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ONLINE BUDGETING AND MARKETING CONTROL WITH THE
PROFORMA ANALYSIS PACKAGE

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ABSTRACT

The Online Proforma Analysis Package enables competing participant teams in the marketing simulation COMPETE to operationalize the Iceberg Principle, prepare marketing budgets, and allocate their limited marketing resources effectively and efficiently. Participants use the Proforma Analysis Package to generate a set of proforma statements, preview the projected results, modify the marketing budget if necessary, and finalize their marketing decisions. Later, they use the Proforma Analysis Package and Web-based simulation results to monitor and graph their actual v projected results, identify deviations, calculate performance indices, understand the underlying reasons for the deviations, and take corrective action, thereby exercising control over their marketing programs.

INTRODUCTION

The Proforma Analysis Package enables competing participant teams in the marketing simulation COMPETE (Faria 2006) to take heed of and operationalize the Iceberg Principle, prepare marketing budgets, allocate their limited marketing resources effectively and efficiently, and control their marketing programs.

The Iceberg Principle or the 90-10 Principle states that much good information is hidden in summary data (McCarthy and Perreault 1984; McCarthy and Perreault 1987; Perreault and McCarthy 1996). Icebergs reveal only about 10 percent of their mass above water level. The remaining 90 percent is concealed and non-uniformly distributed below water level, and can sink ships such as the Titanic that venture too near.

Much business and marketing data exhibit the same characteristics. While the Income Statement may reflect substantial sales revenue and profits, and/or the Balance Sheet may indicate substantial amounts of cash, investments and retained income, these financial statements may conceal problems in specific strategic business units (SBUs). SBUs are specific product offerings in specific regions that have specific target markets with specific needs and purchase motivations, a specific set of strategies, facing a specific set of competitors with specific competing strategies. Based on a review of the financial statements, everything may appear to be calm and peaceful on the surface. Yet, closer analysis

may reveal jagged edges in one or more SBUs that can sink the business. While summary data and averages simplify and facilitate understanding, managers need to ensure that data summaries don't conceal more than they reveal.

The primary purpose of this paper is to present this new user-centered learning tool that helps to prepare students for marketing decision-making responsibilities in their future careers. The objective is to provide participant teams the opportunity to use proforma analysis to develop a set of proforma statements, monitor their performance, identify deviations, understand the underlying reasons for deviations and take corrective action thereby exercising control over their marketing programs.

BUDGETING

Budgets are tools that are made and used by management. In order to prepare a budget, management needs to look ahead and to consider how the various functions of a business fit together. A budget is more than speculation; it is a workable pattern to be followed. Benefits can be derived from the budgeting process, although budgeting is not an end in itself.

First, budgets constitute a means of coordinating activities with the cooperation of those who seek to achieve a common goal. Next, budgets help to make various members of the marketing management team aware of problems faced by others and the factors that interlock in running a business organization. Further, a budget places an obligation upon the enterprise to maintain adequate financial records that can be tied to the budget. With a budget all people in the organization become conscious of the need to conserve business resources. In addition, budgets reveal efficient or inefficient use of resources, provide management a means for self-evaluation, and can be used to measure progress.

PROFORMA ANALYSIS

Marketing managers are charged with the responsibility of planning, organizing, implementing, and controlling marketing plans and programs that are designed to achieve a specific set of objectives (Dyer and Horman 1991; Kotler 2003; Lehman and Winer 1988; Lilien 1993; Lilien and Rangaswamy 2003; McCarthy and Perreault 1984;

Developments in Business Simulation and Exoeriential Learning, Volume 34, 2007

McCarthy and Perreault 1987; Perreault and McCarthy 1996). In performing their responsibilities, marketing managers are faced with scarce resources (discretionary marketing dollars) and unlimited wants to deploy these limited resources (sales force and advertising expenditures) in order to achieve their objectives. Consequently, they need to allocate the scarce resources at their disposal both effectively and efficiently.

The efficient allocation of scarce marketing resources is facilitated through budgetary control. A budget is a plan that shows how resources are to be acquired and used over a specified time period. While operations are in progress, the budget serves as a basis for comparison and facilitates the control process. Budgetary control refers to the systematic control of marketing operations by means of pre-determined standards prepared in detail and assembled into a comprehensive program. These pre-determined standards provide a basis for comparison with actual performance and costs, with the objective of attaining the final results indicated in the program (O'Dell et al 1984).

Budgeting and budgetary control operate together as essential features of a total marketing management system. If investigation reveals that the plan is satisfactory but that

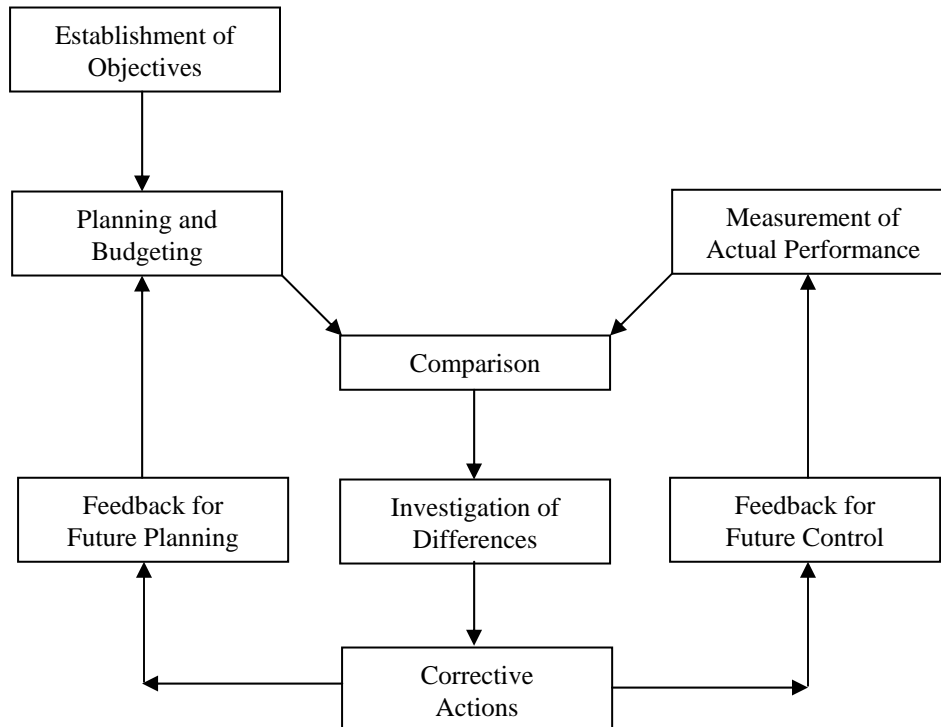
performance can be improved, steps are taken to bring future performance into line with the plan. If investigation reveals that the plan is unsatisfactory, the plan is corrected (Horngren, Sundem and Stratton 1999; Horngren, Foster and Datar 2000; Moore and Jaedicke 1980). These corrective actions are shown in the diagram of the budgetary process (see Figure 1) as feedback loops.

THE MARKETING SIMULATION COMPETE

COMPETE (Faria 2006) is a marketing simulation designed to provide students with marketing strategy development and decision-making experience. Competing student teams are placed in a complex, dynamic, and uncertain environment. The participants experience the excitement and uncertainty of competitive events and are motivated to be active seekers of knowledge. They learn the need for and usefulness of mastering an underlying set of decision-making principles.

Competing student teams plan, implement, and control a marketing program for three high-tech products in three

**FIGURE 1
THE BUDGETARY PROCESS**



Source: Moore, Carl L. and Robert K. Jaedicke (1980), *Managerial Accounting*. Cincinnati, OH: South-Western.

Developments in Business Simulation and Exoeriential Learning, Volume 34, 2007

regions within the United States. The features and benefits of each product and the characteristics of consumers in each region are described in the student manual. Based on a marketing opportunity analysis, a mission statement is generated, specific and measurable company goals are set, and marketing strategies are formulated to achieve these goals. Constant monitoring and analysis of their own and competitive performance helps the teams better understand their markets and improve their decisions.

Each decision period (quarter), the competing teams make a total of 74 marketing decisions with regard to marketing their three brands in the three regional markets. These decisions include nine pricing decisions, nine shipment decisions, three sales force size decisions, nine sales force time allocation decisions, one sales force salary decision, one sales force commission decision, twenty-seven advertising media decisions, nine advertising content decisions, three quality-improvement R&D decisions, and three cost-reduction R&D decisions. Successful planning, implementation, and control of their respective marketing programs require that each company constantly monitor trends in its own and competitive decision variables and resulting performance.

COMPETE ONLINE DECISION ENTRY SYSTEM (CODES)

The web-based MINISIM program is accessible online to competing participant teams in the marketing simulation COMPETE. The teams log in to the COMPETE Online Decision Entry System (CODES) website (Palia and Mak 2001, Palia et al 2000). Their login is validated against a database of participating teams for each industry, and they have access to their decisions and printouts (results) for all prior decision periods.

Once the team ID and password are validated against a database of participating teams, the user (participant) is presented with a personalized Welcome screen with several options. In addition to the “Main Menu” option, the user is presented with one or more of three dynamic links “Grades,” “Handouts,” and “Performance” only if and when the corresponding files are uploaded to their industry folder on the web server by the administrator (Palia 2006).

The “Grades” option, when selected at the Welcome page, takes the user (participant) to a comprehensive updated grade sheet which indicates their score on each assignment as well as their cumulative score relative to other class members. The cumulative scores are reported on an absolute as well as percentage (of the completed assignments) basis. Descriptive statistics for each assignment such as the count, high, low, average, and standard deviation of scores are reported.

The “Handouts” option takes the user (participant) to a comprehensive handouts repository which includes all class handouts such as the course syllabus, course schedule,

grading sheets for each assignment, PowerPoint handouts (1, 2, 3, 4 and 6 slides per page options) that are sorted chronologically by class meeting for the entire semester. The user can select, view, and print the desired version of the handout. The 6 slides per page option saves paper. The 3 slides per page option provides space for note-taking during the presentation. The 1 slide per page option enables the user to select (cherry pick) and print detailed (busy) individual slides.

The “Performance” option takes the user (participant) to a comprehensive cumulative team performance ranking at pre-selected milestones during the simulation competition. Each team is provided with a cumulative ranking on 18 performance criteria in the Excel version of the simulation results printout every decision period (Palia 2005). These criteria include 6 profit criteria, 3 market share, 3 quality and 3 cost-of-production criteria by product, and 3 efficiency criteria. Prior to the start of the competition, the teams decide by consensus (or majority vote) the frequency of access to the cumulative team performance ranking (via CODES). All teams decide whether to access the cumulative team performance ranking every decision period (3 months), every two decision periods (6 months), or every four periods (12 months). They assess the added benefit of learning about the relative strengths and weaknesses of each competitor against the added cost of revealing their own relative strengths and weaknesses to their competitors.

At the “Main Menu” webpage they select “Enter Decisions” to enter their team decisions prior to the decision deadline. At the decision deadline, the administrator downloads the team decision files, runs the simulation, and uploads the text and Excel versions of the simulation results to the Web Server. Later, the teams log in to CODES, proceed to the Main Menu, and select “View Results” to view their team performance results in either text or Excel format.

THE PROFORMA ANALYSIS PACKAGE

The Proforma Analysis Package Version 1.0 is a Microsoft Excel Workbook consisting of ten Proforma Analysis worksheets and seven Performance Analysis worksheets. Internal and external links among worksheets minimize user data entry requirements. Several pie charts and multiple bar graphs are provided to enhance visualization and understanding of the relationships among the variables and to facilitate data analysis.

The Proforma Analysis section of the Workbook includes proforma regional sales revenue, regional cost of goods sold by product, cost of goods sold, income statement, region 1, 2 and 3 income contribution statements, T-accounts, cash flow statement and balance sheet worksheets (see Table 1). The Performance Analysis section of the Workbook includes income statement, cost of goods sold, region 1, 2 and 3 income contribution

**TABLE 1
PROFORMA ANALYSIS WORKSHEETS**

Worksheet	Title
Proforma	Analysis
PRSR	Proforma Regional Sales Revenue
PRCOGS	Proforma Regional Cost of Goods Sold by Product
PCOGS	Proforma Cost of Goods Sold
PIS	Proforma Income Statement
PRICS-R1	Proforma Regional Income Contribution Statement - Region 1
PRICS-R2	Proforma Regional Income Contribution Statement - Region 2
PRICS-R3	Proforma Regional Income Contribution Statement - Region 3
PAWS	Proforma Analysis Worksheet - T Accounts
PCF	Proforma Cash Flow Statement
PBS	Proforma Balance Sheet

**TABLE 2
PERFORMANCE INDICES WORKSHEETS**

Worksheet	Title
Performance	Analysis
IS PI	Income Statement Performance Indices
COGS PI	Cost of Goods Sold Performance Indices
RICS-R1 PI	Region 1 Income Contribution Statement Performance Indices
RICS-R2 PI	Region 2 Income Contribution Statement Performance Indices
RICS-R3 PI	Region 3 Income Contribution Statement Performance Indices
CF PI	Cash Flow Performance Indices
BS PI	Balance Sheet Performance Indices

statement, cash flow, and balance sheet performance indices worksheets (see Table 2).

All worksheets are protected in order to safeguard internal and external cell references and cell formulae. The data entry cells are highlighted and left unprotected. All worksheets have been pre-formatted for printing purposes. The proforma region 1, 2 and 3 income contribution statements, and region 1, 2 and 3 income contribution statement performance indices worksheets facilitate regional data entry and analysis for a specific region by each of the three regional managers.

THE PROFORMA ANALYSIS PROCESS

The first major step in proforma analysis is the preparation of proforma statements such as the proforma income statement, proforma regional income contribution statements, proforma cash flow statement, and proforma balance sheet. These statements reveal the expected results of the operations of the firm based on the decisions made by

the marketing manager. Based on a preview of the projected cash surplus or deficit, and profit or loss, competing participant teams can modify their strategies, marketing mix, and/or marketing budget, and finalize their marketing decisions.

First, competing participant teams forecast the sales of each SBU based on their marketing mix and their knowledge of the market and the competition. They can use different approaches to forecast sales. These include use of (a) the Industry Sales Forecast available as a Market Research Report, (b) multiple regression analysis with the Online Multiple Regression Analysis Data Matrices Package (Palia 2004), and/or (c) the Online MINISIM Market Test Laboratory Program (Palia and Roussos 2006). Based on the marketing mix to be used and the corresponding forecast of sales they enter the price and sales forecast in units for each SBU in the Proforma Regional Sales Revenue worksheet.

Next, the beginning inventory in units for the projected period (ending inventory of the prior period) and the

Developments in Business Simulation and Exoeriential Learning, Volume 34, 2007

projected cost per unit for each SBU are entered in the Proforma Regional Cost of Goods Sold by Product worksheet. The Proforma Cost of Goods Sold Worksheet is automatically updated using external cell references from these two worksheets.

Then, the Sales and Cost of Goods Sold sections of the Proforma Income Statement worksheet are also automatically updated from the above worksheets. However, data entries are required for the Operating Expense section and Non-operating Income sections of the Income Statement Worksheet as clearly indicated. A multiple bar chart of the sales, cost of goods sold, gross margin, operating expenses, operating income, non-operating income, taxable income, tax and after-tax earnings as well as a pie chart indicating the percentages of each of the operating expenses are provided.

Fourth, the Proforma Region 1, 2 and 3 Income Contribution Statement worksheets are automatically updated and require no data entry by the user. A multiple bar chart and pie chart (similar to the graphics in the Proforma Income Statement worksheet) are provided in each of these Proforma Regional Income Contribution worksheets and indicates the corresponding amounts for the specific region.

Next, each of T-accounts in the Proforma Analysis Worksheet are automatically updated via external cell references from the prior worksheets.

Adjusting transactions are made for (a) cash used to produce inventory, (b) inventory depleted when goods are sold, (c) property, plant and equipment reduction by the extent of depreciation (a non-cash expense) each period, and (d) retained income rising or falling corresponding to the profit or loss reflected in the Credit Income Summary T-account.

Then, the Proforma Cash Flow Statement worksheet is automatically updated from the Cash T-account in the Proforma Analysis Worksheet and requires no data entry. In addition, the user is provided with a pie chart that shows each proforma use of cash as a percent of total projected cash sources.

Lastly, the user needs to enter the Original Values in the Proforma Balance Sheet worksheet. The Adjust Values are automatically updated from the T-accounts in the Proforma Analysis Worksheet and the Proforma Balance Sheet is computed based on the Original Values and Adjust Values. This completes the generation of the set of proforma statements.

Based on a review of the projected results in these proforma statements, the competing participant teams may find it necessary to alter the strategy or modify the marketing mix of one or more of their SBUs prior to finalizing and submitting their better-informed decisions.

The second major step in proforma analysis is to: (a) monitor team performance, (b) compare the actual results on each line item with the projected (proforma) figures in each

of the proforma statements, (c) identify substantial deviations in performance between the actual and projected values, (d) calculate performance indices (actual / projected x 100), (e) understand underlying reasons for deviant (sub-standard) performance, and (f) take corrective action.

The actual values from the simulation results are entered in the actual value sections of the (a) Income Statement Performance Indices, (b) Cost of Goods Sold Performance Indices, (c) Region 1, 2 and 3 Income Contribution to Income Performance Indices, (d) Cash Flow Performance Indices, and (e) Balance Sheet Performance Indices worksheets.

The projected values in each of the above worksheets are automatically updated with external cell references from the proforma worksheets. The deviations (actual – projected) and performance indices (actual / projected x 100) are calculated for each line item in each of the worksheets. In addition, multiple bar graphs indicating the projected, actual and performance indices for each of the accounts are provided in each of the worksheets.

Competing participant teams can use the graphs or tables provided in the Performance Indices worksheets to (a) identify (red flag) accounts with substantial deviations, (b) understand underlying reasons for deviant (sub-standard) performance, and (c) take corrective action. The Proforma Analysis Package enables them to exercise marketing control over their marketing programs.

CONCLUSION

The Online Proforma Analysis Package is a user-centered learning tool that helps to prepare students for budgeting and marketing decision-making responsibilities in their future careers. Participants use the Proforma Analysis Package to generate a set of proforma statements, preview the projected results, modify the marketing budget if necessary, and finalize their marketing decisions. Later, they use the Proforma Analysis Package and Web-based simulation results to monitor and graph their actual v projected results, identify deviations, calculate performance indices, understand the underlying reasons for the deviations, and take corrective action, thereby exercising control over their marketing programs. The online MINISIM after-the-fact market test laboratory facilitates the integration of computers, the Internet and the World Wide Web into the marketing curriculum.

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