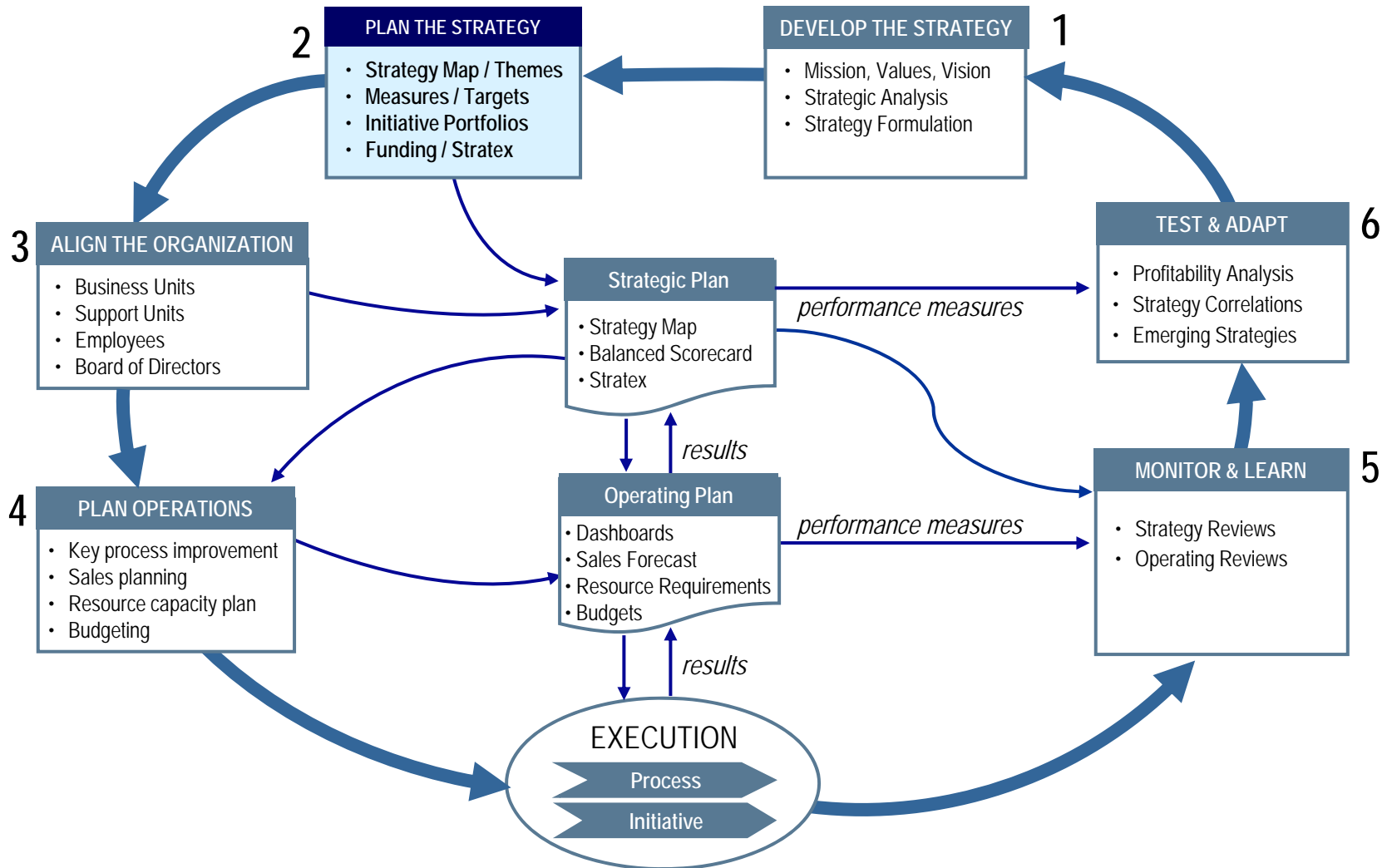
Raise the price per stock trade to \$12 from \$7.

Focus on signing additional mutual fund distribution agreements with other third-party mutual funds.

Establish a minimum account size for the investment management product of \$100,000.

Increase the price of the initial financial plan to \$1,700 per plan and increase the hourly rate charged by financial planners to \$175/hour.

Stage 2 of the Management System: Plan the Strategy



Towerton Financial updates its Balanced Scorecard (partial).

Strategic Objective	BSC Measure	Target
F1: Increase Revenues	Year-to-Year Revenue Growth	35%
F2: Increase Gross Margins	Gross Margin Percentage	40%
F3: Increase Productivity	Reduce Indirect Costs as Percentage of Sales	25%
C1: Increase Number of Customers Performing Mutual Fund Transactions	Number of Mutual Fund Transactions per Customer	40
C2: Increase Number of Transactions by Financial Planning Customers	Number of Stock and Mutual Fund Trades per High Net Worth Customer	75
P1: Reduce Process and Confirmation Times for On-line Transactions	<ul style="list-style-type: none"> Total customer time to perform online transaction Defect rates for online transactions 	<p>60 seconds</p> <p>100 defects per million transactions</p>

Strategic Initiatives

Undertake a marketing campaign to build the company's image with high net worth clients

Undertake a marketing campaign to encourage all clients to take advantage of the company's stock trading and anticipated expanded mutual fund product offering. Emphasize features like fast and excellent trade execution and knowledgeable and friendly brokers

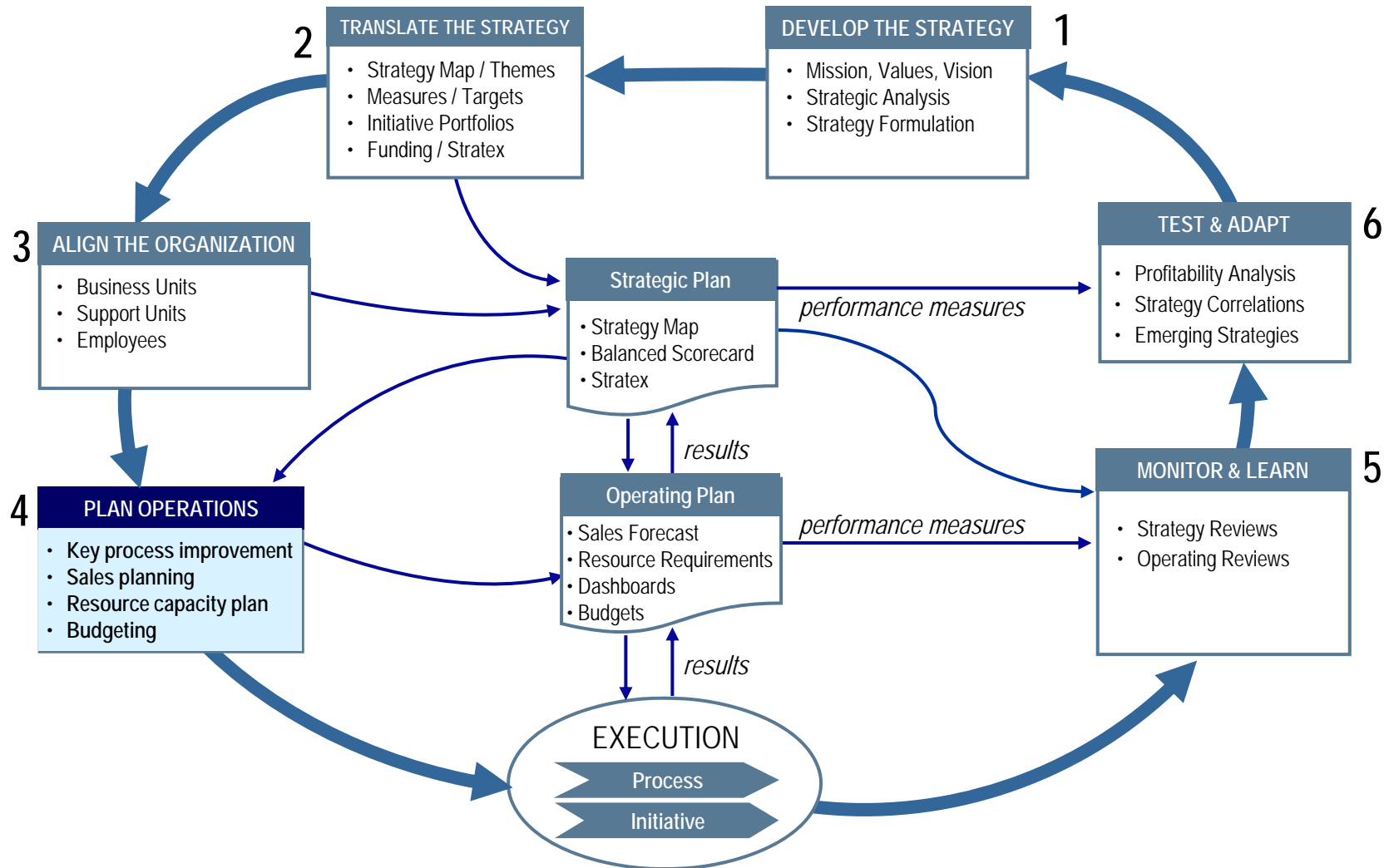
Enhance online platform for ease of use and rapid execution



Towerton develops a financial sales forecast for Q1 based on its new strategy.

<u>Product Line</u>	<u>Sales</u>
Stock Trading	\$ 3,644,000
Mutual Fund Trading	2,031,000
Investment Management	112,000
<u>Financial Planning</u>	<u>169,000</u>
Total	\$ 5,956,000

Stage 4 of the Management System: Plan Operations



Towerton Financial Corporation's Forecast of Sales and Operations

	Stock Trading	Mutual Fund Trading
Forecasted Monthly Sales (000)	\$3,644	\$2,031
Number of transactions	275,000	49,000
Number of new accounts opened	595	255
Number of meetings servicing existing accounts	3,570	765

Towerton Financial Estimates Resources Required to Fulfill the Operating Plan

Broker's Time for Stock Trading	=	5 minutes*(# Transactions on Existing Accounts) + 60*(# Accounts Opened) + 20* (# Meetings with Existing Customers)	
	=	$[5 * 275,000 + 60 * 595 + 20 * 3,570] / 60 =$	24,702
		hours	
.... for Mutual Fund Trading	=	$[5 * 49,000 + 60 * 255 + 20 * 765] / 60 =$	<u>4,593</u>
Total Demand for Broker Hours	=		29,295 hours
Broker Hours supplied per month			130
Number of brokers required to meet the sales plan			225.3

Towerton calculates the quantity of resources required to implement next period's operating plan.

Resource Category	Total Hours	hours/month per resource unit	Resource units required	Resource units supplied	Capacity Utilization
Brokers	29,295	130	225.3	230	98%
Account Managers	793	130	6.1	7	87%
Financial Planners	1,500	130	11.5	12	96%
Principals	3,118	130	24.0	25	96%
Customer service reps	5,282	140	37.7	40	94%
Peak MIPS Utilized	516,500	8,800	58.7	60	98%

Towerton Financial Forecasts Monthly Resource Costs

	Resource units supplied	Monthly resource cost per unit	Total monthly resource cost (000)
Brokers	230	\$ 6,800	\$1,561
Account Managers	7	9,000	63
Financial Planners	12	8,800	106
Principals	25	12,900	323
Customer Service Representatives	40	4,200	168
Servers	60	3,200	190

Towerton Financial concludes its budgeting process by forecasting next period's product-line income statement.

	Stock Trading	Mutual Fund Trading	Account Management	Financial Planning	Total Used	Unused Capacity	Total Supplied
Average Price per Transaction	\$ 13.25	\$ 41.45					
Sales	<u>\$ 3,644</u>	<u>\$ 2,031</u>	<u>\$ 113</u>	<u>\$ 169</u>	<u>\$ 5,956</u>		<u>\$ 5,956</u>
Brokers	1,290	240			1,529	32	1,561
Account Managers			55		55	8	63
Financial Planners				102	102	4	106
Principals	238	45	19	9	310	13	323
Customer service representatives	122	30	2	3	158	10	168
Computer server expenses	128	39	11	5	184	6	190
Total Costs	1,778	354	87	119	2,338	73	2,411
Margin	1,866	1,677	26	50	3,618	(73)	3,545
Margin %	51%	83%	23%	30%	61%	-1%	60%
S, G & A (Unallocated Corporate Expenses)							<u>1,300</u>
Operating Income							2,245
Operating Margin							38%

Summary: Link strategic planning to resource allocation with time-driven activity-based budgeting (TDABC)

- **Translate strategy's revenue growth target into next period's sales forecast**
- **Develop detailed sales and operating plans**
- **Run a TDABC model, with the projected sales and operating plans, and any estimated process improvements, to forecast resource capacity (people, equipment, technology, space) required to deliver on strategic plan**
- **Develop forecast (budget) for next period's operational and capital spending**
- **Calculate pro-forma profitability, with detailed breakdown by product, customer, channel, and region**

Time-Driven ABC provides multiple benefits.

Fast and Easy to Implement: Only estimate two parameters

- Cost of supplying capacity

- Consumption of capacity by transactions, orders, products and customers

Scalable

- Easily scales to enterprise-wide models

- Handles millions of orders and transactions

Accurate

- Incorporates capacity explicitly in costing rates

- Captures specific features for particular orders, processes, suppliers, and customers

- Estimates can be validated through observation and work sampling

Lower Cost to Maintain

- Data driven, not based on time surveys

- Works from automatic data feeds from ERP and CRM systems

Proven and Successful in Enterprise Models

- Charles Schwab, Lowe's, FedEx, TNT, Citigroup Technology, Coca Cola Belgium, Danisco, Kemps, Sysco, SuperValu, Deutsche Bank, American Express, Johnson & Johnson, Petco.com