Cases from Management Accounting Practice

Volume 15

edited by

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Preface

The cases in this volume were presented at the Management Accounting Section of the American Accounting Association's 2000 annual meeting in Mesa, Arizona. The cases describe the implementation and application of management accounting innovations to systems designed to support the maintenance and creation of value in the modern enterprise. Each of the cases presents an application of management accounting techniques to support change management.

Starting with an excellent review of the strategic management of new product lines by *Mercedes Benz*, Tom Albright contributes an interesting and insightful picture of how target costs need to consider both current and strategic value issues. Mercedes' use of a target cost index to integrate cost and strategic value is particularly interesting. The next three cases focus on the implementation and use of the balanced scorecard and performance measures to influence change. Larry Carr's *Lucent Technologies* and Hugh Grove, Tom Cook, and Ken Richter's *Coors Brewing Company* cases provide really excellent examples of the implementation and use of balanced scorecard performance measures. Both cases present detailed and enthralling stories about the cultural imperatives needed to implement effective change. In addition, contrasting these cases can introduce a lively debate about conditions that will lead to the relative success or failure of balanced scorecard implementations. The Coors case highlights supplier chain management.

Leif Sjöblom's *BG Bank* is a fascinating case that links strategic reevaluation to performance measures designed to bring the company into line with a new strategy for creating value. Supporting video clips, free of charge, are available from Leif at sjoblom@imd.ch. This case paints a dynamic and interesting classroom experience that highlights strategic planning, implementation, and performance measurement design.

The remaining two cases are powerful examples of the issues related to real-world applications of activity-based management (ABM). Gary Siegel, Nancy Mangold, and Gail Kaciuba provide an excellent insight into the design of an activity-based costing system in a *Medical Practice*. This insightful and detailed case gives students the opportunity to understand the accuracy limitations inherent in an ABC system while examining the economies and operating realities of current medical practices. If desired the case can be used with ABC software. Finally, Jon Guy and Jane Saly have contributed an excellent and straightforward application of ABM to an analysis of distribution costs related to alternative distribution channels, in *Colombo Frozen Yogurt*.

Combined, these cases provide a vivid illustration of the use of management accounting for the implementation and management of target costing, strategic value analysis, change management, performance measures, balanced scorecard, value chain, activity-based costing, and activity-based management.

All of these cases have been applied in the classroom many times. The support materials are detailed and provide excellent guidance for the successful classroom application of these cases. The

cases and teaching notes may be duplicated for classroom use. However, they may not be included in articles, books, or other publications without the prior consent of the Institute of Management Accountants. Users of these cases should remember they were intended as a basis for class discussion rather than to illustrate either effective or ineffective management.

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Volume 15

Case 1

Mercedes-Benz
All Activity Vehicle (AAV)

Thomas L. Albright, University of Alabama

The author wishes to express his gratitude to Ola Kallenius, Johnathan DeHart, Jason Hoff, Henrik Jonsson, Josef Pfau, and Günther Thuss of Mercedes-Benz for their generous contributions to the development of this case.

Introduction

During the recession beginning in the early 1990s, Mercedes-Benz (MB) struggled with product development, cost efficiency, material purchasing, and problems in adapting to changing markets. In 1993, these problems caused the worst sales slump in decades, and the luxury carmaker lost money for the first time in its history. Since then, MB has streamlined the core business, reduced parts and system complexity, and established simultaneous engineering programs with suppliers.

In their search for additional market share, new segments, and new niches, MB started developing a range of new products. New product introductions included the C-class in 1993, the E-class in 1995, the new sportster SLK in 1996, and the A-class and M-class All Activity Vehicle (AAV) in 1997. Perhaps the largest and most radical of MB's new projects was the AAV. In April 1993, MB announced it would build its first passenger vehicle-manufacturing facility in the United States. The decision emphasized the company's globalization strategy and desire to move closer to its customers and markets.

Mercedes-Benz United States International used function groups with representatives from every area of the company (marketing, development, engineering, purchasing, production, and controlling) to design the vehicle and production systems. A modular construction process was used to produce the AAV. First-tier suppliers provided systems, rather than individual parts or components, for production of approximately 65,000 vehicles annually.

The AAV Project Phases

The AAV has moved from concept to production in a relatively short period of time. The first phase, the concept phase, was initiated in 1992. The concept phase resulted in a feasibility study that was approved by the board. Following board approval, the project realization phase began in 1993, with production commencing in 1997. Key elements of the various phases are described below.

Concept Phase, 1992–1993

Team members compared the existing production line with various market segments to discover opportunities for new vehicle introductions. The analysis revealed opportunities in the rapidly expanding sports utility vehicle market that was dominated by Jeep, Ford, and GM. Market research

was conducted to estimate potential worldwide sales opportunities for a high-end AAV with the characteristics of a Mercedes-Benz. A rough cost estimate was developed that included materials, labor, overhead, and one-time development and project costs. Projected cash flows were analyzed over a 10-year period using net present value (NPV) analysis to acquire project approval from the board of directors. The sensitivity of the NPV was analyzed by calculating "what-if" scenarios involving risks and opportunities. For example, risk factors included monetary exchange rate fluctuations, different sales levels due to consumer substitution of the AAV for another MB product, and product and manufacturing cost that differed from projections.

Based on the economic feasibility study of the concept phase, the board approved the project and initiated a search for potential manufacturing locations. Sites located in Germany, other European countries, and the United States were evaluated. Consistent with the company's globalization strategy, the decisive factor that brought the plant to the United States was the desire to be close to the major market for sports utility vehicles.

Project Realization Phase, 1993–1996

Regular customer clinics were held to view the prototype and to explain the new vehicle concept. These clinics produced important information about how the proposed vehicle would be received by potential customers and the press. Customers were asked to rank the importance of various characteristics including safety, comfort, economy, and styling. Engineers organized in function groups designed systems to deliver these essential characteristics. However, MB would not lower its internal standards for components, even if initial customer expectations might be lower than the MB standard. For example, many automotive experts believed the superior handling of MB products resulted from manufacturing the best automobile chassis in the world. Thus, each class within the MB line met strict standards for handling, even though these standards might exceed customer expectations for some classes. MB did not use target costing to produce the lowest-price vehicle in an automotive class. The company's strategic objective was to deliver products that were slightly more expensive than competitive models. However, the additional cost would have to translate into greater perceived value on the part of the customer.

Throughout the project realization phase, the vehicle (and vehicle target cost) remained alive because of changing dynamics. For example, the market moved toward the luxury end of the spectrum while the AAV was under development. In addition, crash test results were incorporated into the evolving AAV design. For these reasons, MB found it beneficial to place the design and testing team members in close physical proximity to other functions within the project to promote fast communication and decision making. Sometimes new technical features, such as side air bags, were developed by MB. The decision to include the new feature on all MB lines was made at the corporate level because experience had shown that customers' reactions to a vehicle class can affect the entire brand.

Production Phase, 1997

The project was monitored by annual updates of the NPV analysis. In addition, a three-year plan (including income statements) was prepared annually and reported to the headquarters in Germany. Monthly departmental meetings were held to discuss actual cost performance compared with standards developed during the cost estimation process. Thus, the accounting system served as a control mechanism to ensure that actual production costs would conform to target (or standard) costs.

Target Costing and the AAV

The process of achieving target cost for the AAV began with an estimate of the existing cost for each function group. Next, components of each function group were identified, with their associated

costs. Cost reduction targets were set by comparing the estimated existing cost with the target cost for each function group. These function groups included the following: doors, sidewall and roof, electrical system, bumpers, powertrain, seats, heating system, cockpit, and front end. Next, cost reduction targets were established for each component. As part of the competitive benchmark process, MB bought and tore down competitors' vehicles to help understand their costs and manufacturing processes.

The AAV manufacturing process relied on high value-added systems suppliers. For example, the entire cockpit was purchased as a unit from a systems supplier. Thus, systems suppliers were part of the development process from the beginning of the project. MB expected suppliers to meet established cost targets. To enhance function group effectiveness, suppliers were brought into the discussion at an early stage in the process. Decisions had to be made quickly in the early stages of development.

The target costing process was led by cost planners who were engineers, not accountants. Because the cost planners were engineers with manufacturing and design experience, they could make reasonable estimates of costs that suppliers would incur in providing various systems. Also, MB owned much of the tooling, such as dies to form sheet metal, used by suppliers to produce components. Tooling costs are a substantial part of the one-time costs in the project phase.

Index Development to Support Target Costing Activities[1]

During the concept development phase, MB team members used various indexes to help them determine critical performance, design, and cost relationships for the AAV. To construct the indexes, various forms of information were gathered from customers, suppliers, and their own design team. Though the actual number of categories used by MB was much greater, Table 1 illustrates the calculations used to quantify customer responses to the AAV concept. For example, values shown in the importance column resulted from asking a sample of potential customers whether they consider each category extremely important when considering the purchase of a new MB product. Respondents could respond affirmatively to all categories that applied.

Table 1. Relative Importance Ranking by Category

Category	Importance	Relative Percentage
Safety	32	41%
Comfort	25	32
Economy	15	18
Styling	7	9
Total	79	100

[1] All numbers have been altered for proprietary reasons; however, the tables illustrate the actual process used in the development of the AAV.

To gain a better understanding of the various sources of costs, function groups were identified together with target cost estimates. (MB also organizes teams called function groups whose role is to develop specifications and cost projections.) As shown in Table 2, the relative target cost percentage of each function group was computed.

Table 2. Target Cost and Percentage by Function Group

Function Group	Target Cost	Percentage of Total
Chassis	$ x,xxx	20%
Transmission	$ x,xxx	25
Air conditioner	$ x,xxx	5
Electrical system	$ x,xxx	7
Other function groups	$ x,xxx	43
Total	$xx,xxx	100%

Table 3 summarizes how each function group contributes to the consumer requirements identified in Table 1. For example, safety was identified by potential customers as an important characteristic of the AAV; some function groups contributed more to the safety category than others. MB engineers determined chassis quality was an important element of safety (50% of the total function group contribution).

Table 3. Function Group Contribution to Customer Requirements

Category / Function Group	Safety	Comfort	Economy	Styling
Chassis	50%	30%	10%	10%
Transmission	20	20	30	
Air conditioner		20		5
Electrical system	5		20	
Other systems	25	30	40	85
Total	100%	100%	100%	100%

Table 4 combines the category weighting percentages from Table 1 with the function group contribution from Table 3. The result is an importance index that measures the relative importance of each function group across all categories. For example, potential customers weighted the categories of safety, comfort, economy, and styling as .41, .32, .18, and .09, respectively. The rows in Table 4 represent the contribution of each function group to the various categories. The importance index

for the chassis is calculated by multiplying each row value by its corresponding category value, and summing the results ((.50 x .41) + (.30 x .32) + (.10 x .18) + (.10 x .09) = .33).

Table 4. Importance Index of Various Function Groups

Category / Function Group	Safety .41	Comfort .32	Economy .18	Styling .09	Importance Index
Chassis	.50	.30	.10	.10	.33
Transmission	.20	.20	.30		.20
Air conditioner		.20		.05	.07
Electrical system	.05		.20		.06
Other systems	.25	.30	.40	.85	.35
Total	1.00	1.00	1.00	1.00	

As shown in Table 5, the target cost index is calculated by dividing the importance index by the target cost percentage by function group. Managers at MB used indexes such as these during the concept design phase to understand the relationship of the importance of a function group to the target cost of a function group. Indexes less than one may indicate a cost in excess of the perceived value of the function group. Thus, opportunities for cost reduction, consistent with customer demands, may be identified and managed during the early stages of product development. Choices made during the project realization phase were largely irreversible during the production phase because approximately 80% of the production cost of the AAV was for materials and systems provided by external suppliers.

The AAV project used a streamlined management structure to facilitate efficient and rapid development. The streamlined MB organization produced an entirely new vehicle from concept to production in four years. Using the target costing process as a key management element, MB manufactured the first production AAV in 1997.

Table 5. Target Cost Index

Index / Function Group	(A) Importance Index	(B) % of Target Cost	(c) A/B Target Cost Index
Chassis	.33	.20	1.65
Transmission	.20	.25	.80
Air conditioner	.07	.05	1.40
Electrical system	.06	.07	.86
Other systems	.35	.43	.81
Total		1.00	

Questions for Discussion

1. What is the competitive environment faced by MB?
2. How has MB reacted to the changing world market for luxury automobiles?
3. Using Cooper's cost, quality, and functionality chart,[2] discuss the factors on which MB competes with other automobile producers such as Jeep, Ford, and GM.
4. How does the AAV project link with MB strategy in terms of market coverage?
5. Explain the process of developing a component importance index. How can such an index guide managers in making cost reduction decisions?
6. How does MB approach cost reduction to achieve target costs?
7. How do suppliers factor into the target costing process? Why are they so critically important to the success of the MB AAV?
8. What role does the accounting department play in the target costing process?

[2] Robin Cooper, *When Lean Enterprises Collide,* Boston: Harvard Business School Press, 1995.

Case 2

Lucent Technologies

Shared Financial Services Balanced Scorecard Implementation

Lawrence P. Carr, Babson College

Professor Carr prepared this case as a basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.

> We have made some real progress with our balanced scorecard but it just doesn't seem to have the effect on performance I thought we could achieve. Now that corporate is talking about a Lucent wide roll out of the balanced scorecard, our people might take our leading edge effort a little more seriously.
>
> Tom Francesconi, financial planning and quality manager

Tom, as the manager for quality and process improvement at the Lucent Global Financial Services[1] (GFS) group, was constantly in search of tools and techniques to assist in the process improvement of financial services. He was trained in the principles of quality and was given the assignment of implementing a continuous improvement program at the GFS facility in Alpharetta, Georgia.

The Company

Lucent Technologies, a $30 billion global equipment and service telecommunication firm, was spun off from ATT in 1996. Lucent designs, builds and delivers public and private networks, communication systems and software, data networking systems, business telephone systems and microelectronics components. They have approximately 140,000 employees in more than 90 countries with headquarters in Murray Hill, New Jersey.

Management quickly established a new and aggressive entrepreneurial culture. Competing in a fast-paced and extremely competitive market, their strategic plan and commitment to the stockholders was to achieve double digit top and bottom line growth, double ROA from 5% to 10%, and reduce SG&A by 4 to 8%. The finance leadership team established two objectives called "conditions of satisfaction" for the CFO organization as a way to link finance to the aggressive corporate performance commitments or the "strategic intent" and to support the new entrepreneurial culture. The conditions are:

- 100% of our business partners acknowledge Team CFO as a strategic business partner in achieving Lucent objectives.
- 100% of Team CFO agrees that we live our values and purpose.

[1] The group was formally known as Lucent Financial Services (LFS) and only recently added the name Global to reflect their worldwide mission.

- Total CFO budget is less than 1% of Lucent revenue.
- Financial modules of SAP implemented Lucent-wide.

Lucent uses a central shared service model for their financial organization (CFO). The transaction intensive activities such as invoicing, accounts payable, payroll, cost accounting, accounts receivable, and inventory accounting are done by the GFS. The CFO organization called Team CFO consists of three basic groups 1) Business Support for transactions, Global Financial Services GFS, 2) Policy and Corporate Center Support, Treasury, Tax, Auditing, Controller and 3) Business Analysis and Decision Support, the Business Unit CFOs. The manager of GFS reports directly to the corporate controller, Jim Lusk. Over 900 people work to provide these transaction services. Most are based in Georgia with global satellite operations currently under development.

The Lucent CFO, Don Peterson, joined the company during the spin-off from ATT in late 1996. He led the drive to make the CFO organization world class and a real strategic business partner. Don's concept was for the CFO organization to focus on participating, planning and executing the corporate vision, not merely reporting the financial state of the business. He wanted Team CFO to "add value" to decision making at the best cost to the firm. Don stated that he wouldn't rest until 100% of Lucent views 100% of his CFO team as invaluable strategic business partners. The CFO mission and conditions of satisfaction were clear for the GFS group, especially the challenge to revamp systems and process so that the total cost of CFO to the corporation was no more than 1% of revenue. For GFS this drive translated into being an "Incredibly Awesome Partner Service…Delivered by Incredibly Awesome People." This means delivering the financial services at the lowest cost, on time, with quality and customer satisfaction ahead of the competition.

GFS Process Improvement

With the mandate to cut cost and improve the level of service, GFS needed to take a very hard look at all their processes. The timing was appropriate as they were also in the midst of implementing an enterprise-wide computing system, SAP. They started the quality improvement process by benchmarking and researching best practices and developing specific programs to improve each process. The primary processes they performed organized the GFS group: Accounts Payable, Payroll, Accounts Receivable, Treasury Operations, and Inventory. Process leaders developed their plan for improvement. Tom's group, Financial Planning and Continuous Improvement, was assigned the task of supporting and helping GFS process owners with their improvement efforts.

Accounts Payable was striving to be a paperless process. They wanted to improve the 60% current electronic payments. Payroll was consolidating the many different systems under one SAP system. This involved simplifying payroll practices and increasing the use of electronic funds transfer. Accounts Receivable was mechanizing subledger reconciliation using SAP tools and increasing the speed of matching payments with the appropriate invoices for customers with multiple purchases. Treasury operations was implementing software packages to identify check fraud and encoding errors online before checks were cleared. Inventory was improving their processes to obtain greater accuracy and speed in inventory accounting.

To monitor the progress of these improvement efforts, each process owner developed a set of internal measures that captured their progress. Tom reported to the GFS director and provided quality improvement support to each of the process managers. His continuous improvement group helped the process owners find the appropriate measures and developed ways to collect the information. Through this quality operation he became aware of the balanced scorecard system. He thought this simple integrative technique fit the current measurement efforts and was consistent with the Lucent GFS quality improvement efforts. He saw it as an umbrella to cover all of the new measurement efforts and to pull together the various process owners' self-measurement efforts. Using the scorecard they could clearly communicate process improvement.

Implementation

Tom and his team, known as continuous improvement analysts, began an intensive reading and training effort on balanced scorecard (BSC) principles. They attended seminars and a week-long professional training program. Given their experience in quality and process improvement measures, they felt they could build on the measurement efforts already underway at GFS and develop a scorecard for each business process. There was no need to involve an expensive consulting firm or to purchase an available BSC software package. Grounded in quality process principles, they felt they had enough knowledge and the spreadsheet skill to pull together a scorecard system. "The concept is quite simple. The difficulty is proper implementation."

They met with each of the business process managers to help them develop their scorecard. They explained the principles and demonstrated how they could use it as a tool to measure their process improvement efforts as well as the effectiveness of their strategic plans. Stressing the fact that this was not an official document, they eased the fears of yet another corporate measurement system. The scorecard was strictly an internal tool to generate information the managers could use to run their business. Tom saw the BSC as a rich set of data that the process owners would actively use on a day-to-day basis. There were no plans to develop reports for circulation outside GFS. The vice president of GFS, Danny Lanier, encouraged this effort. He believed in open communication and supported the concept of full disclosure. Sharing the progress on the achievement of the targeted measures during the monthly review meetings would help keep the GFS team focused.

The intent was to link the balanced scorecard to the operating budget with the target of achieving a 15% productivity improvement. Each process department was operating under the mandate to cut costs and show productivity improvement. In reality, with Lucent's 25% sustained annual growth rate, this did not mean job cuts but rather process improvements. Managers had to do more with fewer people. They had to find innovative ways to process the ever-increasing volume of accounting transactions. The old habit of just putting more people to the task would not work in the new Team CFO environment. The emphasis was on faster customer response time, reduced cycle times and improved customer and employee satisfaction. As shared services operators they wanted to be viewed by their Lucent customers as the best provider with the best price.

There was an additional dividend to using the balanced scorecard measurement system. Process owners were expanding their operations on a global basis, with regional hub operations in Asia, Europe and Latin America. They planned to use the same scorecard for each of these operations so management could have a real comparison and benchmark of productivity performance. Scorecards would provide a global measure of the total shared services performance.

To get the various metrics in a balanced format, Tom's group put together a conceptual illustration of what a balanced scorecard would look like, using the available information. They used the generic scorecard categories as suggested by Kaplan and Norton in their writings and seminars (Financial, Internal Business, Learning and Growth, and Business Partner). These seem to be inclusive and offered "boxes" to put measures in and a good way to start the organization of the measurements.

They set two conditions: first, the process had to be well documented and second, the management needed to be personally involved and committed to the project. They started with the value chain or flow of each process, ignoring department boundaries. This set the tone for a better understanding of the process flow itself. It was important that each scorecard have a link to the GFS objectives (conditions of satisfaction), which are defined by Lucent's strategic intent. Once the scorecard outline and form was agreed on, the business process teams determined the content, measures and measurements, of their scorecards.

They agreed on a two-dimensional score card (see Figure 1) based on the Lucent conditions of satisfaction and the specific GFS process. There was a clear blend of finance and operational measures,

and the frequency of the measures varied by the nature of the metric. Each process team was responsible for determining the appropriate measures and finding an efficient method to obtain the data. The team agreed to baseline the scorecard before they rolled it out as a management tool. It was important to have a solid starting point. Tom's group served as coach and facilitator, providing guidance and advice to the process owners.

Data for the scorecards was obtained from a variety of sources. The existing data from the various computer systems provided the budget and financial information. Other IT systems provided the various counts of the number of transactions or events that took place over a period of time. The emphasis was on data that was simple and easy to obtain. Other data such as customer and employee satisfaction information was obtained by creating a Web-based survey to capture the opinions of these two important stakeholders. The process managers were responsible for gathering the data and "normalizing" it for the scorecard. Tom's team served as consultants and coaches for the development of the scorecard data.

Part of the GFS initial quality effort, continued with the Team CFO program, was the focus on obtaining customer feedback. Most of the GFS customers, known as business partners, were internal Lucent individuals and departments that used the GFS services. They created a Lucent Web site and sought customer and GFS employee feedback. There were specific questions to be answered on a periodic basis, and there was always the opportunity for any individual to give immediate feedback through the Web-based data collection system. This data collection program was easily incorporated into the balanced scorecard data management system.

The GFS level scorecard in Figure 1 provided the key summary data for all of the processes. Each process owner could drill down further in each of the categories to see the process level scorecard. For example, as depicted in Figure 2, this contained more detailed information and served as an operational guide for the payroll process owner. The payroll process leaders still need to incorporate their specific objectives along with the appropriate metrics to complete their balanced scorecard template. A further drill down (see Figure 3) links to the process owners' (payroll) strategic plan and commitment to achievement. Finally, Figure 4 shows how the balanced scorecard was linked to the process value chain.

Tom's group worked very diligently with the process teams to make sure their measures linked to Lucent's strategic intent and conditions of satisfaction. To facilitate this process, the continuous improvement analysts developed a tool to ensure that the metrics were in alignment with the strategic objectives. They designed a form that illustrates the strategic objectives and their associated metrics. The basic principle behind this tool is that strategy must be cascaded down to metrics to ensure that the right metrics are being used. The initial effort found process managers selecting measures for each of the four catagories almost at random. They selected measures that they were good at or for which data was readily available. It took considerable coaching to get a reasonable set of measures that corresponded to the strategic intent and had meaning to the operation. Payroll is still working to find the appropriate measures.

Usage

The process managers, their direct reports and the VP of GFS review GFS and process scorecards once a month. This review includes a discussion of productivity and process improvement efforts. This is a supplemental reporting and review process, which is in addition to the monthly operational budget and performance review. The meetings have resulted in a very rich process discussion and often led to a request for more analysis of trends and the reasoning behind the numbers.

Most recently, Lucent has started a corporate financial services initiative to introduce a balanced measurement system throughout the organization. They are starting slowly with very loose headquarter guidelines. One of the benchmark examples for the organization is the progress GFS has

made in their scorecard efforts at Alpharetta, Georgia. It was very clear to corporate GFS that the balanced scorecard system was an excellent way to measure the performance and contribution of a shared services group. They felt that if they could show real progress in a BSC system their business partners would feel that the shared services center was making a real effort to deliver value.

Frustration

Tom and his team were frustrated with the fact that the balanced scorecard data is used principally to support the achievement of process improvement goals. The data can also support and supplement process efficiency claims. He felt the data works well when communicated upwards and external to GFS but has little effect as a management tool to help improve processes or motivate people. Wasn't this one of the key attributes of adopting a balanced measurement system? To further complicate matters, the GFS director and supporter of the balance scorecards recently retired. The new manager, Barry Kydd, came from outside Lucent, and Tom was very curious to meet with him to discuss this project and his frustration.

Another troubling issue was the concern over the measurements themselves. Tom wondered, "Are we measuring the right things? How can we determine if the measures are critical to the business process goals? Is there a better way to link the business process key success factors to their set of performance measures?"

Questions for Discussion

1. What are the strengths and weaknesses of the Financial Services LFS balanced scorecard plan?
2. What process changes would you recommend?
3. What should Tom tell his new boss about the balanced scorecard?
4. How should Tom relieve his frustration concerning the limited use of their balanced scorecard?

Figure 1. LFS Balanced Scorecard

REVISED DRAFT		**Hubs**					
		Financial Process				**Financial Reporting**	
Process **Condition of Satisfaction**	**LFS Overall**	**AP and T&E**	**AR and Billing**	**Cost Acctg.**	**Payroll**	**Book Close**	**Mgmt. Rptg.**
Business Solutions/ Partner Satisfaction - 100% of our business partners acknowledge that LFS provides business solutions. - Deliver real-time knowledge to optimize business performance. *(from Strategic Intent II)*	1) # of times you meet with a client to obtain feedback	1) % of invoices paid on time	1) Internal customer survey index – Overall rating		1) Paycheck resolution in 24 hours 2) Overall client satisfaction with the pay process	1) Internal Client survey index – Overall rating 2) # of days until flash OI is available	1) Reporting cycle time 2) Ad hoc request cycle time 3) % of expense $ defaulted to other or misc.
Operations, Processes and Quality - LFS is the recognized leader in Global Shared Services creating a competitive advantage for Lucent.		2) % of inv. paid electronically 3) % exp. vouchers processed electronically 4) # of FTEs using XMS software	2) Ship to invoice cycle time 3) % of invoices processed electronically 4) % payments processed electronically		3) % of active employees on EFT – ***Reach Award Best Practice***	3) % of LEs migrated to SAP 4) # of days to close the books – ***Reach Award metric*** 5) Value of unreconciled amts. 6) # of MJEs – ***Reach Award Best Practice*** 7) # of assessments	4) Timeliness of data in the warehouse 5) Consistency of data in the warehouse
Colleague Excellence - 100% of LFS Colleagues acknowledge that LFS is a talented and enthusiastic Global Workteam. - People together and individually accountable for a work force of high performance leaders. *(from Strategic Intent II)*	2) # of CFO awards won by LFS employees (e.g. Key Cup, Spot and Turbo Charge Awards) 3) Progress on winning Reach Awards 4) Employee satisfaction rate 5) Employee turnover rate		5) Employee satisfaction rate 6) Employee turnover rate		4) # of client recognition letters ("kudograms")	8) # of internal (to Lucent) applicants looking for positions in LFS 9) # of LFS employees up for transfers who opt to take another position within LFS	
Financial Performance *(not a condition of satisfaction)*		5) Cost/ invoice processed – ***Reach Award metric*** 6) Cost/ T&E voucher	7) % of unapplied cash 8) YTD results/Budget 9) Cost/ invoice processed - ***Reach Award metric*** 10) Cost/ payment processed - ***Reach Award metric*** 11) Cost/ Bank account reconciled		5) Process cost/ pay distribution – ***Reach Award metric*** 6) Support cost/ paycheck 7) Payroll cost/ employee paid	10) Closing cost/ revenue – ***Reach Award metric*** 11) Value of annualized cost reductions – ***Reach Award metric***	

Figure 2. LFS Strategic Objectives, Balanced Scorecard Process: Payroll

Critical Success Factors	Financial Perspective How should we appear to our Shareholders?	Internal Business Perspective What business processes must we excel at?	Learning and Growth Perspective How we sustain our ability to change and improve?
Strategic Intent II Conditions of Satisfaction	Finance experts providing business leadership throughout Lucent		People together and individually accountable for a work force of high performance leaders...setting the benchmark for GROWS
Conditions of Satisfaction By December 2000	**Technology** - LFS contributes $5M in revenue growth by being a technology showcase featuring Lucent's products and services	**Operations & Processes** -LFS is the recognized leader in Global Shared Services creating a competitive advantage for Lucent	**Workplace Equation...Formula for Success** -100% of LFS Colleagues acknowledge that LFS is a talented and enthusiastic Global Workteam thriving in a career enhancing values-based environment contributing to Lucent's Success
Process Leader Objectives			
Process Leader Strategy			
Metrics	Payroll Cost/Employee Paid	% of Active Colleagues on EFT # of Active Colleagues Paid per FTE	# of Colleague Recognition Letters Received
Process Initiatives			

1999 Commitment Statement from the Process Leader

Some of the metrics will be considered as candidates for the Reach Award.

Figure 3. Payroll Metrics

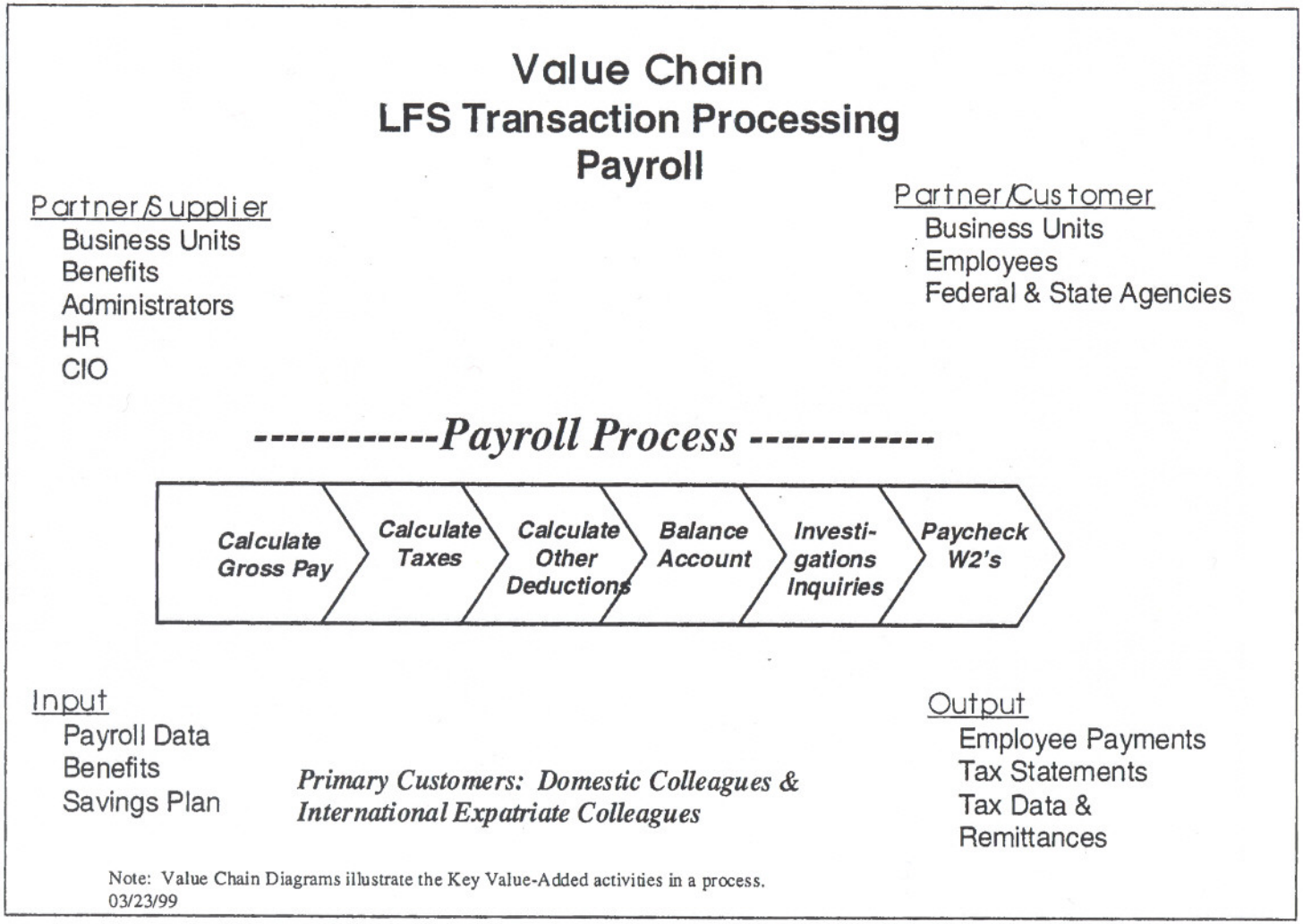
We will measure our progress using these metrics for Payroll...

Global Process

	Baseline	1998	1999	2000	Benchmark TopQ/BIC
Pay roll					
Manual Check Volume	120/10K	120/10K	100/10K	4/10K	7/10K/ 14/10K
% Error Free Payments	96%	98%	99%	100%	99%/100%
# of Employees Supported Per Payroll FTE	800	850	1200	1700	N/A/1700
Cost Per Employee Paid	$100	$100	$90	$ < 70	$74/NA
% Paperless Paystub	0%	10%	50%	100%	na/ 100%
EFT Usage	83%	85%	100%	100%	79%/100%

Note: Metrics are "directional"

Figure 4. Value Chain, LFS Transaction Processing: Payroll



Other Performance Management Resources

The American Productivity & Quality Center, www.apqc.org

The Foundation for Performance Measurement, www.fpm.com

Knowledge, Inc., www.knowledgeinc.com

Knowledge Management World, www.kmonline.com

Performance Management and Appraisal Site, http://performance-appraisal.8m.com

Project Management Institute, www.pmi.org

Case 3

The Coors Case

Balanced Scorecard

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Ken Richter, Product Quality Control Manager
Coors Brewing Company

By the end of 1997, Coors had finished the implementation of a three-year computer-integrated logistics (CIL) project to improve its supply chain management. Coors defined its supply chain as every activity involved in moving production from the supplier's supplier to the customer's customer. (Since by federal law, Coors cannot sell directly to consumers, Coors customers are its distributors whose customers are retailers whose customers are consumers.) Coors's supply chain included the following processes: purchasing, research and development, engineering, brewing, conditioning, fermenting, packaging, warehouse, logistics, and transportation.

This CIL project was a cross-functional initiative to reengineer the business processes by which Coors's logistics or supply chain was managed. This reengineering project improved supply chain processes and applied information technology to provide timely and accurate information to those involved in supply chain management. The project objective was to increase company profitability by reducing cycle times and operating costs and increasing customer (distributor) satisfaction.

The software vendor used for this project was the German company Systems Applications & Products (SAP), which provided the financial and materials planning software modules. The SAP planning software became Coors's load configurator software, which takes distributor demand forecasts and the production schedule and creates a shipping schedule for the following week. The following major supply chain problems were corrected by this CIL project:

- meeting seasonal demand,
- meeting demand surges from sales promotions,
- supporting the introduction of more than three new brands each year,
- filling routine customer (distributor) orders,
- filling rush orders,
- moving beer from production through warehouse to distributors before the beer spoiled. (The shelf lives for Coors products were 60 days for beer kegs and 112 days for all other beer packages.)

Matt Vail, head of Coors's Customer Service Department, had been the CIL project leader since the inception of the project. He had developed such expertise with supply chain management that he had just been hired by a supply chain consulting firm. In early 1998, on his last day of work for Coors, he was talking with Ken Rider, head of Coors Quality Assurance Department.

Ken had just been placed in charge of the new balanced scorecard (BSC) project at Coors. The initial motivation for this project was to assess whether the supply chain improvements were being maintained. However, the project was broadened to become a company-wide BSC. Accordingly, the project strategy was to implement a performance measurement process that: (1) focused on continuous improvement, (2) rewarded reasonable risk taking and learning to improve performance, and (3) enabled employees to understand the opportunity and reward for working productively.

Matt: The supply chain management project was really challenging and rewarding. I hate to leave Coors, but the consulting firm made me such an attractive offer that I could not refuse it. I hope you have such positive experiences with this follow-up balanced scorecard project.

Ken: This new project will be a real challenge. We need to build on all the improvements made by your supply chain project.

Matt: My project team was excited to see that our CEO discussed the supply chain project in his 1997 shareholder letter. He said that significant productivity gains in 1997 were due to our project, which streamlined purchasing, brewing, packaging, transportation, and administration of the supply chain.

Ken: Perhaps an economic value-added (EVA) analysis could be done to assess these supply chain productivity gains.

Matt: That's an interesting idea, to analyze performance in the financial quadrant of the balanced scorecard with EVA.

Ken: Another challenge for my project is how to translate the Coors vision statement and related business strategies into operational performance measures.

Matt: You also need to identify any gaps between the vision statement, business strategies, and current performance.

Ken: Do you have any experiences from your project that I could use?

Matt: Well, we did obtain some benchmarking data to develop targets for some performance measures for our supply chain project. I can give you these measures, but they are limited due to confidentiality problems in obtaining such data. Maybe Coors should join one of the commercial benchmarking databases.

Ken: Thanks. I am also aware of certain employee resistance to developing a new set of performance measures for this balanced scorecard approach.

Matt: We had similar employee resistance to changes in the business processes of the supply chain. We were able to use the following crisis motivation. At that time, Coors could not support all the new beer brand introductions proposed by our marketing people, due to the antiquated 1970s software that was then being used for our supply chain management. The marketing people wanted to introduce three new brands each quarter, and we could support only three new brands each year! We also learned that we needed to get more employee involvement in the project.

Ken: That's a good idea. In fact, I've already developed a list of the most frequently asked questions (FAQs) about the balanced scorecard from initial meetings with employees involved in the supply chain.

Matt: You have lots of challenges awaiting you. Good luck in your new project. Make sure that today's improvements in supply chain performance don't become tomorrow's problems!

Balanced Scorecard Background

The balanced scorecard is a set of financial and nonfinancial measures relating to the company's mission, strategies, and critical success factors. The balanced scorecard puts vision and strategy at the center of the management control system. Vision and strategy drive performance measures, as op-

posed to the traditional performance measurement systems that provided their own limited measures to management whether they were needed or not. The goal is to maintain an alignment of an organization's vision, strategy, programs, measurements, and rewards.

An innovative aspect is that the components of the scorecard are designed in an integrative manner to reinforce each other as indicators of both current and future prospects for the company. The balanced scorecard enables management to measure key drivers of overall performance, rather than focusing on short-term financial results. It helps management stay focused on the entire business process and helps ensure that actual current operating performance is in line with long-term strategy. Kaplan and Norton (1992) are generally given credit for creating the balanced scorecard in the early 1990s.

A recent survey found that 80% of large American companies want to change their performance measurement systems (Birchard 1995). Another recent survey found that 60% of Fortune 1,000 companies have or are experimenting with a balanced scorecard (Silk 1998). Such changes have been driven by the evolving focus on a team-based, process-oriented management control system.

The balanced scorecard has four perspectives or quadrants that generate performance measures to assess the progress of a company's vision and strategy, as follows:

- Customer perspective: how do customers see us?
- Internal business perspective: what must we excel at?
- Innovation and learning perspective: can we continue to improve and create value?
- Financial perspective: how do we look to shareholders?

The BSC is a set of discrete, linked measures that gives management a comprehensive and timely evaluation of performance. The BSC tries to minimize information overload by providing a limited number of measures that focus on key business processes by level of management. For example, top management needs summarized, comprehensive monetary measures while lower levels of management and employees may need both monetary and nonmonetary measures on a more frequent basis. Also, such measures need to track progress concerning the gap between a company's performance and benchmarked targets.

The BSC considers frequency of measurement, depending on the type of measure. Generally, nonmonetary measures are reported more frequently than monetary measures. For example, nonmonetary operating measures, such as machine downtime, percentage of capacity used, and deviations from schedule, may be measured daily. Other nonmonetary measures, such as manufacturing cycle time, delivery accuracy, customer complaints, and spoilage, may be measured weekly. Some nonmonetary and monetary measures, such as inventory days, accounts receivable days, product returns, and warranty costs, may be measured quarterly. Other nonmonetary and monetary measures, such as new products introduced, market share, total cost of poor quality, return on investment, and employee training, may be measured annually.

Company Background

Coors had been a family-owned and operated business from its inception in 1873 until 1993 when the first non-family member became president and chief operating officer. However, Coors family members still held the positions of chairman of the board of directors and chief executive officer and also held all voting stock. Only nonvoting, Class B common stock was publicly traded. Coors has been financed primarily by equity and has borrowed capital only twice in its corporate history. The first long-term debt, $220 million, 8.5% notes, was issued in 1991, and the final $40 million of principal was to be repaid by the end of 1999. The second long-term debt, $100 million, 7% unsecured notes, was issued in a 1995 private placement. Of this principal, $80 million is due in 2002 and the last $20 million is due in 2005.

In the mid-1970s Coors was a regional brewery with an 11-state market, selling one brand in a limited number of packages through approximately 200 distributors. Traditionally, Coors beer had been a non-pasteurized, premium beer. (However, with a recently developed sterilization process, its products now have the same shelf life as its competitors' pasteurized products.) The Coors plant in Golden, Colorado, was its only production facility, and it had no other distribution centers.

Over the next 25 years, Coors changed dramatically by expanding into all 50 states and various foreign markets. By the end of the 20th century, Coors had production facilities in Golden, Colorado, Memphis, Tennessee, Elkton, Virginia, and Zaragoza, Spain. It had expanded to using 21 "satellite redistribution centers" in the United States before the CIL project reduced this number to eight. Beer shipments were made by both truck and railroad cars. Coors had approximately 650 domestic beer distributors, although about 200 of them accounted for 80% of Coors's total sales. Coors also had several joint ventures and international distributors in Canada, the Caribbean, Latin American, Europe, and the Pacific.

Coors had 16 beer brands, including a specialty line, Blue Moon, that competed with the domestic micro brewing industry. However, Coors continued to focus on its four key premium brands: Coors Light, Original Coors, Killian's Irish Red, and Zima. Coors Light was the fourth largest selling beer in the United States. In packaging, Coors had to compete with the major competitors' value packaging, such as 12-packs and 30-packs. In 1959, Coors introduced the nation's first all-aluminum beverage can and in the late 1990s, it had introduced a baseball bat bottle and a football pigskin bottle. There were also numerous state labeling laws to meet, such as returnable information, and packaging graphics to reinforce the Rocky Mountains image for Coors beer.

Competition in the beer industry was strong, especially in the United States. Anheuser-Busch (A/B) was the market leader with approximately 44% of the U.S. market, 80 million barrels sold, $8 billion beer sales, and $1 billion net profit. Due to its size, A/B was the acknowledged price leader in the industry. A/B also had 13 domestic production plants, including one in Ft. Collins, Colorado, to achieve its customer service goal of having no major domestic distributor more than 500 miles away from one of its beer production plants.

Number two in this market was Miller, owned by Philip Morris, with approximately 22% market share, 40 million barrels sold, $4 billion beer sales, and $460 million net profit. Miller had seven domestic production plants. Coors was number three with an 11% market share, 20 million barrels sold, $2 billion beer sales, and $80 million net profit. Coors had three production plants in the United States. Its Colorado plant was the largest brewery in the world and served 70% of the U.S. market with its 10 can lines, six bottle lines, and two keg lines.

No other domestic brewers had market share in excess of 5%. In the late 1990s, there had been consolidation of the larger companies in the domestic beer industry. The most recent example was Stroh Brewing Company (SBC) with about 5% market share. SBC had signed agreements to sell its major brands to Miller and the remaining brands to Pabst Brewing Company. SBC would then exit the beer industry by 2000.

From 1983 through 1998, Coors was the only major U.S. brewer to increase its sales volume each year, although industry sales had grown only about 1% per year in the 1990s. Coors had outpaced the industry volume growth rate by one or two percentage points each year. Coors had accomplished this growth by building its key premium brands in key markets and strengthening its distributor network, recently with improved supply chain management.

Coors's Vision Statement and Business Strategies

Coors's vision statement was as follows:

> Our company has a proud history of visionary leadership, quality products and dedicated people which has enabled us to succeed in a highly competitive and regulated industry. We must con-

> tinue to build on this foundation and become even more effective by aligning and uniting the human, financial and physical aspects of our company to bring great tasting beer, great brands and superior service to our distributors, retailers and consumers and to be a valued neighbor in our communities. Our continued success will require teamwork and an even stronger dedication by every person in our organization to a common purpose, our Vision. Achieving our Vision requires that we begin this journey immediately and with urgency for it will require significant change for us to thrive and win in our industry.

Using this vision statement, top management had decided to focus on four fundamentals: improving quality, improving service, boosting profitability, and developing employee skills. In the 1997 Coors annual report, both the CEO and the president discussed the following general business strategies or "six planks" to drive these fundamentals in the future:

1. Baseline growth: we will profitably grow key brands and key markets.
2. Incremental growth: we will invest selectively to grow high potential markets, channels, demographics, and brands.
3. Product quality: we will continuously elevate consumer perceived quality by improving taste, freshness, package integrity, and package appearance at point of purchase.
4. Distributor service: we will significantly enhance distributor service as measured by improved freshness, less damage, increased on-time arrivals, and accurate order fill at a lower cost to Coors.
5. Productivity gains: we will continuously lower total company costs per barrel so Coors can balance improved profitability, investments to grow volume, market share and revenues, and funding for the resources needed to drive long-term productivity and success.
6. People: we will continuously improve our business performance through engaging and developing our people.

The operations and technology (O&T) department of Coors was in charge of the supply chain management and had developed its own vision to elaborate the overall Coors vision statement as follows:

> We are partners with our internal business stakeholders, with our suppliers and with our communities. With our partners, we have developed an aligned and integrated supply chain that delivers our commitments and meets the requirements that delight our distributors, retailers, and consumers, establishing our company as the supplier of choice. The processes required to design, safely produce, and deliver great tasting beer at its freshest, with superior packaging integrity, competitive cost, are well-defined, understood, consistently followed, and continually improved by every person in our organization. The quality and innovation we employ in all we do encourage beer drinkers to seek out our brands and make Coors the envy of our competition. Our use of current, accurate information, and appropriate technology enables all individuals in our organization to monitor and control their work, be flexible and move with speed. We value learning and exercise a tenacious approach to eliminate waste and reduce cost. We realize that in a competitive world, we must bring value to our brands and continually aspire to a higher level of performance to compete successfully.

The O&T department had also adopted and extended the following supply chain guiding principles from the work of the CIL supply chain project team to create its own business strategies:

- Simplify and stabilize the process.
- Eliminate non-value-added time and waste.

- Relentlessly pursue continuous improvement.
- Inventory is a liability, not an asset.
- People doing the work are critical to lasting improvement.
- Short cycle time + reliability = flexibility.
- Find and fix the root cause.
- Know your costs.
- Know your customers' expectations.
- Make decisions where work is performed.
- Balance and optimize the overall process.
- What gets measured gets done.

Benchmarking and Performance Gaps

Only limited benchmarking information was available since Coors had not yet decided to join any of the commercial benchmarking databases. (The largest one in the United States, the Hackett Group Study, sponsored by the American Institute of CPAs, has about 700 participating companies.) Performance gaps with Coors's two major competitors were noted by the following financial information obtained from annual reports:

Table 1. Benchmarking Analysis

Beer Industry Competitor	Manufacturing Cost per Barrel	S,G & A Cost per Barrel	Net Profit
Anheuser-Busch	$48.00	$27.50	$12.50
Miller	$50.00	$27.00	$11.00
Coors	$55.00	$29.00	$4.00

There were insignificant differences in price per barrel as A/B was the industry price leader and the other competitors closely followed A/B's pricing decisions. A/B had this pricing power because its domestic market share of 44% was twice that of Miller and four times that of Coors.

The major motivation for the CIL supply chain project came from the deficiencies in the supply chain performance. The CIL project had become fully operational by the end of 1997, but more time was needed to realize the full benefits of such a project. There was still a significant amount of volatility in the production process that contributed to the Colorado redistribution center's being the largest bottleneck in the supply chain. For example, Coors often could not meet its goal to load beer product directly off the production line into waiting railroad cars.

Thus, Ken's project team had already added three new nonmonetary performance measures and created challenging performance targets for these measures to track anticipated additional efficiencies from the CIL project. Also, top management had created financial goals for key monetary performance measures in an attempt to become more competitive. These key performance measures are shown in Table 2.

The gaps in current performance at the end of 1997 indicated problems with Coors's traditional, cost-based performance measures. For example, direct labor variances were becoming less important due to the highly automated nature of the beer production lines. Also, current performance measures were fragmented and inconsistent between plants, unclear, not linking the separate business processes to the organization goals, not balanced to prevent overemphasis in one area

Table 2. Key Performance Measures

Performance Measure	CIL Project Pre	CIL Project Post	Performance Target	Performance Gap
Nonmonetary:				
Load schedule (1)	30%	60%	100%	40%
Load item accuracy (2)	90%	95%	100%	5%
Production stability (3)	25%	50%	100%	50%
Monetary (per barrel):				
Manufacturing cost	$56	$55	$53	$2
S, G & A cost	$30	$29	$27	$2
Net profit	$ 3	$ 4	$ 6	$2

Notes (these nonmonetary performance targets are based on weekly schedules generated by the supply chain software):

(1) Truck or rail car loaded on time: within two hours of scheduled lead time,

(2) Commitments to distributors: exact product and exact quality,

(3) Production of scheduled product and quantity: at planned time.

at the expense of another, not able to be acted on at all levels, and used to punish rather than reward continuous improvement.

Balanced Scorecard and Change Management Issues

Ken was thinking that he could develop a crisis motivation for his balanced scorecard project, similar to the strategy used by Matt for his CIL project. Ken knew that Coors's traditional, cost-based performance measures were not driving desired results, as indicated by the various performance gaps. From the vision statement and business strategy analysis, he thought that long-term sustainability and improvement in performance could be achieved by linking the balanced scorecard to the annual strategic planning process. He also thought that continuous improvement required clearly defined, aligned business process and activity measures that support a balanced scorecard.

Ken had already had preliminary meetings about this BSC project with employees who were involved in supply chain management. He had developed a list of frequently asked questions (FAQs). He thought that these FAQs might help guide him in implementing a balanced scorecard for Coors. These key FAQs are listed as follows:

1. Will the balanced scorecard be linked to any incentive plans?
2. What if a measure does not drive the correct behavior after implementation? What process will be used to evolve the scorecard? How will my input be heard?
3. Won't the measures reduce our ability to be flexible with our distributors and make last-minute changes for them?
4. Why is the window on the load schedule performance measure so tight? What difference does it make if we get a load out within plus/minus two hours? If we get it out the day it is scheduled, won't the load arrive at the distributor as planned?
5. We already have plant measures that are working. Why would we want to change them?

6. The production stability measure does not give the production lines incentive to run ahead. Doesn't it make sense to allow us to run ahead on major brands as a cushion for those times when we have problems? So what should we do when we are more than an hour ahead, shut the line down?
7. Why would you base production stability, load schedule performance, and load item accuracy on the initial weekly schedule? The schedule changes constantly. Why measure me against a weekly schedule that has changed as a result of something I had no control over?
8. Will the balanced scorecard be used to compare the performance of the three U.S. plants? Since each plant is different, how can we be expected to use the same scorecard?
9. Product mix can adversely affect the cost per barrel. Will this be taken into consideration in this measure?
10. Some important measures may be excluded from the scorecard. If so, will they eventually be added to the scorecard?
11. Will there be a throughput measure on the scorecard? I cannot affect the number of barrels coming through my plant. That is determined by sales and scheduling that shifts production between plants.
12. How can you hold me responsible for a measure when I am not the only one who can affect it?
13. How often will the scorecard be updated?
14. Will the scorecard be used as a club?
15. Who will put together this scorecard?

Balanced Scorecard Project: Additional Thoughts

Ken was wondering whether he should do an EVA analysis to demonstrate its potential for a BSC financial performance measure. Coors's net operating profit before income taxes had increased from $75 million in 1996 to $105 million in 1997. According to both the CEO's shareholder letter and a value line analysis, the major reason for this increase was the productivity improvement from the supply chain management project, which cost $20 million. This $30 million improvement in net operating profit before income taxes was also predicted to become a permanent improvement for both 1998 and 1999 operations.

Ken's project team had compiled the following five annual adjustments (all increases) and other financial information just in case Ken decided to do an EVA analysis.

Table 3. EVA Adjustments

Adjustments (in millions)	Capital	Income
1. Advertising costs (three-year life)	$ 900	$300
2. LIFO reserve	45	3
3. Deferred income tax liability	65	10
4. Capitalization of operating leases	30	5
5. Net interest expense	0	12

At the end of 1997, Coors had total stockholder equity of $730 million and total liabilities of $670 million. Total liabilities included $170 million of interest-bearing debt as well as current liabilities, deferred income taxes, and pension liabilities. Coors's weighted average cost of capital was 10%.

Ken was curious about what gaps might exist between vision statements and current business strategies for both Coors and the O&T department. However, he did not want this gap analysis to wind up overloading the BSC with too many performance measures. He was also concerned about what performance targets and reporting frequencies to establish for various BSC performance measures. Other challenges were how to link BSC performance measures and how to gain employee acceptance of the BSC.

Ken realized that he had some serious challenges ahead of him in order to create and implement a balanced scorecard for Coors. It was now January 1998 and top management was pressing for a quick installation of the balanced scorecard in order to use it for evaluating performance in 1998.

Questions for Discussion

1. Link the Coors vision statement to Coors's key business strategies or "six planks." Are there any gaps?
2. Link the Coors Operation and Technology (O&T) department vision statement to the O&T strategies or "supply chain guiding principles." Are there any gaps?
3. Provide possible explanations for the performance gaps identified by Coors benchmarking analysis.
4. Answer the frequently asked question (FAQs) already raised by employees about the Coors BSC project.
5. Considering the prior gap and benchmarking analyses, design specific performance measures with benchmarked targets (where feasible) and reporting frequency to create an operational and acceptable BSC for Coors.
6. Perform an economic value-added (EVA) analysis to assess its potential as a BSC financial performance measure for Coors.

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Case 4

BG Bank
Creating a Performance-Driven Culture

Leif Sjöblom

This case was prepared by Professor Sjöblom as a basis for class discussion rather than to illustrate either effective or ineffective handling of a business situation.

> We have made tremendous progress over the last three years. In 1996, our market share increased from 14.4% to 15.5%. Yet our position is not sustainable unless we continue to make quantum leap improvements in customer satisfaction and profitability. We need to convince the market that we can perform, and we are targeting a 35% bottom line improvement within two years.
>
> Torkel Olrik, executive vice president, September 1997

Torkel Olrik reflected: when he had joined the Danish BG Bank in early 1995, it was in turmoil, but since then, the bank had made significant progress on every measure of performance Olrik could imagine. In 1995, BG had lost 60,000 customers, but the preliminary figures for 1997 predicted a net increase. Still, the bank was only number three in an already over-banked market in which competition was getting tougher and tougher. Olrik thought about his latest initiative: boost retail branch profitability by 35% in two years. The concept was very simple. The bank could achieve significant cost savings by increased rationalization and reductions in the workforce. But instead of doing that, BG planned to give employees an opportunity to boost profit through other means: for example, by increasing revenues. By changing the way the bank operated and by unleashing resources that had previously been spent on administration, BG's employees would get an opportunity to concentrate on creating customer value. In September 1997, the pilot project had been launched in six branches, and it had been met with great enthusiasm. Still, Olrik knew that harvesting the fruits of this new initiative was going to require significant effort and creativity, as well as good management systems.

The Danish Retail Financial Services Industry

Banking in Denmark, as in most European countries, was a conservative industry. Most of the business was reactive, that is to say, initiated by the customer. Customers typically had long-standing relationships with their branches. Many Danes felt intimidated discussing personal financial issues with outsiders; this made them less likely to shop around for alternative services. Banks were also not accepted as selling organizations. A customer who received a hard sell when applying for a loan was likely to switch to another bank. This public sentiment was also reflected in the laws: for example, banks were not allowed to make unsolicited telephone calls to sell banking products (telephone sales were common practice for insurance products). Banks that stepped outside the bounds of what customers considered "acceptable banking practices" often found themselves written up in the tabloid press, their public image tarnished.

Banks were the traditional players in the Danish financial services market. Den Danske Bank and Unibank dominated Danish banking; the two had captured more than 50% of the market. The next two national banks, BG Bank and Jyske Bank, were considerably smaller. The remainder of the market consisted of small local banks and niche players such as telephone banks (see Exhibit 1 for a comparison of the major players). Generally, the large banks were getting larger. However, some new entrants, notably Lån&Spar, had achieved rapid growth through innovative positioning and skillful use of media that communicated their "fixed price, limited service" concept.

Outside the banking sector, competition came from insurance companies, which provided attractive alternatives to traditional bank products such as savings instruments. The banks had responded to the competition either by carrying their own insurance products or by forming alliances with the insurance companies.

Mortgage credit institutions formed the third group of players in the market. These companies, which typically financed up to 80% of real estate purchases, had traditionally been subcontractors to the banks.[1] They had excellent relationships with homeowners—a key customer segment—and they were eagerly waiting for an opportunity to get a larger share of the financial services market.

Up until 1996, Girobank, a national payment transfer service operated by the Danish Post, had been a fourth player. However, in February 1996, Girobank had merged with Bikuben Savings Bank to form BG Bank. Denmark did not have the national full-service "postbank" system that was common in many other European countries.

Increased competition in the industry was putting strong downward pressure on interest rates. The traditional bank loan was rapidly becoming a commodity, and the banks were keen to find new services that would generate additional fee-based income. At the same time, financial service products were increasingly purchased outside the banking sector, linked, for example, with branded consumer products. However, there were signs of even harder times just around the corner. Customer loyalty was decreasing, particularly among young, well-educated people. Customers were becoming increasingly price sensitive. New entrants such as "low cost no frills" telephone banks were vying for a share of the market. In the customers' minds, none of the banks had a clear position or differentiated image—all were perceived as safe and secure but not very exciting.

BG Bank

In 1995, BG Bank had faced a "change or die" situation. It had suffered massive credit losses. To reduce its cost base, it had undergone a major restructuring. The bank cut its headcount from 7,000 in 1994 to 5,800 in 1996 (see Exhibit 2). In 1995, when Olrik arrived, customers were defecting at the rate of 60,000 per year. To reverse this exodus, BG Bank needed to decide how it wanted to work with customers—the customer value proposition—and how to improve the internal processes. Olrik immediately realized that he had to focus on business development and disciplined business thinking, instead of mere cost cutting.

Twenty-three percent of the population (1.3 million Danes) had an account with BG Bank. Fifteen percent of the population considered BG Bank their primary bank. A large network of 269 branches served them. To provide complementary products, BG had entered into partnership agreements with Topdanmark, the third largest insurance company, and Nykredit, the largest mortgage credit institution.[2] In addition, a partnership had been initiated with the national postal service that would

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[1] Mortgage credit institutions provided long-term (up to 30 years) fixed or variable interest rate loans and issued bonds with similar maturity to finance them. Because of certain tax incentives, the cost of funds was lower than for the banks.

[2] The intention was to merge with Nykredit. When the merger did not go through, in autumn 1997, the partnership was broken. BG Bank then entered into a similar partnership with Realkredit, the second-largest mortgage credit institution.

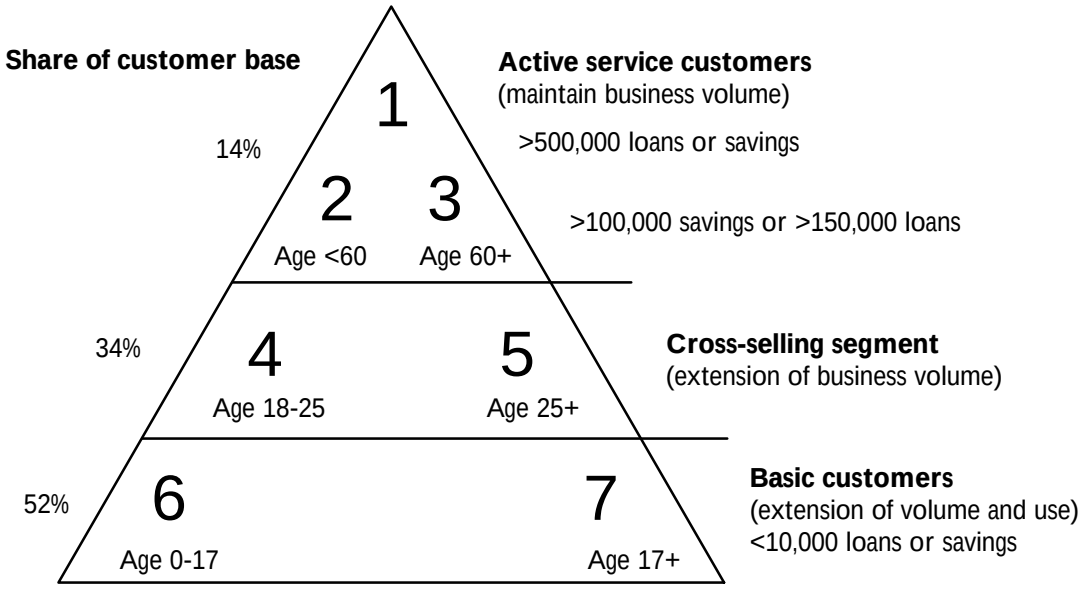
eventually make BG Bank products available in 1,256 post offices. (See Exhibit 2 for a description of BG Bank's retail strategy and financial performance.)

Retail Banking Strategy and Customer Segmentation

Prior to 1995, BG Bank's approach to customer service had been very product driven. Regardless of the balance of the customer's accounts, bank employees provided a standard, undifferentiated service. Although different customers contributed differently to the bottom line, BG Bank had no systematic way of identifying its most profitable customers. One of the key obstacles to improving profitability was changing the mindset of both the employees and the customers.

As part of the early change initiative, the bank introduced a marketing concept that focused on the most profitable customers. The concept included a segmentation model designed to promote customer profitability thinking (see Figure 1). BG's model assigned customers to one of seven segments, according to how they used the bank. For the most important accounts, segments 1 to 3, BG appointed a named account relationship manager. For segments 4 and 5, which had significant development potential, the top objective was cross-selling of additional services. The so-called "basic customers" (segments 6 and 7) received lower priority.

Figure 1: Customer Segmentation Model



The BG salespeople had received the segmentation model well. However, because the model was based on the existing use of bank services, many salespeople felt it could be significantly improved.

Matching Distribution to Profit Potential

A central element of the cost structure and hence, customer profitability, was the service distribution system. On one end of the spectrum were the "telephone banks" that did not have a physical branch and were able to provide cut-throat pricing on standard services. At the other extreme were banks such as BG that had an extensive system of branches with high fixed costs. For those institutions, it was necessary to leverage off the customer relationship and focus on a full range of value-adding services.

Although the basic customers were the largest segment, they were the least profitable customers.[3] They accounted for a disproportionately high share of transactions but a low share of the interest and fee income. To improve profitability, the different distribution channels had to be matched with the profit potential of the customer segment. (See Exhibit 3 for additional data on the cost structure and usage of different channels.)

To extend its distribution network, BG Bank was negotiating with Post Denmark to use its 1,256 post offices. By locating banking and postal services in the same premises, BG could achieve cost savings of 5%-20%. On the downside, however, postal employees were civil servants, and customers associated the postal service with long queues and poor customer service.

The Change Program and the Measurement System

> If you have a clear strategy, and a common measurement system, you can just lean back and let the business take care of itself. We measure a lot, and we rank all the important things. We are very open about who performs and who does not. The measurement system creates the discipline. And it is accepted by now—it is simply the way of life.
>
> Torkel Olrik, September 1997

A driving force behind the BG turnaround was the measurement system Olrik put in place. The system had three pillars: growth, profitability, and customer satisfaction. The bank systematically reported the rank of each branch on these measures. The system further included 360° feedback sessions that provided managers with a tool to measure and improve their leadership skills. As one senior manager put it: "The measurement system provides focus and discipline. I have stopped going to internal meetings or responding to memos unless the purpose passes the acid test: to increase profitability, sales, or customer satisfaction."

Sales Growth

"Sales growth is absolutely essential," argued Olrik. "If you don't grow, you lose focus. People need to have an ambition, and without growth, we cannot attract the best people. The growth target is 35%. Five percent is not good enough in our business. Everyone can achieve 5%, but very few people can grow by 35%."

BG Bank reported sales results for its major product lines on a 10-day, monthly and quarterly basis. It also reported on branch rankings and acknowledged the best. (See Exhibit 6 for sample performance reports.)

Profitability

While sales growth was paramount, it also had to be profitable. The main global measure of profitability was the profit index (revenues over cost), but other measures such as revenues per employee (broken down by product line) filled out the picture.

The bank's current internal reporting system could measure only product and branch profitability. Customer profitability was measured only crudely: customer income minus interest expenses and direct transaction costs. Although the bank could allocate several other cost items to the customer, many BG managers felt that such designations would create more internal arguments than consensus. In their minds, providing value for the customer was more important than arguing about internal cost allocations.

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[3] Attempts at costing these customers using activity analysis showed that BG Bank actually lost money on these customers (see Exhibit 3).

The Customer Satisfaction System

Initiated to understand better what customers expected, the "customer satisfaction system" had grown into a comprehensive measurement system. Third-party surveys such as the AIM Nielsen Monitor covered 24,000 people annually and provided external benchmarks against the other banks (see Exhibit 1). Two major internal surveys of existing customers (one in 1995, the other in 1996) had provided annual customer satisfaction indexes for individual branches. In addition, BG had surveyed customers each time they received advisory services or switched to another bank.

BG Bank had developed its survey instrument for internal customer satisfaction together with an outside company, ScanTest. The first step had been qualitative focus group studies. These studies defined 26 critical service aspects in retail banking, with four service levels for each. One of the most important findings was that prices and interest rates were not the most critical aspect of service. This was not surprising, since all the major banks provided similar service at similar prices. The most critical service aspect was the personal responsiveness and helpfulness of the salesperson.

A follow-up quantitative survey established the relative importance (indexed) of the different service aspects.[4] The key "satisfiers" and "dissatisfiers" of retail bank customers were:

Largest satisfiers (increasing the service level increases the satisfaction)	Index
1. Quality of advice	+2
2. Discreetness about my financial situation	+14
3. No change in advisor	+12
4. Who discovers errors done by the bank	+ 9
5. Competence and knowledge of advisor	+ 8
21. Waiting time when visiting a branch	+ 2

Largest dissatisfiers (decreasing the service level decreases the satisfaction)	Index
1. Quality of advice	-37
2. Competence and knowledge of advisor	-28
3. Discreetness about my financial situation	-20
4. No change in advisor	-19
5. Advisor's ability to speak a language I understand	-18
21. Waiting time when visiting a branch	-4

Source: BG Bank.

Following this initial study, BG Bank conducted large-scale surveys of more than 80,000 customers in 1995 and 1996. These surveys provided benchmarks on the key dimensions of service quality for each branch. Based on the surveys, the bank targeted five areas for improvement. These areas related to the interaction between the salesperson (advisor) and the customer (see Exhibit 4 for details).

Measuring Management Leadership Quality

Before 1995, career progress in BG Bank had followed a traditional path. In the past, promotions had been based on product expertise and seniority. The bank viewed branch managers primarily as "bankers." Customer relationships and leadership issues were secondary qualities. In 1995, however, because of poor past performance, the organization lacked self-confidence. Success would

[4] These were also analyzed by geographic region and age profile. The difference between sub-segments was relatively small.

depend on the bank's ability to energize the salespeople and mobilize motivation, ideas, and initiative at the grass roots level.

The first step was to define and describe the value system, particularly what constituted "good leadership" at BG Bank. Fifteen key categories of leadership were defined (see Exhibit 5). Once employees accepted these definitions, a measurement system would provide feedback to management. The 360° feedback system[5]—whereby managers evaluated themselves and were evaluated by both their boss and subordinates—was linked to the annual review and management development process. The key objectives of the process were:

- to link BG Bank's strategy to the leadership style;
- to create a constructive dialogue about performance targets, implementation plans, and personal development;
- to ensure the follow-up and evaluation of agreed targets.

The process met with surprisingly little resistance. Increased awareness and open dialogue closed many of the identified gaps. Nevertheless, based on the survey, BG Bank identified several management development priorities (see Exhibit 5).

Management at the Branch Level

> A bank branch today is a sales organization. Customer loyalty is linked to how well they [customers] trust the salesperson, and word of mouth is essential in getting new customers. Yet it is very hard to create loyalty when our best customers don't even come here. Seventy to seventy-five percent of the walk-in customers are low-profit customers.
>
> Branch manager, BG Bank, September 1997

One of BG Bank's most successful branches was the Mermaid.[6] It was a medium-sized branch located in a shopping mall just outside of Copenhagen. The manager, Mr. Jensen, attributed Mermaid's consistently high performance to three factors: responsibility, teamwork, and strong leadership.

> Our people are given a sales budget, and then it is up to them to perform. They want responsibility, and we provide it. Our job is to motivate them and coach them when they need it. They organize themselves into teams to facilitate cross-selling and to speed up the decision-making process. For example, we can make a loan decision the same day that a customer visits the branch. For our competitors, this takes several weeks.
>
> Still, the manager must be able to walk the talk. If we are behind in, say, car loans, it is up to the manager to set the example personally and to sell more—if you can't do it yourself, the salespeople don't trust you.

Good service creates switching costs for the customer. The customer satisfaction ranking tracked how well a branch was performing on service delivery. Yet these figures must be interpreted with caution. One of the drivers of customer satisfaction was the personal relationship between the salesperson and the customer. However, many of Mermaid's account managers had been promoted to higher positions in other branches. Although this had an immediate negative impact on customer satisfaction, career opportunities inside the bank were critical for the motivation of the salespeople.

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[5] These surveys were anonymous and developed by an outside company, Kjaer & Kjerulf. (See Exhibit 5 for sample questions and analysis.)

[6] The name of the branch and the manager are disguised.

The Mermaid branch received frequent scorecards that ranked its performance in terms of sales growth and profitability. In addition, the branch manager set detailed weekly goals—sales by product line and number of customer meetings—for each salesperson. These sales targets were individual, based on each person's potential. The salespeople received a fixed salary,[7] with only a small reward (such as a free dinner) for outstanding performance. The performance of the best salesperson was publicly recognized. Weaker performers were not identified publicly, but they received coaching and sales training at the discretion of the branch manager. Jensen commented: "This is the way to get higher performance. Five years ago, this kind of feedback received very negative reactions. Today, it is part of normal life. However, it has to be motivating—if the salespeople don't like it, you have a problem."

The Future

In September 1997, Olrik reviewed the performance of the branches (see Exhibit 6, Part D). BG Bank still had a long way to go to optimize the segmentation and distribution strategies. The results of the 1997 customer satisfaction survey, which were not yet available, would indicate how much work needed to be done. However, Olrik's immediate concern was the successful launch of the new initiative to boost profitability by 35%. He had chosen six branches for the pilot project.

The contract was the following: BG Bank could achieve the profit target by top-down cost cutting and rationalization. For example, a branch with 10 employees might be downsized to seven employees, which would result in an annual cost saving of 1 million Danish kroner (approximately $145,000 U.S.). Instead of just downsizing, the branches were given two years to achieve the same profit improvement themselves, through rationalization, increased sales, or a combination of the two. The bank would provide financial support for upgrading the branch offices (for example, buying new furniture). Back office work would be removed to free up time for customer service and revenue generation.

Olrik knew that the bank could leverage a lot of its hidden talent. The average BG Bank office spent only 26% of the available time selling and advising customers (European best practice was 40%). The hit rate was also below the average (see Table 1). The target was to increase the number of meetings with customers by 10-20 per day and per branch. In addition, internal consultants would work with the branches in defining and implementing best customer service practices.

Table 1: Hit Rate Index for Sales to Customers (products sold/sales meeting)

European average	1 (this is an index)
BG top 10 %	1.2
BG average	0.86
BG lowest 10 %	0

Source: BG Bank.

[7] So far, the trade unions had strongly resisted performance-based compensation.

Exhibit 1. Benchmarks on Danish Banks

	BG Bank	Den Danske Bank	Unibank	Jyske Bank
Totals (1996)				
Net profit (million DKr)	1,405	3,653	2,025	645
Total assets (billion DKr)	166.3	451.7	327.4	59.3
Total equity (billion DKr)	8.17	25.9	16.4	4.43
Profitability index (revenues/cost)	1.39	1.59	1.59	1.72
Key ratios per employee				
Interest bearing assets	20,930	31,183	23,832	17,703
Deposits	12,539	14,643	12,570	13,706
Average staff costs	329	340	360	329
Avg. other admin costs	181	79	93	108
Income	924	848	890	945
Key ratios per branch				
Interest bearing assets	496,788	832,500	600,847	381,971
Deposits	297,607	390,935	316,926	295,725
Average staff costs	7,816	9,071	9,072	7,108
Avg. other admin costs	4,304	2,118	2,339	2,320
Income	21,92	4 22,640	22,436	20,386

Source: Henrik Hansen, BG Bank.

Customer satisfaction/loyalty benchmarks:

	BG Bank	Den Danske Bank	Unibank	Jyske Bank	Lån&Spar	Average
Market share: (avg. 1996)						
Total	23.0%	28.2%	28.9%	6.6%	2.5%	
Primary customers	15.0%	22.9%	22.9%	4.5%	1.4%	
Customer satisfaction:						
Very satisfied	27.8%	27.4%	25.5%	48.0%		31.4%
Satisfied	44.1%	50.1%	48.0%	37.3%		48.0%
Neutral	16.9%	13.5%	18.3%	8.6%		12.7%
Not satisfied	6.4%	6.1%	4.8%	2.8%		4.4%
Very unsatisfied	1.9%	1.6%	1.8%	1.2%		1.6%
Don't know	2.8%	1.3%	1.7%	2.1%		2.0%
% of customers leaving	7.5%	5.2%	5.0%	6.4%	5.1%	6.0%
Customers who changed bank went to:	13.1%	16.0%	16.2%	6.9%	4.3%	
Customers who did not change bank would go to (**if** they switched):	6.5%	11.0%	9.6%	6.6%	11.9%	

Source: AIM Nielsen, Market Monitor, Q1/1996.

	Nov '94	Dec '96
Did you change bank because other banks		
- offer higher interest rates	18.5%	20.0%
- offer better service	25.6%	35.0%
- both	18.8%	2.7%
- offer higher reliability		7.1%
- other reasons	37.1%	35.0%
Would you change bank if other banks		
- offered higher interest rates	14.5%	35.0%
- offered better service	28.1%	20.4%
- both	20.8%	17.9%
- offered higher reliability		3.2%
- other reasons	20.7%	17.5%

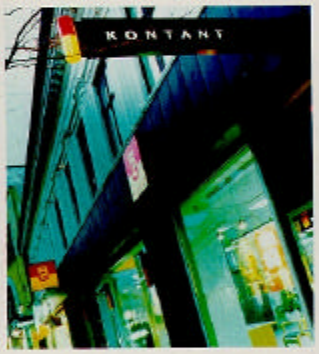
Source: H. Hansen, Borsen December 1996.

Note: 1 Danish kroner (DKr) is approximately USD 0.14.

Source: BG Bank.

Exhibit 2. BG Bank

Retail customers and segmentation



Objectives and strategy

BG Bank wishes to be the primary banker for all the bank's many retail customers by offering a complete range of competitive financial products and services. Growth in the volume of business is thus primarily to be achieved by extending our cooperation with existing customers.

BG Bank will endeavour to strengthen its competence within three core areas, where the bank has a leading market position: home financing, long-term savings and payment transfers.

The customers' wishes and needs for advisory services and banking transactions are fulfilled via a multi-string distribution network. The outlets comprise bank branches, post offices, telephone services and PC bank as well as financing offers through retailers.

BG Bank focuses on customer satisfaction. Every part of the organisation works determinedly to improve customer satisfaction with the bank.

Customers

In general terms, BG Bank seeks to expand its business with three target customer groups. The first group comprises the bank's account holders who constitute almost one fourth of the Danish population. The second group comprises the customers of the alliance partners, and finally, the third group comprises customers who use banking services at post offices, including the payment of bills.

Account holders

The broad customer base consists both of customers who use the bank actively, and customers with more limited use of the bank. BG Bank has segmented the private account holders according to their present volume of business and their age with the purpose of targeting efforts to meet the wishes and needs of the individual customer and to continue expanding the customer relationship.

Growth in the volume of banking business is achieved through an expansion of our cooperation with customers who at present only use the bank to a limited extent. This means that the bank focuses on selling actual banking products to those customers who today only use BG Bank for payment transfers.

Customers of the alliance partners

BG Bank's alliance with Nykredit and Topdanmark creates considerable potential for additional sales and establishment of new customer relationships. More than half of the Danish population is a customer of one of the three partners while only a few are customers of all three.

The local cooperation between the regional offices and estate agent chains of Nykredit and BG Bank's branches is being extended with a view to creating additional business for the partners.

In 1996, the cooperation with Topdanmark has enabled BG Bank's branches to offer a competitive range of general insurance products.

Post office customers

More than half of the Danish population visits the post office at least once a month. BG Bank thus has unique access to and possibilities of marketing itself towards a very large number of people many of whom are not already customers of BG Bank.

A very considerable number of in and outgoing payments are effected to and from BG Bank in Denmark's 1,256 post offices, of which the payment of bills accounts for by far the major part.

With the purpose of strengthening the sale of BG Bank's products and services through the post offices, a reference agreement has been con-

Exhibit 2. BG Bank (continued)

cluded with Post Danmark. In addition, actual bank branches have been established in 14 post offices which offer advice in line with the bank's own branches.

The Customer Project

It is a primary task for BG Bank to maintain the existing, large customer base, and secondary priority is given to expanding that base with new, profitable customers. An important precondition is constant focus on customer satisfaction.

In 1996, a set of values for good customer services were laid down. They describe how every employee of the bank can contribute to making customers experience BG Bank as a modern, well-qualified and competitive bank. Together with the other activities of the Customer Project, this contributes to maintaining a high level of activities in the branches regarding customer satisfaction.

In line with this, a second survey on customer satisfaction was carried out in 1996 throughout the branch network. In comparison to the 1995 poll, the degree of satisfaction had increased in several areas. Thus, a larger part of the customers were generally more satisfied with their branch.

The survey also revealed that customers who have received advisory services are markedly more satisfied than customers who have not. BG Bank's efforts to improve customer satisfaction will therefore even more than previously focus on advisory services and personal contact between the customer and the bank.

Products

BG Bank offers retail customers a complete range of banking services enabling the bank to match the customer's facilities to his/her individual needs.

BG Bank considers it important to be able to meet the customers' wishes and needs throughout their lives in the form of both savings schemes and loans and credits as well as the handling of daily payments.

In addition, the offers for mortgage credit and insurance from the cooperation partners Nykredit and Topdanmark contribute to BG Bank's being able to cover any need the customer may have for financial services.

The bank focuses on 3 core areas, in which the bank has special expertise, and which are being continuously expanded. These core areas comprise:

- Home financing
- Savings, pension and investment
- Payment transfers

Home financing

BG Bank has many years of expertise within advisory services and financing of housing transactions. BG Bank's Home Financing creates a good decision basis for the customers' purchase of owner-occupied housing. Such advisory services deal not only with the financial situation, but also with the choice of loan type, which is fairly complicated as a result of applicable tax rules.

Customers are offered a package solution with mortgage credit, insurance and BG Bank loan which is not only a loan for the purchase of the home but also for the many new purchases which often accompany the buying of a new home.

BG Bank's home financing services are not limited to advisory services in connection with the purchase and sale of real estate. The bank also assesses the home owners' options in order to take advantage of remortgaging or the raising of new loans.

Exhibit 2. BG Bank (continued)

Savings, Pension and Investment
BG Bank has a solid position in terms of advice regarding savings, pension and investment. In the pension and life insurance area, customers are offered individually tailored solutions. In 1996, Topdanmark Livsforsikringsaktieselskab (Topdanmark life insurance company) acquired 50 per cent of BG Pension, and the two companies have established joint management, administration and head office with a view to improving the efficiency of production.

In the autumn, BG Bank expanded its activities in the investment area by introducing a new concept: Investment Service. This concept is offered to all customers who together with the bank wish to lay down an individual investment strategy. Moreover, BG Bank has developed a special senior concept which comprises advisory services in relation to the long-term consequences of retirement for the customer's financial situation.

Payment transfers
BG Bank holds a dominant position in the payment transfer area, which forms a solid basis for the sale of other financial services. BG Giro continues to be one of the most simple and accessible ways in the market for customers to handle payments. At the same time, the system is inexpensive due to the cost-effective, central production facilities of the bank. In accordance with customer wishes, the bank currently adjusts the services offered within electronic payment transfer solutions.

Distribution

Retail Banking manages and serves the branch network and handles the cooperation with the bank's cooperation partners. Moreover, Retail Banking is responsible for fixing targets, product development and marketing.

The direct, customer-oriented activities are primarily decentralised or undertaken by Regional Centre BG.

Branch network
BG Bank has one of Denmark's largest and most visible distribution networks, which in addition to BG Bank's 269 bank branches comprises all of the country's post offices.

Moreover, at end-1996, 14 bank branches had been established in post offices which gives access to a more cost-effective distribution of the bank's products and increased accessibility for our customers. The number of bank branches in post offices will continue to increase, based on the concrete experiences gained in connection with the already established bank branches.

To an increasing extent, BG Bank centralises the administrative and production-related tasks previously carried out by the bank branches. This results in economies of scale at the same time as resources are freed in the branches for customer-oriented activities such as advisory services and sales.

Thus, at the end of 1996, the bank's central sales and service functions in the retail area were gathered in one regional centre called Regional Centre BG comprising i.a. BG Direkte (BG Direct) and BG Biler (BG Cars) and BG Detail (BG Retail).

BG Direkte and self-service
In parallel with the adjustment of the branch network, BG Bank is intensifying the extension of self-service solutions such as PC bank at home and banking by mail as well as the telephone-based personal service.

Exhibit 2. BG Bank (continued)

This is done in recognition of the fact that customers have different requirements and needs for services which BG Bank aims to fulfil. Thus, all of BG Bank's telephone banking services are concentrated in the entity BG Direkte, including the former telephone bank Netbank. BG Direkte offers advisory services, sale and other services to all of the bank's customers - also outside normal branch opening hours. Moreover, the organisational changes entail a broader service concept towards the customers of the former Netbank by giving access to the branch network.

BG Home Banking is offered to customers who wish to service themselves. At the end of 1996, the system had just under 20,000 users, making it one of the most widespread home banking systems in the sector.

BG Biler and BG Detail

Through BG Biler and BG Detail, Regional Centre BG arranges consumption financing via car dealers, retailers and account chains. This form of financing provides businesses with the possibility of granting consumer credits quickly and easily in order to supplement the bank's standard loan types.

Sales channels	
Bank branches	283
of which are located in post offices	14
Post offices	1,256
Telephone services	BG Direkte
Self-service	BG Home Banking and banking by mail
Consumer loans	BG Biler and BG Detail

Business volume

Average deposits from private customers amounted to DKK 44.4bn in 1996, corresponding to an increase of DKK 3.3bn in comparison with 1995.

This development should be seen in the light of increasing willingness and ability to save among consumers. Savings in pension schemes and other savings accounts thus grew more than deposits on transaction accounts.

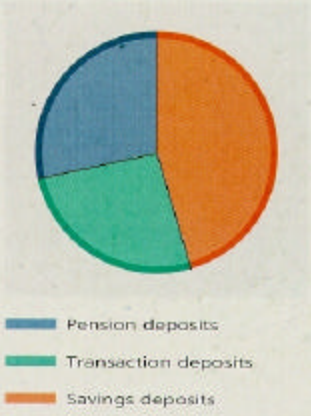
Just under half the retail deposits are in savings accounts. The remaining part is almost equally distributed between transaction accounts and pension savings.

In terms of safe custody accounts, BG Bank has a strong position and extensive expertise. The area comprises custody accounts with settled property and free funds, and both domestic and foreign institutional and retail customers are offered custody accounts combined with administrative and investment-related services.

Average lending to retail customers amounted to DKK 21.8bn in 1996. In comparison with 1995, this represents an increase of DKK 1.8bn.

Growth has to a large extent centered on loans for specific purposes such as purchases and improvement of homes and purchases of cars and boats. Loans for specific purposes account for more than 60 per cent of total loans to retail customers.

Retail deposits



Retail loans and advances

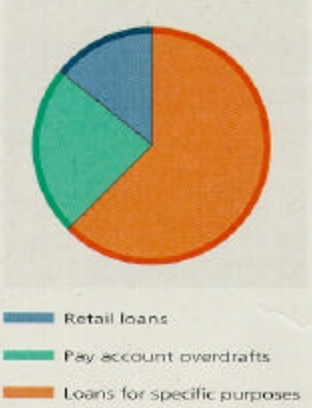
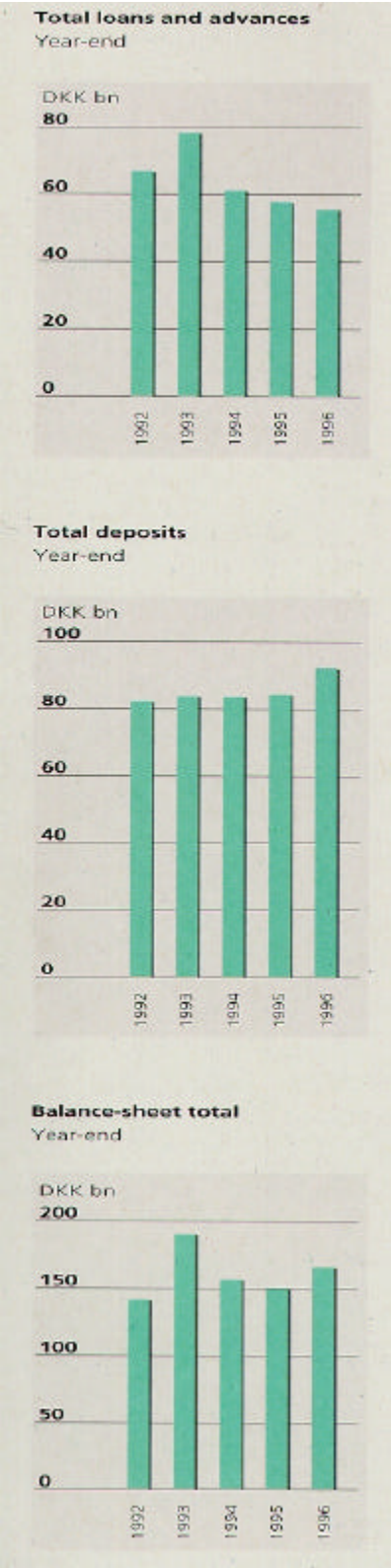
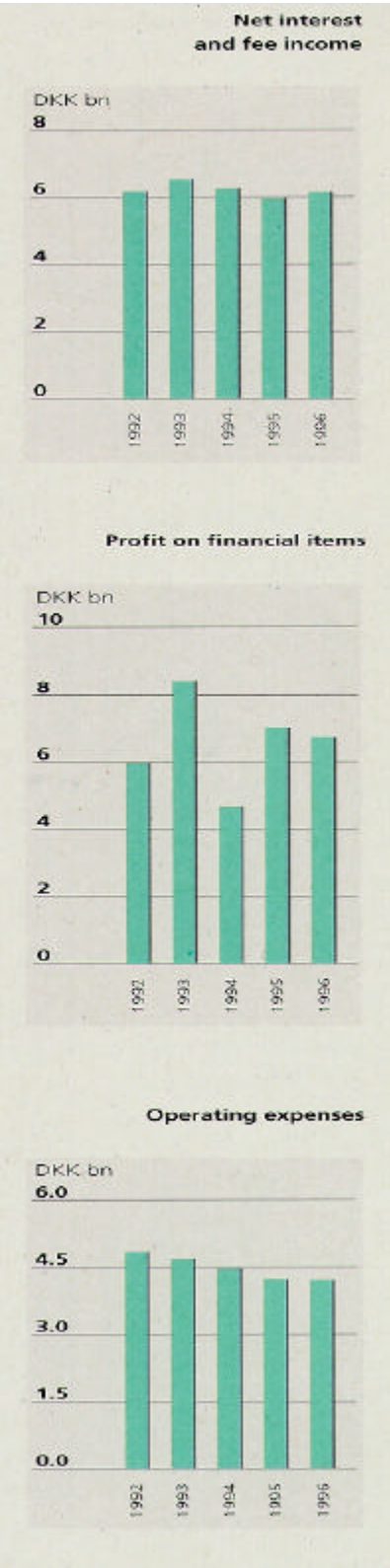
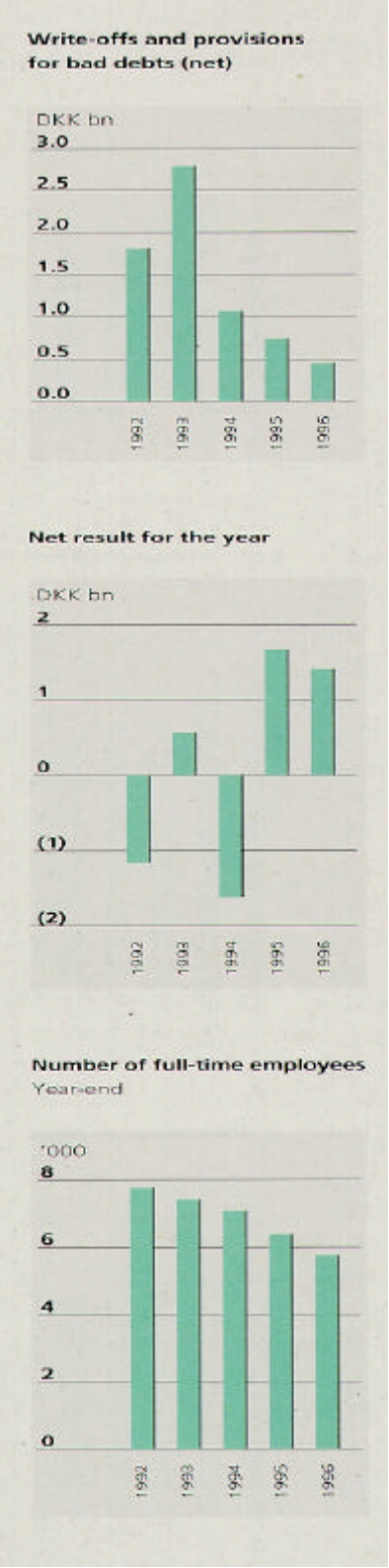


Exhibit 2. BG Bank (continued)

Financial Performance







Source: BG Bank 1996 Annual Report.

Exhibit 3. Distribution Channel Economics

Distribution channel economics	Personal contacts: branches or calls to branches	Direct channels: PC, telebanking, ATM	Number of personal contacts/account balance (index)	Profitability index*
Low-profit segments:				
Basis	75%	25%	1.5	-20
Mass market (medium income)	53%	47%		-5
Retired	72%	28%	0.9	30
High-profit segments:				
Young single, high income	32%	68%	0.2	185
Families, high income	48%	52%	0.4	95

70 % of all customers used several distribution channels; 29 % of customers used only personal visits to branches.

* based on one-time activity based analysis

Average cost of transactions:	Index
Cash withdrawal transactions:	
ATM machine	1
personal face-to-face	8
Payments:	
ATM machine	1.2
mail	6
personal face-to-face	11

Source: BG Bank.

Exhibit 4. Customer Satisfaction Measurement and Reporting

Survey

Two large-scale surveys were conducted (1995 and 1996). An average of 325 active customers per branch were surveyed. More than 100 responses per branch were received. The responses are on a scale from 1 to 4, where 3 is considered acceptable and 4 is very good. Ten service aspects were evaluated:

1. Cash (deposit/withdrawal and payments) services, e.g., waiting time.
2. Telephone service.
3. Personal service, e.g., friendliness of service and interaction.
4. Advisory service, primarily the professionalism and quality of the advice.
5. Loans and loan applications, e.g., professionalism and response time.
6. General information, e.g., mailings from the bank.
7. Interest rate and fee information.
8. Complaint handling. Eighty percent of customers had experienced an error in the last 12 months (versus 6% for the best branch).
9. Satisfaction with partners such as Nykredit (mortgages), Topdanmark (insurance), and the postal service. Roughly 1/4 of the customers were also customers of Nykredit and/or Topdanmark. Twenty-five percent were regular users of post banking services.
10. Overall satisfaction. Sixty-six percent of the customers would recommend BG Bank to their friends and family, while 9% would not.

Exhibit 4. Customer Satisfaction Measurement and Reporting (continued)

Reporting System

The quartile rating of each branch on the 10 key aspects of customer satisfaction was distributed to all branches. In addition, each branch received a detailed report that benchmarked the branch (both from the customers' perspective and the employees' self-assessment) against the best branch and the BG Bank average.

Customer Satisfaction Report

Branch	Cash/payment services	Phone service	Personal service	Advise	Lending and loan applications	General information	Interest and fee information	Complaint handling	Overall score	Total customer satisfaction	Rank in area	Rank in BG Bank
A	1	1	1	1	1	1	1	1	1	1	1	8
B	2	3	2	2	2	3	3	2	2	2	12	147
C												
D												
etc.												
Y	3	3	3	3	3	3	3	2	3	3	10	188
Z	4	3	4	4	4	4	3	4	4	4	39	242

Note: The scores 1-4 refer to the quartile within BG Bank, not to the absolute score on the customers satisfaction survey. 1=top 25 %, 2= 25-50 %, etc.
This report is distributed to all branches.
The individual branches receive moredetailed feedback about their own performance

Sample items from branch customer satisfaction survey:

		Very Unsatisfied/ Strongly Disagree	Not Satisfied/ Disagree	Satisfied/ Agree	Very Satisfied/ Strongly Agree	Rank in BG Bank		Quartile	
		1.00	2.00	3.00	4.00	nov. 95	aug. 96	nov. 95	aug. 96
Table 3.2.1	Self assessment	3.0							
The waiting time to receive service is acceptable?	Own branch	3.0				200	238	3	3
	Best branch	3.7							
	Trend since last measurement	+ -0.1 -		BG average: 3.2					

Exhibit 4. Customer Satisfaction Measurement and Reporting (continued)

3.5 Advisory service

Table 3.5.1

Have you received advisory service within the last 12 months?

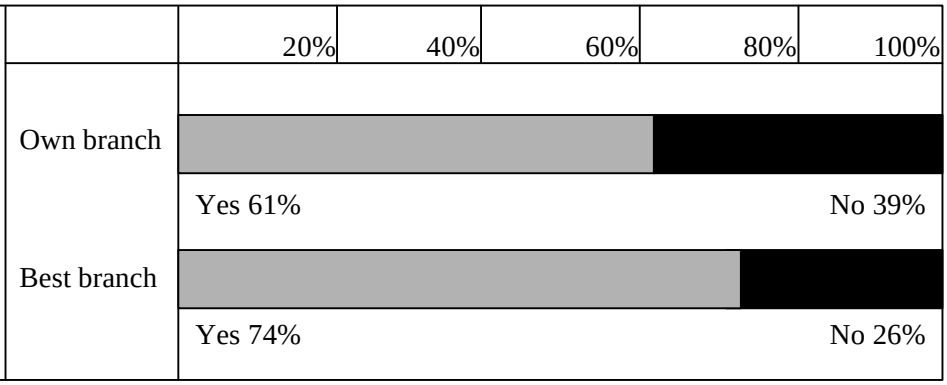


Table 3.5.2

Did you have an appointment for the meeting where you received this service?

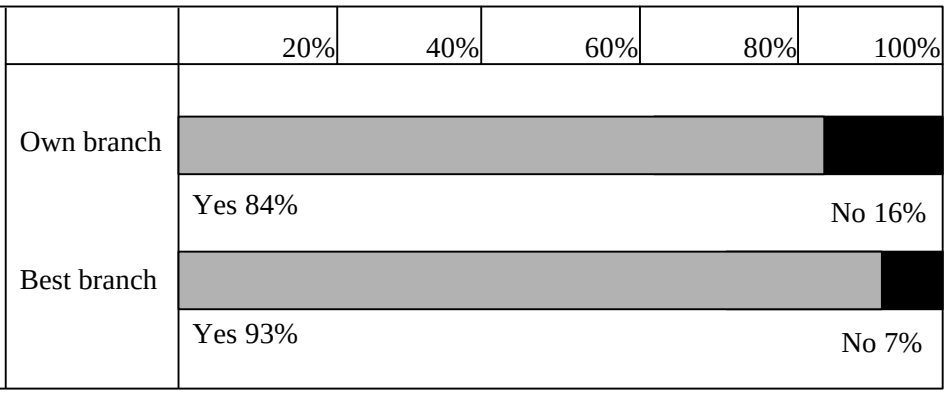


Table 3.5.3

If the meeting was scheduled in advance, was the advisor well prepared?

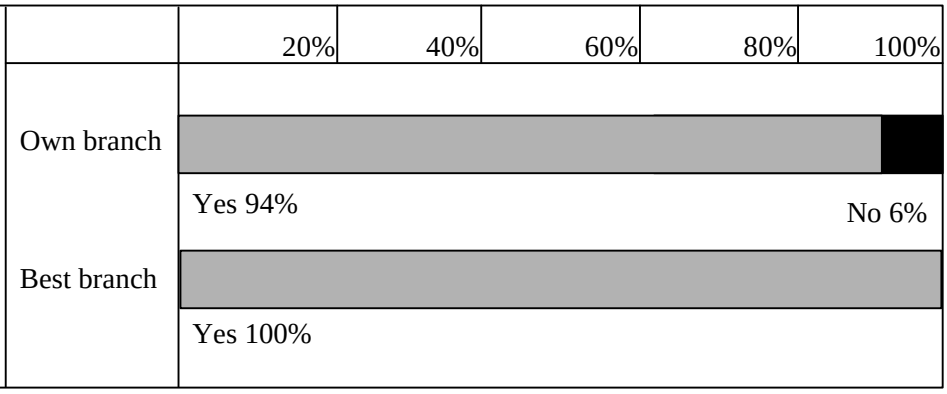


Table 3.5.4

Did you receive information about other BG Bank products during the meeting?

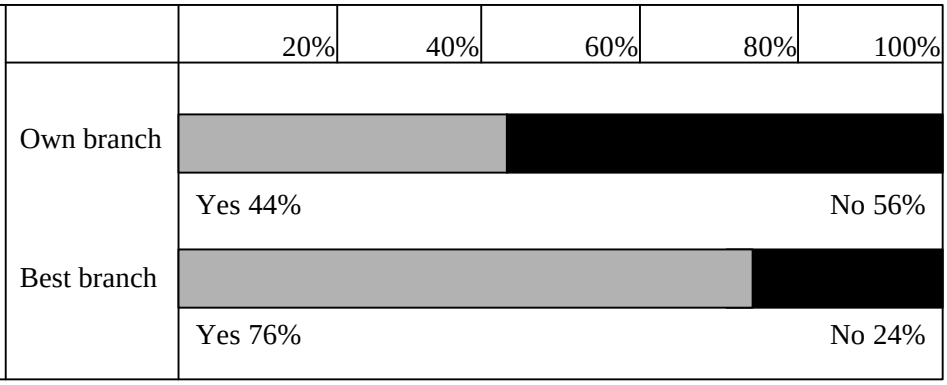
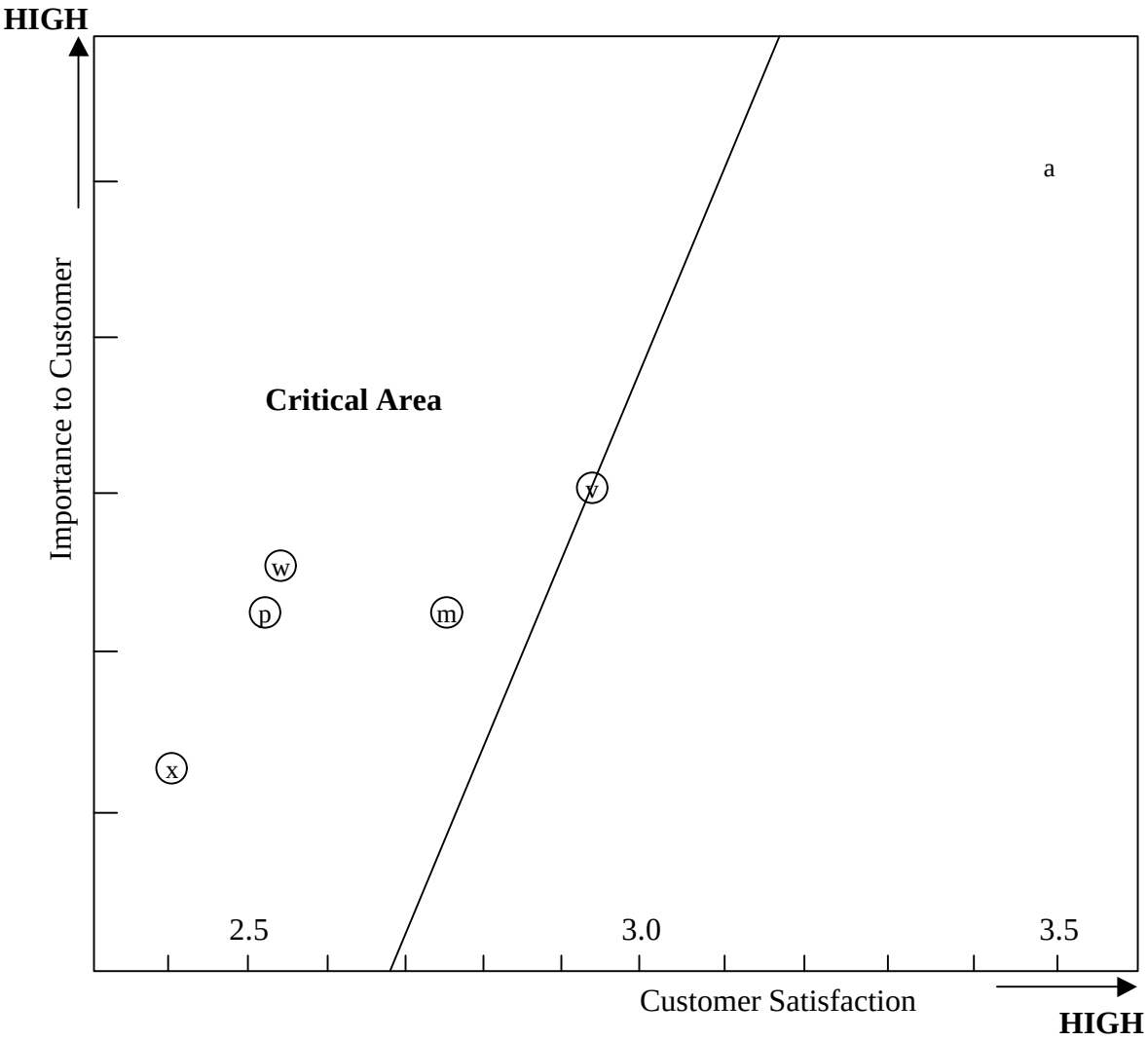


Exhibit 4. Customer Satisfaction Measurement and Reporting (continued)

Analysis

Based on this survey, BG Bank identified both strengths and weaknesses. For example, BG received a very high score for "The personnel is friendly and helpful," an item that was very important to many customers (question (a) in the figure below). However, customers assigned a relatively high importance and a relatively low satisfaction score in five areas. These were targeted for improvement.



The priorities and the different service levels associated with each score were:

Question x: If my advisor leaves the branch, I am informed and given the name of my new advisor:

1. I am not informed that my advisor leaves, and I am not informed about my new advisor.
2. I am informed that my advisor leaves, but I am not informed about my new advisor.
3. I am informed that my advisor leaves, and I get the name of my new advisor.
4. I am informed that my advisor leaves, and I get an invitation to meet my new advisor.

Exhibit 4. Customer Satisfaction Measurement and Reporting (continued)

Question w: I am contacted by my advisor with proposals that are beneficial to me.

1. I am only contacted when it is to the bank's advantage (e.g., if I owe them something).
2. I have to be proactive if I need anything.
3. I am contacted every now and then and asked if I need anything.
4. I am contacted by the adviser with specific proposals that are of interest to me.

Question p: There is a transparent relationship between prices (interest or fee) and services provided by BG Bank.

1. I don't receive any pricing information.
2. I receive a general price list of the bank's services, but it is up to me to make the pricing transparent.
3. I receive a general price list and an explanation of the important changes.
4. I receive specific information about important changes and advice about the best and cheapest service I can receive.

Question m: If I am contacted (by letter) by BG Bank, is the proposal of interest to me?

1. Not at all interesting.
2. Generally not interesting.
3. Somewhat interesting.
4. Very interesting.

Question v: My advisor is making good proposals for new services that I might need.

1. My advisor is trying too hard to sell me services I don't need.
2. My advisor incidentally mentions new products that the bank carries.
3. My advisor is proactive and proposes new services that might be interesting to me.
4. My advisor listens to my needs and actively proposes new services that are of interest to me.

Source: BG Bank.

Exhibit 5. Leadership Quality Measurements

Each manager was rated on 15 dimensions (102 questions) on a scale 1 (lowest) to 6 (highest). In addition, all respondents rated the importance of this specific question. The ratings were done by subordinates (only average scores reported), by the manager (how do you think your subordinates perceive you on these dimensions?), and by the boss (top-down).

Management leadership and sample questions	% over/under benchmark (BG Bank total)*	Sample report for manager Y**			
		Average BG Bank	Average (own subordinates)	Self evalution***	Top down
1. Customer and business orientation	0.0%				
Example: X actions reflect that we need to make money **both** short term and long term		4.89	4.83	6	4
2. Initiative and determination	-2.4%				
Example: X is good at resolving conflicts		3.95	4.5	4	4
3. Analysis	-3.7%				
Example: X continually evaluates whether resources are used profitably		4.18	4.83	6	5
4. Planning	-9.0%				
Example: X is good at organizing the work of the branch		4.12	4.5	5	5
5. Communication	-2.4%				
Example: X can communicate clear goals for the unit		4.59	4.83	4	5
6. Development	-8.1%				
Example: X is good at initiating change processes that add value to the branch		4.12	5	5	5
7. Team Orientation	-0.2%				
Example: X is good at receiving constructive feedback		4.15	4	3	4
8. Quality	-0.4%				
Example: X demands that errors be prevented		4.69	3.83	4	4
9. Awareness of responsibility	6.8%				
Example: X is ethical and responsible in dealing with customers		5.07	4.67	4	4
10. The big picture	4.6%				
Example: X works cross-functionally and respects others responsibilities		4.64	4.33	3	3
11. Decisionmaking	2.4%				
Example: X makes decisions based on sound analysis		4.69	4.17	4	4
12. Relationships with other people	3.7%				
Example: X listens actively to others		4.71	4.33	3	4
13. Multiple objectives	1.5%				
Example: X can handle many tasks simultaneously		4.5	4.83	4	5
14. Professional competence	11.4%				
Example: X knows BG Banks products and services		4.85	4.83	6	5
15. People skills	-3.1%				
Example: X understands his role and responsibility in developing people		4.45	4.67	4	5

* % deviation from global average score on all questions. This highlights important development areas for BG Bank as a whole

** Note that a total of 102 questions were reported (this is only a sample)

*** The manager was asked to predict how he thought he was perceived by his subordinates

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Exhibit 6. Sample Performance Reports (Disguised)

Note: These reports are provided in addition to traditional income statements and balance sheets.

A. Sales Performance by Product

Sales Performance	Sales Year to Date	Budget	% of Budget	% of Budget (BG Bank)	Sales/Full Time Employee	Sales/Full Time Employee (BG Bank)	Rank in BG (% of Budget)	Rank in BG (Sales/Employee)
Mortgages	153486	190000	80.8	86.7	1109	1265	13	13
Car loans	124282	170000	73.1	67.5	898	767	9	5
Consumer loans								
Pension savings								
Insurance (type A)								
etc.								
Payment cards issued	5009	10000	50.1	60.5	36	33	15	9
etc.								

Key indicators		Per Full Time Employee	Per Full Time Employee (BG Bank)	Rank in BG Bank
Interest income	57059	412	412	76
Fee income	21106	153	176	99
Number of customers (segment 1-5)	27703	200	203	84
Deposits and loans	3331614	24079	26365	112

Exhibit 6. Sample Performance Reports (continued)

B. High-Level Key Indicators

	Balance	Annual Growth (%)	Annual Growth BG Bank(%)	Rank in BG Bank
Loans	1114394	7.1	8.3	12
Product 1	611369	14.9	8.2	3
Product 2	1076389	3.1	4.1	11
Product 3	602692	14.2	12.6	4
Deposits	2290450	8.9	7.8	6
Product 1	12886	21.3	24.7	8
Product 2	(4701)	77.2	37.5	6
Product 3	191783	105.3	71.2	3
Product 4	402	79.5	37.4	3
Product 5	6457	40.2	28.5	2
Product 6	46940	6.3	6	7

Rankings	Sales/ Employee	Interest Income/ Employee	Fee Income/ Employee	Customers/ Employee	Loans and Deposits/ Employee	Total Rank in May	Total Rank in April
Branch ABC	86	76	99	84	112	98	106

Exhibit 6. Sample Performance Reports (continued)

D. Key Benchmarks on 30 Largest Branches (September 1997)

Branch	Rank based on contribution in Danish kroner	Rank based on profitability index	Rank based on number of customers	Rank of net increase in customers	Rank of sales	Rank of market share	Rank of customer satisfaction (October 1996)	Other measures	Overall position in BG Bank (based on several measures)
AA	1	9	28	209	1	182	249		173
BB	2	44	1	211	2	111	205		112
CC	3	14	3	204	4	132	198		105
DD	4	50	4	217	15	106	241		150
EE	5	39	16	67	3	137	247		50
FF	6	46	24	197	13	159	240		162
GG	7	86	2	164	14	104	152		57
HH	8	25	13	218	6	179	188		130
II	9	119	11	174	8	199	59		100
JJ	10	18	7	212	12	168	212		101
KK	11	188	17	205	10	80	196		148
LL	12	263	5	216	11	56	132		157
MM	13	7	18	215	28	108	169		88
NN	14	132	8	213	33	48	186		121
OO	15	248	10	218	7	49	103		74
PP	16	255	6	166	9	105	222		164
QQ	17	29	73	37	53	220	193		81
RR	18	125	12	208	5	62	181		60
SS	19	5	29	212	62	133	223		152
TT	20	166	32	49	32	91	179		43
UU	21	6	37	3	22	123	239		7
VV	22	34	66	81	82	69	82		16
WW	23	205	23	209	31	154	170		201
XX	24	15	27	194	75	89	175		82
YY	25	251	42	22	29	147	84		30
ZZ	26	10	25	204	72	119	224		140
ABC	27	87	39	189	25	14	153		34
DEF	28	11	90	126	26	40	119		5
GHI	29	74	14	175	50	192	245		167
KLM	30	145	50	200	51	92	131		149

Mermaid	58	8	57	32	86	45	157		6

Source: BG Bank.

Case 5

Using Activity-Based Management in a Medical Practice
Fannon and Martens Cardiac and Thoracic Surgery Medical Group: Building the ABC Model

Gary Siegel, DePaul University
Nancy Mangold, California State University at Hayward
Gail Kaciuba, DePaul University

I. Introduction

The medical profession is facing tough times. Over the past few years, Medicare has been reducing its reimbursements to physicians for the work they perform. As Medicare reimbursements drop, HMOs and private insurance companies follow suit and decrease their payments to physicians. At the same time, physicians' costs continue to rise due to inflation and the availability of higher technology treatments for patients. Given this undesirable situation of rising costs and declining revenues, strategic cost management (SCM) becomes critical; indeed, SCM is the only way for a medical practice to remain profitable. According to health care financial executives surveyed in 1997 by Arthur Andersen, cost control is the most important issue facing the health care industry.

This is the first in a series of cases that explore the use of ABC and ABM in medical practices. The challenge in this case is to design an activity-based costing model for a medical practice.

Background

Over the past two decades there have been rapid and major transformations in the health care industry. For medical practices, the once dominant fee-for-service model, where physicians billed patients or insurance companies for work performed, has given way to a system of "managed care" where a third party stands between the physician and patient.

In the fee-for-service environment, physicians could simply raise their fees to pass along cost increases. With a relatively inelastic demand for physician services, there was no compelling reason to focus on cost control and there was no need for physicians to use cost accounting systems.

Managed care organizations buy medical services from physicians and bill patients and insurance companies for the work that physicians perform. In a managed care environment, physicians cannot pass along cost increases because they enter into contracts to provide medical services for a fixed fee. In this environment, with many sellers of medical services and few buyers (HMOs and other large health plans that represent thousands of patients in a community), physicians occupy a weak negotiating position. Various state and federal laws prohibit physicians from joining together in unions or other entities to increase their bargaining power. Consequently, physicians have little choice but to accept contracts to provide services at fees that are set by the seller. Further, because they lack cost accounting systems, many physicians enter into contract negotiations with no knowledge of their costs. They know exactly how much money they spend to run their practice, but they do not know what it costs to see a patient in the office or to perform a surgical procedure. A 1998 survey of physicians revealed a shared perception that they are working longer hours and earning less money than they did in the recent past.

In 1992, the Health Care Financing Administration (HCFA), the government agency that administers the Medicare program, developed the Resource Based Relative Value Scale (RBRVS). The RBRVS is an index that assigns weights to medical services. The weights, called relative value units (RVUs), represent the relative amount that Medicare will pay for each medical service. Complex medical procedures are assigned more RVUs than less complex procedures. The reimbursement system, formally known as the Medicare Fee Schedule, divides the total payment for medical treatments into three components: physician time, malpractice insurance, and practice expense. Practice expenses are all the expenses incurred in running the practice, except for malpractice insurance and physician compensation. The practice expense component accounts for about 40% of the total payment to physicians.

In 1996, HCFA reduced the number of RVUs assigned to many surgical procedures and increased the RVUs for office-based procedures. Thus, surgeons, to a greater extent than other physicians (e.g., family practitioners, podiatrists, etc.), experienced decreases in revenue. Surgical specialties were faced with reimbursement reductions of 20%-40% for the services they delivered. The surgical specialties that provide service to larger proportions of Medicare patients were more adversely affected by the new reimbursement rates. But most surgeons were concerned about the reductions because of the likelihood that other payers would base their reimbursement rates on the new Medicare rates.

In light of these changes in the economic environment, several surgical specialty associations wanted to obtain accurate information about the costs of running a medical practice. These associations have been very active in trying to change HCFA's computation of the practice expense component of the Medicare reimbursement so that the payment to physicians is more equitable. There is a very good summary of practice expense RVU issues on the Society of Thoracic Surgeons' Web page at http://www.sts.org/doc/3799.

The Society of Thoracic Surgeons (STS) wants to present actual cost data to HCFA. STS has been informed that activity-based costing (ABC) can accurately measure the amount of practice expense consumed by medical services and has asked you to build an ABC model for a typical thoracic surgery practice.

II. Fannon and Martens Cardiac and Thoracic Surgery Medical Group

Thoracic Surgery in General

Thoracic surgeons treat diseases involving organs of the chest. They replace and repair the valves in the heart, perform bypass surgery for coronary artery disease, treat cancers of the lung and esophagus, correct birth defects of the chest and heart, treat tumors of the chest, and perform heart and lung transplants. Cardiac surgery (a type of thoracic surgery) is the surgical management of diseases of the blood supply to the heart, heart valves, and arteries and veins in the chest. General thoracic surgery, on the other hand, is a surgical field focusing on treatments for problems of the lungs and esophagus.

Thoracic surgeons are among the most highly educated medical specialists. After college and medical school training, a thoracic surgeon will have devoted at least five years to a general surgical residency and passed the certifying examination of the American Board of Surgery. After that, he or she will have devoted two to three years to a thoracic surgery residency and passed the certifying examination of the American Board of Thoracic Surgery.

Dr. Don Fannon and Dr. Dan Martens are two renowned thoracic surgeons. They are graduates of the Stanford University School of Medicine and have each worked in the fields of cardiac and thoracic surgery for more than 30 years. Both are frequent speakers at medical conferences. In 1981, they formed the Fannon and Martens Cardiac and Thoracic Surgery Medical Group (FMMG) in the San Francisco Bay area.

Description of Work in the FMMG Practice

FMMG consists of three surgeons, three physician assistants (PAs), a part-time practice manager, four full-time staff members, and one part-time staff member (see Table 1).

Table 1. FMMG Personnel

Physicians		
Don Fannon	Thoracic surgeon	Partner of FMMG
Dan Martens	Thoracic surgeon	Partner of FMMG
Mark Stein	Thoracic surgeon	Surgeon employee
Clinical Staff		
John Lee	Physician assistant	Full-time
Nicholas Hunter	Physician assistant	40%-time
Joann Wallace	Physician assistant	40%-time
Administrative Staff		
Kathy Nielsen	Practice manager	50%-time
Kelly Smith	Scheduling coordinator	Full-time
Linda Evans	Administrative assistant and backup surgery scheduler	Full-time
Miriam Black	Billing and collection representative	Full-time
Dee Andrews	Billing and collection representative	Full-time
Susan Grant	Statistics coordinator and computer systems manager	60%-time

Patients come to Dr. Fannon and Dr. Martens only with a referral from their primary care physicians. When a patient requests his first appointment with the surgeon, Kelly Smith, a member of the office staff, will first request insurance information so that the type and nature of coverage is known in advance of the visit. Depending on the type of insurance coverage, Ms. Smith may request a letter from the patient's primary care physician in support of the need for the appointment. The insurance company must be called to obtain authorization for this visit. Copies of the patient's medical records must also be requested prior to the patient's initial visit. If the patient has had recent laboratory tests (e.g., blood work) or other outside services (e.g., MRIs or stress tests) performed, then the results of these tests must be requested as well. A medical records file (hard copy) will be opened for this patient in order to accumulate this patient information.

When the patient arrives to see the surgeon for the first time, Ms. Smith will take medical history and other demographic information from the patient and obtain a photocopy of the insurance card. The patient will be instructed to have a seat in the waiting room until an examining room is ready. At that time, the patient will be escorted to the exam room where a physician's assistant (PA) will greet the patient and ask specific medical questions about the patient's medical complaint and current

medications. This information will be entered into the medical records, and the PA will take the patient's necessary vital statistics, such as pulse and blood pressure.

The surgeon will review these new entries in the patient's medical record before entering the exam room. When the surgeon meets the patient, he or she will have additional medical questions for the patient and will perform various diagnostic procedures. The surgeon will inform the patient as to the possible medical conditions that could be causing the patient's complaint and may prescribe additional tests to be performed either within the practice or through an outside laboratory, testing service, or hospital. Medication may or may not be prescribed at this time. Either the surgeon or the PA will spend some time educating the patient about these diagnostic tools and describing the possible series of events that the patient must now go through.

When the patient is ready to leave, the PA will escort him or her back to the waiting room, and a staff member will clean the exam room to ready it for the next patient. The staff member at the front desk will request the patient's insurance co-payment, if necessary, and may assist the patient in making appointments for diagnostic tests and/or procedures. The patient's next appointment may also be scheduled at this time. Often, the patient or a member of the patient's family will call with questions prior to the next visit.

Either the surgeon or the PA will inform the staff as to which services were provided to the patient so that a bill can be prepared. Medical practices record information about services provided using a system that defines each unit of work with a "CPT code." CPT stands for current procedural terminology. Developed by the American Medical Association, this coding system describes more than 7,000 distinct services rendered by physicians. The medical profession universally uses these codes for billing and record keeping. There are several CPT codes for office visits. The code selected depends on the work performed and the length of the visit.

After the patient leaves the office, the medical records are updated and re-filed. A bill to the patient's insurance carrier must also be prepared (with the appropriate CPT code) and filed. Some insurance companies allow for electronic filing; mail or fax has to be used for other insurance companies. Eventually, the practice will receive full or partial insurance reimbursement with an "Explanation of Benefits" (EOB). Quite often, the EOB denies full reimbursement to the practice. Sometimes the insurance company requests additional information from the practice before it approves full reimbursement, and sometimes reimbursement will be denied if the insurance carrier is not satisfied that all prerequisites for reimbursement have been met. Reconciling these EOBs and trying to prove that the reimbursement request is valid can be very time consuming. Resolving insurance conflicts often takes days or weeks, with many phone calls, e-mails, and faxes.

If (after sufficient visits to the surgeon) the patient, the surgeon, and the patient's primary care physician determine that surgery is necessary, the practice will begin to prepare for this surgery. The practice must reserve a time slot at the hospital operating room or other surgery center, and all necessary pre-operative tests must be scheduled. The patient and the patient's family must be kept informed at all times about the events preceding surgery and what will be required from the patient to ensure the surgery's success. If the surgery will require an additional attending surgeon from outside the practice or use of the hospital's operating room staff, these items must also be scheduled. The practice staff must not only orchestrate the patient's surgery, but the insurance company must be kept informed as well. The insurance company must be called to obtain authorization for the surgery. Sometimes reimbursement for a surgery will be denied if each step of the procedure was not preapproved by the insurance company.

After surgery, the surgeon will visit the patient in the hospital to make sure that all is well. The office staff will keep a "bedmap" that informs the physicians about the location of hospitalized patients. The practice staff may handle calls from anxious family members. The billing/EOB reconciliation/resolving billing disputes/collection cycle will be repeated for the surgical procedure.

During a 90-day period after surgery (the "global period") patients visit the surgeon's office to have stitches removed and/or to assess how well the patient is recovering from the surgery. Office visits in the global period are included in the cost of a surgery, and therefore there is no charge to the patients for this service. Depending on the complexity of a surgery and the state of a patient's health, there are usually one to four follow-up visits in the global period.

III. Steps in Building an ABC Model

ABC begins where traditional accounting ends. A traditional income statement reports expenses for the period. ABC assigns these expenses ("resources," in ABC jargon) to activities, or business processes. (We use the terms "activities" and "processes" synonymously.) The assignment of resources is based on how the activities consume the resources. Next, ABC assigns the cost of the activities to the cost objects (products or services). The assignment of process cost is based on how the cost objects consume the processes.

The challenge for the designer of the ABC model is to identify:

- the activities (business processes);
- the resource drivers (the drivers of expenses to activities);
- the cost objects (products and services delivered);
- the activity drivers (the drivers of activities to cost objects).

Identifying Activities

Activities, or processes, are what people do. They are the broad categories of work that keep an organization functioning. For example, processes in a manufacturing company include purchasing, machine setup, and packaging. An effective method for identifying the activities in an organization is to convene groups of people and ask them to describe the things they do on the job. They should use a verb-adjective-noun format:

- Inspect purchased parts.
- Receive customer calls.
- Resolve union grievances.

People will inform us about the tasks they perform on the job. Tasks are smaller units of work. In describing tasks, words like "manage" or "review" should be avoided because they are not descriptive of the work being performed. The tasks they list should occupy at least 5% of a person's time. The ABC model should not include tasks that are performed infrequently.

As people provide short descriptions of their work, the model builder should record the information on flip charts. As pages are filled, they should be posted along the walls of the room. This session generally lasts 60-90 minutes. When completed, there may be 50-150 tasks that describe work in the medical practice.

The next step is to ask the participants to combine the tasks into broader activities, or processes, that are descriptive of the business. The group and model builder should keep two things in mind as they go through this step. First, the goal is to trace expenses to the processes. Therefore, the processes should be clearly defined and understandable by everybody, and it should be easy to trace expenses to the processes. For example, suppose that the office staff in the medical practice identified the following tasks:

- Greet patients and update information in file.
- Escort patients to exam room.
- Respond to urgent medical requests.
- Book patient appointments.

- Answer patient medical questions.
- Interview new patients and enter into computer.
- Prepare new patient charts.
- Clean treatment rooms.
- Prepare labels and lists for next day's appointments.

It would be difficult for people to estimate the percentage of their time devoted to each of these tasks. The office staff may say that these tasks form one process: service patients in the office.

Second, try to keep the processes limited to a manageable number. In a company such as General Motors, there may be 75-100 processes. For a medical practice there should be no more than 20 or 25.

Identifying Cost Objects

Cost objects are identified in a similar way. Key staff people are asked to describe the products or services delivered.

Surgeons deliver services that are represented by hundreds of CPT codes. Activity-based costing is capable of determining the cost for each CPT code performed. To do this, however, would require each staff person to record the time he or she spent to perform each activity for each CPT code they worked on. For example, the person doing the billing would have to stop after preparing each bill to record the time spent to prepare the bill for CPT code 61510, 61512, 61513, etc. The receptionist would have to track the number of minutes spent on the telephone answering patient questions about codes 61514, 61515, etc. This would enable us to assign staff salaries to each activity, then the activity costs to the various CPT codes that consume that activity.

While possible in theory, the attempt to measure the cost of each individual CPT code makes no sense in practice. The office staff would find it difficult and annoying to record the exact time spent on each CPT code. If they were required to do so, the cost of the record-keeping time would probably outweigh any benefit to be obtained from the measurement. There would certainly be confusion about how to record tasks that are performed simultaneously. Measurement errors would abound. Moreover, the time differences for various codes would be trivial. For example, it may take 7 minutes to obtain insurance authorization for code 61622, and 7.5 minutes for code 61623. Finally, the accountant would find it difficult to assign facility and management costs accurately to each of the hundreds of codes that physicians might perform.

Therefore, the goal of the model builder is to combine the various medical services into broad categories that are more easily measured. These categories are the cost objects. The criterion for combining the medical services into cost objects is that they consume activities at about the same rate. For example, the surgical practice may deliver office visits of 10, 20, 30 or 40 minutes in length. All of these office visits consume practice expense at the same rate and would therefore comprise one cost object. For example, the practice expense consumed to schedule the appointment, greet the patient, check insurance coverage, prepare the bill, collect the co-pay, and book the next appointment is about the same for all office visits regardless of length. Of course, the cost of the physician's time would vary with the length of the office visit. But the goal of the ABC model is to assign the practice expense, not the direct cost of the physicians.

Defining Resource and Activity Drivers

The model builder has to determine how each expense category will be assigned to the various activities. The assignment will be based on how the activities consume the resources. For example, salary expense could be assigned to the activities based on the percentage of staff time spent performing each activity. Drugs and medical supplies could be traced to the activities that use these resources. Some expense categories (e.g., office supplies) may not be traceable to a particular activity and will have to be allocated.

Similarly, the activity costs are assigned to the cost objects based on how the cost objects consume the activities. For example, only office visits will consume the "service patients in the office" activity. Hospital visits and surgeries will consume the hospital-related processes. All cost objects will require updating medical records for the patients.

IV. A Closer Look at Activities in a Thoracic Practice

A business process, or activity, is a collection of tasks necessary to run an organization. Through interviews and discussions with FMMG's practice manager, PAs, and office staff, the tasks performed in a thoracic surgery practice were compiled (see Table 2).

Ms. Nielsen, the practice manager, said that the most important activities of the staff are to provide service to patients when they visit the office and support to the surgeons for seeing patients and performing surgeries in the hospital.

Table 2. Fannon and Martens Cardiac & Thoracic Surgery Medical Group: List of Tasks Performed

Tasks of Front Office Personnel Answer phone, distribute calls and take messages Open mail Respond to urgent medical requests Maintain doctors' daily schedules Prepare lists for next day's appointments Greet patients and update information in file Check charts for necessary paperwork Prepare new patient charts Obtain medical insurance info from new patients Interview new patients and enter data into computer Answer patient medical questions; give advice Record medical advice Escort patients to exam room Schedule office appointments to see the doctors Schedule outpatient procedures Assist/perform medical procedures in office Clean exam rooms Prepare letters for doctors to send to third parties	**Tasks Related to Medical Records** Pull, distribute and refile charts Organize information in files Solve problems in file room Enter surgery information into computer
Tasks Related to Hospital Surgeries Make post-operative public relations calls Coordinate surgery with patients Coordinate surgery with doctor Coordinate surgery with hospital Schedule surgery team Write admit orders to hospital Prepare direct admission charts Prepare daily bedmap	**Insurance-Related Tasks** Resolve billing conflicts Answer patient and attorney questions about billing Determine CPT codes for surgeries Obtain workers' compensation authorization for surgeries Obtain authorization for outpatient procedures Obtain authorization for surgery procedures Obtain authorization for office visits Coordinate doctors' court appearances Verify insurance coverage Verify inpatient charges for workers' compensation Prepare workers' compensation claim Submit claims to insurance company Prepare monthly billing reports Copy medical records for lawyers and insurance companies Fill out disability forms Answer telephone for inquiries from insurance companies Re-bill for underpayment Audit explanations of benefits (EOBs) Answer workers' compensation/disability status questions from patients and attorneys
Tasks Related to Accounting and Billing Collect money in office Pay bills Record payments Prepare payroll Prepare bank reconciliation and accounting reports Determine acctg adjustments to patient accounts Collect receivables Run tapes of checks received Record daily office billings Record inpatient billing information	**General Management Tasks** Supervise front desk employees Supervise PAs and office nurses Order medical supplies Perform business-sustaining activities Prepare management information reports Maintain and update computer software for practice Comply with regulatory requirements Prepare medical reports Copy and mail medical reports Give price estimate for surgery Order office supplies Negotiate leases
	Continuing Professional Development Attend workshops & seminars Review new Medicare/insurance rules Review new drugs/procedures

The major responsibilities of the practice manager are to manage the business side of the practice. This includes ensuring that the staff performs the necessary office tasks, working with lawyers and accountants, dealing with personnel issues, securing licenses and permits, marketing, strategic planning, etc. Either the practice manager or other members of the administrative staff will also engage in activities that help to maintain the facility, such as negotiating leases, making improvements to the office, acquiring and maintaining office equipment, installing computer and communication systems, etc.

People responsible for insurance-related work have to obtain authorization from insurance companies or other payers; prepare and send bills to insurance companies, Medicare, HMOs, etc; collect payments from the insurance companies; resolve any billing/payment disputes; and submit additional information or re-bill. Often, the staff has to provide information to attorneys, insurance companies, or other third parties for a variety of reasons.

To maintain professional medical licenses, surgeons, PAs, and nurses are required to attend continuing education courses to keep up with the new developments in medicine and technologies in their field. Sometimes the practice manager may also attend professional meetings to keep current. Office staff may attend training sessions on changes in insurance reimbursement policies or procedures and new office software.

Student Assignment

1. Develop a list of activities for FMMG.

Based on the tasks that people perform and the descriptions of work in a thoracic practice, develop a list of activities that summarize the key business processes, or activities, that keep the practice running. Do not include the activities of the physicians. To develop the list, think about how combinations of particular tasks make possible the execution of particular activities. Assign easy and meaningful names to the activities. Try to use an activity name that follows the verb-adjective-noun format discussed in Section III of this case. Use Section III and Table 2 to help determine the activities. Write your rationale for each activity you identify. You should turn in your solutions in the format shown below.

Activity List—Pizza Restaurant

Process/Activity Name	Process/Activity Description	Tasks Included in This Activity	Rationale for Grouping These Tasks
1. Prepare pizzas	This process is the process of preparing the ingredients for the pizza, then making and cooking the pizza.	Grate cheese, chop onion, slice olives, open cans of anchovies, thaw sausage, measure flour, make dough, make sauce, put toppings on pizza, cook in oven, etc.	All of these tasks relate to the single concept of getting a pizza made to order; they all occur in the kitchen; it would probably be difficult to get the cooks to separate their time by these individual tasks; the cooks can most likely tell us how much time they spend on the overall preparation of pizzas each day.
2. Manage the business.	This is the process of managing the business side of the restaurant.	Maintain books and records, interface with lawyer and external CPA, interface with landlord, keep up with regulatory requirements, etc.	All of these tasks relate to the single concept of managing the business side of the restaurant; probably only one or two people do this.
3. etc.			

V. Cost Drivers Linking Practice Resources (Expenses) with Processes (Activities)

Practice Expenses of FMMG

Practice expenses for FMMG for 1998 are shown in Table 3.

Table 3. Fannon and Martens Cardian & Thoracic Surgery Medical Group

Practice Expenses
for the 12 months ended December 31, 1998

Employees' salaries - clinical PAs	$300,152
Employees' salaries - administrative	274,193
Office rent	188,280
Telephone	21,149
Office supplies and expenses	26,470
Office depreciation expense	17,310
Office equipment lease	12,516
Computer services	1,506
Insurance-business package	11,003
Meetings and travel to conferences	9,447
Promotion and entertainment	4,182
Dues and subscriptions	4,051
Accounting services	7,000
Legal expenses	3,910
Medical supplies	2,771
Laundry	416
Business taxes and licenses	13,984
Interest expense	6,341
Repairs and maintenance	60
Miscellaneous expense	1,207
Total expenses	$905,948

One full-time PA, John Lee, spends most of his time (55%) preparing for surgeries and assisting surgeons with surgeries in the hospital. John spends another 30% of his time helping surgeons with patients in the office, 5% writing patients' medical records, 5% scheduling and coordinating surgery patients in hospital, and 5% of his time reading medical journals and going to professional training courses. Two part-time (40%) PAs, Nicholas Hunter and Joann Wallace, each spend 40% of their time assisting surgeons with office visits, 40% assisting surgeons with surgeries in the hospital, 10% up-dating medical records, and 10% maintaining professional education.

Dr. Fannon and Dr. Martens delegate the daily management of the practice to the office manager, Kathy Nielsen. She is a part-time (50%) FMMG employee. The following is a list of the tasks that she performs. She was unable to provide us with a breakdown of time spent on each task.

Tasks Performed by the Practice Manager

- Strategic planning
- Marketing
- Contract negotiation and evaluation
- Prepare financial statements
- Payroll, payroll tax returns
- Comply with regulatory requirements
- General office management
- Purchase supplies
- Help with general office activities, such as filing or telephone answering on busy days
- Interface with attorneys and accountants
- Staff scheduling

Kelly Smith is the scheduling coordinator for the practice. She answers phones and checks patients in at the front window, schedules patients' office appointments and hospital admissions, and arranges for emergency surgeries. She is also responsible for obtaining all billing and insurance information and maintaining and filing patient information, including charts and testing results. She sorts and opens mail and orders exam room and office supplies. In addition, she opens and closes the office, orders prescription refills, and types and distributes the daily schedule and the surgeons' weekly calendar.

In general she spends 40% of her time scheduling patients' office and lab visits, 10% on servicing patients in the hospital, 30% obtaining insurance authorization, 10% maintaining patient medical records, 5% scheduling surgeries in hospital, and 5% maintaining the facility.

Linda Evans is an administrative assistant and backup surgery scheduler. Her duties include transcribing medical records; typing forms, applications, and correspondence; completing disability claims, patient-related forms, and letters; managing subpoenas and records requests; and doing computer-related maintenance. She is also responsible for opening and sorting the mail and organizing and preparing charts for office patients. She greets and escorts office patients and maintains patient exam rooms.

Ms. Evans spends 40% of her time on activities related to patients' office visits, 10% for servicing patients in the hospital, 10% obtaining insurance authorization, 10% billing, 20% transcribing and maintaining patients' medical records, 5% scheduling surgery patients in hospital, and 5% providing records for third parties.

FMMG has two office staff working on billing and collections. Miriam Black and Dee Andrews are responsible for patient accounts. They assign CPT and ICD codes for services, prepare charge tickets, confirm the accuracy of patients' insurance information and status, post charges to patient accounts and generate and send insurance claims. They also post all payments to patients' accounts, maintain insurance EOB files, appeal incorrect or denied payments, monitor aging of patient accounts, make collection calls to insurance companies and patients, re-bill claims when necessary, and prepare and send credit refund letters. In addition, Ms. Black keeps current on all coding and billing regulations, updates list of services and procedures for coding changes and fees and maintains insurance company contracting files and the practice's accounts receivable. Ms. Andrews maintains accounts payable and the general ledger.

Ms. Black spends 10% of her time performing activities related to servicing patients for office visits, 20% of her time on billing insurance companies, 30% collecting insurance payments, 30% resolving problems related to payments, and 10% of her time maintaining accounting records.

Ms. Andrews spends 10% of her time performing activities related to servicing patients for office visits, 25% of her time on billing insurance companies, 20% collecting insurance payments, 25% resolving problems related to payments, and 20% of her time maintaining accounting records.

Susan Grant, a part-time (60%) statistics coordinator and computer systems manager, helps to manage the data collection system and the computer system. These statistics are necessary for reporting to government agencies and various medical organizations. She prepares quarterly and annual surgical reports including morbidity and mortality reports, risk stratification on CABG-only[1] cases, and risk analysis on other open-heart cases. She also performs data analysis as requested by doctors and others and updates manufacturers' reports from pacemaker and allograft tissue companies.

FMMG Office

FMMG occupies a large office (5,200 square feet) in the San Francisco Bay Area. The practice started with six physicians; three have retired during the past two years. Currently, only three surgeons

[1] CABG stands for coronary artery bypass graft.

use the office space. The practice's conference room is used for both administrative and clinical purposes, and both patients and the practice staff use the rest rooms. The office space is divided as shown in Table 4.

Table 4. FMMG Office Space

Office Space	Square Feet
6 physicians' offices	200 per office
4 examination rooms	175 per room
1 large office for three PAs	356
1 large business office	800
2 manager and staff offices	150 per room
1 conference room /library	500
1 reception area	200
1 waiting room	450
1 staff lounge	400
Rest rooms	294

Assigning Costs (Expenses) to Activities

In the first stage, an ABC model assigns resource costs (expenses) to the various activities based on how the activities consume the resources. For example, administrative and clinical staff salaries and benefits could be assigned to different activities depending on the amount of staff time each activity consumes.

Many expense items could be traced to particular activities. For example, rent, depreciation, insurance and property taxes, utilities, all relate directly to the use of the facility. Licenses, subscriptions to professional publications, computer maintenance costs, accounting, marketing and promotion costs, travel and entertainment costs, and interest expenses are costs necessary for sustaining the business.

Drugs and medical supplies are used for patients' office visits. Laundry costs are also for servicing patients' visits in the office. Rental payments or depreciation for medical equipment are related to servicing patients in the office and to performing X-rays or EKGs for patients. Equipment leases are for office machines needed for general business functions. Meetings and travel out of town are primarily for continuing education courses.

Expense items that cannot be traced are allocated based on estimates provided by the staff. For example, the office manager said that about 25% of office supplies, computer supplies, printing, copying, mailing and postage and messenger services were consumed to service patients in the office, 25% for billing, and 25% to maintain medical records. The remaining 25% were for general management of the practice.

Student Assignment

2. Determine the drivers from resources to activities.

Use the "official" process list provided by your instructor. Determine the drivers (denominators) to use to assign resources (costs) to activities. For example, administrative salaries are best allocated

to activities based on the employee time spent on each activity. Assume that all employees completed the Employee/Process Form (see page 63). Ignore salary differences between administrative staff members. That is, assume that a 50% administrative employee earns about half the salary of a full-time administrative employee. This allows you to compute a weighted-average percentage of administrative time spent on each activity (see the table below). When you compute this weighted average, remember that a 50%-time employee should carry only half the weight of a full-time employee. You may make similar assumptions for the clinical personnel. The following format is suggested for your solution:

Cost Drivers from Costs to Activities
Fannon and Martens Cardiac & Thoracic Surgery Medical Group

EXPENSE ITEM (RESOURCES)	DESCRIBE COST DRIVER	RATIONALE FOR CHOICE OF COST DRIVER
Employees' salaries - Clinical PAs	Based on % of employee time spent on each of the processes (see attached spreadsheet for details).	To the extent that clinical employees can reasonably estimate the time they spend on each of the processes, this is the most accurate method of assigning these costs to the processes.
Medical supplies	Assign 100% to Process #1, service patients in the office	Process #1 is the only process that consumes this cost.
Miscellaneous expense		

Example:

Weighted average of employee time

Process	50% Sue	100% Bob	100% Sally	Total Admin	Weighted Average
1		20	40	60	24.00%
2		10	10	20	8.00%
3		30		30	12.00%
4		10	20	30	12.00%
5		5	5	10	4.00%
6			10	10	4.00%
7		20		20	8.00%
8			10	10	4.00%
9			5	5	2.00%
10	10			10	4.00%
11	40			40	16.00%
12		5		5	2.00%
	50	100	100	250	100.00%

SOCIETY OF THORACIC SURGEONS
Practice Expense Study
Employee/Process Form

A business process (or activity) is a collection of tasks necessary to run a medical practice. Business processes include servicing patients in the office, maintaining medical records, billing, etc. We have identified 12 processes in a typical thoracic surgery practice. Please see the attached process list with explanations.

To determine the cost of providing medical service, we need to know which processes consume your time. Please review the process list. Think about the work you have done over the past few months and indicate the *approximate percentage* of your time typically spent on each process. If all of your time is spent on one process, simply enter 100% in the appropriate row. If your time is divided between several processes, the approximate percentages should be entered in the appropriate boxes. The smallest block of time should be 5%; that is, ignore those things that you do infrequently. Time should sum to 100%.

Employee Name	Classification (circle one) Administrative or Clinical
Process (defined on attached document)	Approximate percent of time spent on process
(1) Service patients in office (2) Service patients in hospital & other facilities (3) Obtain insurance authorization (4) Maintain medical records (5) Schedule & coordinate surgery patients in hospital (6) Billing/filing insurance claims (7) Collect payments (8) Resolve collection disputes and re-bill charges (9) Provide information to third parties (10) Maintain professional education (11) Sustain business by managing and coordinating practice (12) Maintain facility	
Total time (should = 100%)	100%

VI. Cost Objects and FMMG Activity

Services Provided by FMMG

Section III discussed the identification of cost objects in an ABC model. In this case various CPT codes were bundled into the product or service groups—cost objects—that consume processes in similar ways. The four categories of cost objects identified in this study were:

- no-charge office visits in global period;
- chargeable office visits;
- chargeable hospital visits;
- surgeries.

In 1998 Dr. Fannon and Dr. Martens performed 639 surgeries, including 508 cardiac surgeries and 131 thoracic surgeries. They had 779 hospital visits that were charged to the patients, 1,188 no-charge office visits in the global period, and 1,975 chargeable office visits.

A distinction is made between chargeable and no-charge office visits because they consume activities differently. No-charge office visits are post-surgical visits (usually within the 90-day "global period" following surgery) that are included in the cost of a surgery. No-charge office visits do not require the staff to obtain insurance authorization (because the authorization for the surgery includes the follow-up office visits) or to process the collection of payments. However, a bill for $0 is prepared for a no-charge office visit.

All chargeable office visits, regardless of length or physician services provided, are considered as a single cost object because these office visits consume practice expense at about the same rate.

A chargeable hospital visit does not usually require insurance authorization as this authorization is linked to the surgery, and it does not consume any office-related processes.

All surgeries, regardless of complexity, consume about the same amount of practice expense. Therefore, all surgical CPT codes were bundled together as the cost object "surgeries."

Cost objects consume activities at different rates. For example, insurance authorization must be obtained for all chargeable office visits and all surgeries. However, the staff told the field researchers that it usually takes them twice as much time to obtain authorization for a surgery as it does for a chargeable office visit. The staff also told the researchers that collection disputes or third-party requests for information almost always involve a surgery and not a hospital or office visit.

Within most ABC software packages, it is possible to allocate activity costs either back to other activities or to the final cost objects. The process of sustaining the business (managing the practice) relates to managing the other processes in the practice more directly than it does to the final cost objects. Similarly, the process of maintaining the facility is composed mostly of the facility costs. Therefore, this process (activity) cost relates more directly to the space utilized by the other processes than it does to the final cost objects. The office space occupied by the physicians and PAs, examination rooms, waiting rooms, and part of the conference room and rest rooms are for servicing the patients during an office visit. The rest of the office space supports the other processes that take place in the office (activities 3-9).

Revenues

FMMG's revenues come from fees paid by Medicare and health insurance companies for their services including seeing patients in their office for initial consultation to diagnose the patient's problem, seeing patients at the hospital for problems, follow-up office visits, and performing cardiac and thoracic surgeries at the hospital.

All the services they provide are classified according to CPT codes. The medical profession universally uses these codes.

HCFA uses relative value units (RVUs) to set Medicare reimbursement rates for different CPT codes. RVUs are values assigned to the medical services that physicians perform. An open-heart surgery will have more RVUs than removing a bunion because the former is more complex, requires a surgeon with more skill and more training, takes much more time for the physician to perform, and because a life is at risk, is more critical. The Medicare reimbursement amount for each CPT code is based on RVUs and has three components: physician's work, practice expense, and malpractice expense. The reimbursement for surgery covers a global period (usually 90 days) during which follow-up office visits are not charged to the patient. In other words, the reimbursement for a surgery includes follow-up office visits in the global period. Selected 1998 RVU and reimbursement amounts for thoracic surgery are shown in Table 5.

Table 5. RVU and Reimbursement Amounts for Selected Thoracic Surgeries

CPT Code	Description	RVUs			Reimbursement*			
		Work	Practice Expense	Malpractice	Work	Practice Expense	Malpractice	Total
32440	Removal of lung	21.02	18.56	3.55	$707.16	$680.92	$130.24	$1,518.32
32480	Partial removal of lung	18.32	17.15	3.23	616.33	629.19	118.50	1,364.01
33405	Replace aortic valve	30.61	30.48	5.33	1,029.79	1,118.23	195.54	2,343.56
33510	CABG, vein, single	25.12	27.63	5.20	845.09	1,013.67	190.77	2,049.54
33512	CABG, vein,triple	29.67	32.64	6.22	998.17	1,197.47	228.20	2,423.83
33518	CABG, artery-vein, two	4.85	5.34	1.02	163.16	195.91	37.42	396.50
33533	CABG, arterial, single	25.83	28.41	5.36	868.98	1,042.29	196.64	2,107.91
99244	Office consultation	2.58	1.23	0.11	86.80	45.13	4.04	135.96
99254	Inpatient consultation	2.64	1.20	0.11	88.82	44.02	4.04	136.88

* In 1998 the conversion factor (or reimbursement amount) was $36.6873 per RVU. However, in 1998 there was a one-year budget neutrality work adjuster applied to work RVUs of 0.917, so that the effective conversion factor for work RVUs in 1998 was $33.6423.

Source: National Physician Fee Schedule Relative Value File Calendar Year 1998.

Student Assignment

3. Determine the drivers from processes to the cost objects.

Based on the discussion found in Section VI of the case, determine the drivers (denominators) to use in the assignment from activities (processes) to the four cost objects. The format on the next page is suggested for your solution.

Drivers from Process (Activity) Costs to Cost Objects
Fannon and Martens Cardiac & Thoracic Surgery Medical Group

Process	Describe driver to cost objects	Rationale for choice of driver
#1 Service patients in the office	Here describe which of the four cost objects should consume this process cost, and describe the driver you would use to allocate the process cost to the chosen cost objects.	Here explain why you chose which cost objects should absorb this process cost and why the other cost objects should not absorb this process cost. Also defend your choice of drivers.
#2 Service patients in the hospital	etc.	etc.

4. Use an ABC software package to design an ABC model for FMMG, including resources, activities, and drivers, to compute the unit cost of each cost object.

   After students hand in this part of the case, instructors will hand out the results of the "official" ABC model. Students can then respond to assignments #5 through #7 below using the same set of ABC data.
5. Compare the ABC cost of each cost object with the Medicare reimbursement for that cost object, and comment on FMMG's costs and revenues. Also, compare the Medicare reimbursement for a surgery that averages one, two, or three follow-up office visits in the global period to FMMG's cost to deliver the services.
6. Comment on the per-unit process cost of each cost object. What makes certain cost objects most costly than others? Are there any non-value-added cost components?
7. Recommend ways that FMMG can best analyze its costs for cost control purposes.

Case 6

Colombo Frozen Yogurt

Activity-Based Costing Applied to Marketing Costs

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Abstract: *Marketing costs are coming under increased scrutiny, and activity-based costing (ABC) is often the tool used to analyze such costs. ABC is useful because it requires the identification of cost drivers and provides information that is directly applicable to decisions about marketing costs and benefits. This case illustrates the application of activity-based costing to marketing costs in a food manufacturer. It illustrates how marketing support costs may differ across two channels of distribution. This information is very useful for understanding profitability in the two channels and for decisions about how to service the two channels.*

In 1994, General Mills Incorporated, a $6 billion consumer goods company, acquired Colombo Frozen Yogurt. General Mills Inc. (GMI) believed they could add Colombo frozen yogurt to their existing product lineup to increase net sales with little addition in marketing cost.

Frozen yogurt is sold through two distinct market segments—independent shops and impulse locations such as cafeterias, colleges, and buffets. The shop business revolves around frozen yogurt and specialty items made from yogurt. In the impulse segment, yogurt is an add-on to the main business. GMI's large sales force already served the impulse market with brand items such as Cheerios, Gold Medal Flour, Betty Crocker, Chex Snacks, and so on.

The financial results in the first couple of years were mixed. Profits increased along with sales volume. However, when sales hit a plateau, earnings dropped. The sales people were dissatisfied with yogurt sales and said their customers weren't happy either. The GMI sales force focused on the impulse segments and saw increases in volume there. However, volume in the shop segment declined at alarming rates. While GMI knew sales by segment, they didn't track costs by segment. Instead costs were allocated based on sales dollars. Therefore, they needed a new method to track costs—activity-based costing.

Frozen Yogurt Market Structure

Colombo Yogurt Company, an early innovator in the frozen yogurt market, did well during the early craze when customers flocked to frozen yogurt as a healthy alternative to ice cream. As the market continued to develop, Colombo chose to market mainly to independent shop owners. As a result, Colombo lost customers when franchise operations such as TCBY encouraged independent shops to become a franchise and purchase the product from the franchiser. In the early 90s, the market changed again as food service operators such as cafeterias, colleges, and buffets started to add soft-

serve yogurt to their business. By the late 90s, these impulse locations accounted for two-thirds of the soft-serve market.

The economics of shops is similar to that of restaurants. The shops focus on maximizing profit per square foot. While they are aware of food cost, shop owners are rooted in a culture dominated by guest counts (new and repeat) and check averages. These variables are more linked to the kind of customer referrals where word of mouth brings in new customers and the total experience brings them back again. The key variable is the quality of the product and experience (service and feeling). To compete with other shops, they must innovate by adding distinctive new products such as smoothies, boosters, and granitas. Otherwise they may go out of business as thousands have done in the last decade.

The economics of impulse locations is very different. They make their living from other items, and the soft-serve trade is only performance topspin. These firms are unwilling to take any risk (new equipment or extra labor) to serve highly differentiated products such as smoothies or granitas. They generally are interesting in providing a quality service for a reasonable price. They typically measure performance with cost per serving, and they have a difficult time understanding profit contribution as opposed to food cost. Impulse locations are typically small.

The GMI-Colombo Marketing Plan

It was the impulse business in the Foodservice operations that made Colombo an attractive acquisition for General Mills. The GMI Foodservice Division was already marketing brands such as Cheerios, Yoplait, Betty Crocker, Gold Medal Flour, Hamburger Helper, Pop-Secret, and Chex Snack to food management firms, hospitals, and schools. Colombo yogurt was added to this product lineup, and the Foodservice sales force covered both shop and impulse locations.

Sales Force

Colombo's sales force was merged into the Foodservice sales force. Customers were reassigned to sales people who already serviced that geographical area. The sales people varied in their reaction to the product. Some found shops easy to sell to, while others avoided the shops despite the possible lost commission. Many spent a lot of time helping their impulse customers understand how to use the machinery.

Merchandising Promotions

Colombo traditionally charged the shops for merchandising that was large scale and eye popping (neon signs). The shops used these signs to draw customers inside. Since GMI traditionally provided merchandising at no cost, they stopped charging for it. Sales people used the merchandising as a reason to visit the customers, and the same merchandising was provided to both shops and impulse locations. While shops expressed interest in the kits, some sales people noticed that the impulse locations didn't even hang them up.

Pricing Promotions

Pricing promotions are a mainstay of GMI's impulse location approach. GMI's sales force generally used these promotion events as an opportunity to visit their accounts and take advantage of the occasion to meet service needs and sell other products that might not be featured.

GMI made price promotions available to both segments of the market. While the deals were typically around $5 per case, they averaged $3 per case against all the volume shipped during the year. GMI marketing knew price was not a major decision factor for shops, and they did not target pricing promotions to them. However, shops were aware of the promotions and took advantage of them.

The Business Status Pre-ABC

Profit and Loss by Segment Pre-ABC

Category	Impulse Segment	Yogurt Shops	Total
Sales in cases	1,200,000	300,000	1,500,000
Sales revenue	$23,880,000	$5,970,000	$29,850,000
Less: price promotions	– $ 3,600,000	– $ 900,000	– $ 4,500,000
Net sales	$20,280,000	$5,070,000	$25,350,000
Less: cost of goods sold	– $13,800,000	– $3,450,000	– $17,250,000
Gross margin	$ 6,480,000	$1,620,000	$ 8,100,000
Less: merchandising	– $ 1,380,000	– $ 345,000	– $ 1,725,000
Less: SG&A	– $ 948,000	– $ 237,000	– $ 1,185,000
Net income	$ 4,152,000	$1,038,000	$ 5,190,000

ABC Analysis of Cost of Goods Sold

Cost of goods sold is made up of $14,250,000 for ingredients, packaging, and storage and $3,000,000 for pick/pack and shipping. Since the product is the same across segments, the cost to produce should be the same. However, pick/pack and shipping costs vary according to whether or not the order is for a full pallet. Full pallets cost $75 to pick and ship whereas individual orders cost $2.25 per case. There are 75 cases in a pallet and the segments differ in their utilization of full pallets, as shown below.

	Impulse Segment	Yogurt Shops	Total
Cases in full pallets	60,000	240,000	300,000
Individual cases	1,140,000	60,000	1,200,000
Total cases	1,200,000	300,000	1,500,000

ABC Analysis of Merchandising

Merchandising costs consist mainly of kits costing $500 each. A review of where the kits were sent indicated that a total of 3,450 kits were delivered, 90 of them to shops.

ABC Analysis of Selling, General, and Administrative (SG&A)

Since sales representatives service several products, their costs were allocated to the various products based on gross sales dollars. GMI gave diaries to 10% of the sales force in randomly selected markets of the country and asked them to track their time in activity classifications for 60 days. The diaries indicated that sales representatives spent much more time per dollar of sale on yogurt than other products. When SG&A costs were allocated based on time, the total allocation to yogurt jumped from $1,185,000 to $3,900,000. Of their time spent on yogurt, only 1% of the time was spent on the shops.

Questions for Discussion

1. Briefly summarize Colombo's competitive environment and General Mills's strategy in response to that environment.
2. Using the ABC analysis, determine new segment profitability statements.
3. Based on your analysis in questions 1 and 2, what changes would you suggest to General Mills?

Institute of Management Accountants
Committee on Academic Relations

1999-2000

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