

ONLINE MARKETING CONTROL WITH THE STRATEGIC BUSINESS UNIT ANALYSIS PACKAGE

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ABSTRACT

The Online Strategic Business Unit (SBU) Analysis Package enables competing participant teams to assess the contribution of each SBU within their brand portfolio to the overall profit or loss of the company. Participants enter regional sales force time allocation and advertising expense as well as product R&D expenditure. The SBU sales revenue and cost of sales are extracted from the simulation results. Other SBU operating expenses are computed from regional operating expenses and company-wide salesforce salary and commission decisions extracted from the simulation results. Based on these inputs, the SBU Profit or Loss is computed. Cell comments clarify input variables used and calculations made.

INTRODUCTION

The Strategic Business Unit (SBU) Analysis Package is a decision support system that enables competing participant teams in the marketing simulation COMPETE (Faria 2006) to assess the strength and determine the contribution of each of their nine strategic business units (SBUs) to the overall profit or loss of the company. 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.

This Microsoft Excel-based package is based on the Product Profit spreadsheet in the Lotus 1-2-3-based COMPETE Analysis Programs (CAP) decision support package provided with the COMPETE (4th ed.) student manual (Faria et al. 1994; Nulsen et al. 1993; Nulsen et al. 1994). Prior to the development of this package, relevant data from the dos-text based simulation results were first identified by the user and then manually entered into the Lotus 1-2-3 based CAP disk spreadsheets prior to analysis. This procedure occasionally resulted in use of incorrect data and/or data entry error.

The new Excel-based SBU Analysis Package automatically extracts relevant data via external links from the Excel-version of the COMPETE simulation results. The Excel-version of the simulation results are generated by the instructor/administrator from the original dos-text based COMPETE simulation results. Later, the Excel-version of the simulation results are uploaded to the COMPETE Online Decision Entry System (CODES) repository for subsequent access by competing participant teams. Only relevant sales, cost and expense data that are needed to determine the contribution of the SBU to the profit or loss of the company are extracted from the simulation results.

This decision support package saves substantial time needed to identify and enter the relevant data and reduces the potential for data entry error.

DECISION SUPPORT SYSTEMS

Several scholars have commented on the value of including decision support software/systems in computer simulations (Keys and Biggs 1990; Teach 1990; Gold and Pray 1990, Wolfe and Gregg 1989). In addition, the literature is replete with references to the use and impact of decision support systems with computer simulations (Affisco and Chanin 1989, 1990; Burns and Bush 1991; Cannon et al. 1993; Fritzsche et al. 1987; Grove et al. 1986; Halpin 2006; Honaiser and Sauaia 2006; Markulis and Strang 1985; Mitri et al. 1998; Muhs and Callen 1984; Nulsen et al. 1994; Palia 1989, 1991; Peach 1996; Schellenberger 1983; Shane and Bailes 1986; Sherrell et al. 1986; Wingender and Wurster 1987; Woodruff 1992).

Decision support systems (DSSs) are defined as ...a collection of data, systems, tools, and techniques with supporting software and hardware by which an organization gathers and interprets relevant information from business and environment and turns it into a basis for...action (Little 1979; Burns and Bush 1991). In addition, they are defined as computer-based information systems that support the process of structuring problems, evaluating alternatives, and selecting actions for more effective management (Forgionne 1988). Further, they are described as the hardware and software that permit decision-makers to deal with a specific set of related problems by providing tools that amplify a manager's judgment (Sprague 1980).

DSSs used with business simulations yield several benefits. These include greater depth of understanding of simulation activity with resulting increase in planning (Keys et al. 1986), in-depth understanding of quantitative techniques as students visualize the results of their applications, sensitivity to weaknesses in techniques used, and experience in capitalizing on their strengths (Fritzsche et al 1987). Other benefits include minimization of paperwork and errors, error-free graphical representation of output, a competitive tool with increasing value as simulation progresses, and potential for participants to create their own DSSs (Burns and Bush 1991). In addition, DSSs enhance understanding of complex business relationships and provide additional value over time (Halpin 2006). Further, DSSs provide realism, relevance, literacy, flexibility and opportunity for refinement (Sherrell et al. 1986).

Some authors contend that combining an active student generated database in the form of a simulation game with a DSS

will result in improved decision making, lead to improved proactive rather than re-active strategic planning, and result in improved simulation game performance and enhanced learning (Muhs and Callen 1984). Others have reported no support for the premise that DSS usage improves small group decision making effectiveness (Affisco and Chanin 1989), and that DSS usage to support manufacturing function decisions resulted in decreased manufacturing costs and increased “earnings/cost of goods sold” ratio in the second year of play (Affisco and Chanin 1990).

Given the inconsistent findings with regard to the efficacy of DSSs reported in the literature, does DSS usage increase decision effectiveness and/or enhance learning? One scholar notes that while the DSS assists the decision maker, it does not make decisions, nor can it substitute for intelligent analysis and synthesis (Schellenberger 1983). In addition, as with other computer-based or experiential learning techniques, the effectiveness of DSSs or the decisions made are less important than the insights they generate. The level of insight generated depends heavily on the clear explanation of the purpose, significance, assumptions, usage, and limitations of the DSS and underlying concepts applied, by the instructor. In addition, the level of insight generated depends heavily on the debriefing process used by the instructor to crystallize student learning (Cannon et al. 1993).

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 of this decision support package is to provide participant teams the opportunity to apply the Iceberg Principle in exercising Marketing Control.

MARKETING CONTROL

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 (Bagozzi, et al, 1998; Churchill and Peter 1995; Dyer and Horman 1991; Kotler 2003; Kotler 1988; Lehman and Winer 1988; Lilien 1993; Lilien and Rangaswamy 2003; McCarthy and Perreault 1984; 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 marketing control in order to keep performance in line with objectives.

Marketing control involves setting standards, monitoring performance, identifying deviations from standards, understanding the underlying reasons for the deviations, and taking corrective action when necessary (Bagozzi, et al, 1998; Churchill and Peter, 1995; Cravens, 2000; Cravens et al. 1987; Czinkota and Kotabe, 2001; Dalrymple and Parsons, 1995; Kotler and Keller, 2007; Lamb and Hair, 2004; Peter and Donnelly, 1994). First, marketing managers decide which

aspects of marketing strategy (such as price, salesforce, advertising, quality) to monitor. Next, marketing managers set standards based on objectives in order to monitor and gauge performance. These standards may include sales targets, market share, profit contribution, as well as behavioral standards such as level of customer awareness. Then, marketing managers design feedback mechanisms where useful, relevant and timely information are used to evaluate the effectiveness of marketing activities. They use these feedback mechanisms to interpret the results of marketing programs, identify gaps between objectives and performance, understand the underlying reasons for the deviations in performance, and change strategy or tactics to eliminate or reduce the performance gaps.

Marketing managers identify which products’ sales are highest and why, which products are profitable, what is selling where, and how much the marketing process costs. They need to know what’s happening in detail in order to improve the bottom line. Traditional accounting reports such as income statements and balance sheets are too general to be of much help to marketing managers. For instance, a company may be profitable while 80 percent of its business comes from 20 percent of its customers or products. The other relatively less profitable 80 percent may remain undetected unless each product, region, or customer segment is analyzed in order to determine its profitability. This 80/20 relationship is fairly common and is often referred to as the 80/20 rule or principle (McCarthy and Perreault 1984; McCarthy and Perreault 1987; Perreault and McCarthy 1996).

Marketing control consists of sales analysis, performance analysis and marketing cost analysis. Sales analysis involves a detailed breakdown of the company’s sales records by geographic region, product, package size, customer size, type or class of trade, price or discount class, method of sale (mail, telephone, or direct sales), terms of payment (cash or charge), size of order, and or commission class. The purpose of sales analysis is to keep marketing managers in touch with their markets and to enable them to check their assumptions and hypotheses. Ignoring sales analysis can lead to poor forecasting and consequent poor decisions.

Performance analysis identifies exceptions or variations in planned performance. Marketing managers can compare one territory against another, against the same territory’s performance in the previous year, or against expected performance. The purpose of performance analysis is to improve operations by (a) monitoring performance, (b) comparing actual performance with projected performance, (c) identifying deviations (Actual – Projected) in performance, (d) calculating performance indices (Actual / Projected x 100), (e) understanding the underlying reasons for sub-par performance, and (f) taking corrective action. The salesperson, territory or other factors exhibiting poor performance can be identified, analyzed and corrective action taken. Outstanding performance can be analyzed, reasons for success identified, and extrapolated to other salespersons, territories or other factors. In addition to sales, other data such as miles traveled, number of calls made, number of orders, or cost of various tasks can be analyzed.

Marketing cost analysis (Kerin and Peterson, 2004; McCarthy and Perreault 1984; McCarthy and Perreault 1987;

Perreault and McCarthy 1996) enables the marketing manager to calculate the profitability of individual profit centers rather than total company profit. Marketing cost analysis involves the conversion of natural accounts based on how the money was actually spent into marketing functional accounts which indicate the function performed through the expenditure of funds (McCarthy and Perreault 1984; McCarthy and Perreault 1987; Perreault and McCarthy 1996; Pride and Ferrell, 1995). First, natural accounts (such as salaries, depreciation, taxes, advertising and other expenses) in the financial statements (such as income statement and regional income contribution statements) are converted to functional accounts which show the purpose for which expenditures are made. Then, the functional accounts are reallocated to customers, market segments, regions or products for which the amounts were spent. This reallocation of functional accounts enables marketing managers to assess the profitability of customers, market segments, territories or products.

Marketing cost analysis deals with three broad categories of costs. Direct costs such as salesforce salaries are directly attributable to the performance of marketing functions such as selling (a) of a specific product, (b) in a specific region, or (c) to a specific customer. Traceable common costs such as space rental costs for production, storage and selling, can be allocated indirectly, using one or several criteria (such as cost per square foot used for storage) to the functions that they support. Non-traceable common costs such as interest, taxes, and top management salaries, cannot be assigned according to any logical criteria. Hence, they are assignable only on an arbitrary basis (McCarthy and Perreault 1984; McCarthy and Perreault 1987; Perreault and McCarthy 1996; Pride and Ferrell, 1995).

Marketing cost analysis employs either the full-cost approach or the direct-cost approach. The full-cost approach includes direct costs, traceable common costs, and nontraceable common costs. All costs are included to provide an accurate profit picture. Since nontraceable common costs are allocated using arbitrary criteria, different criteria used can yield different results that affect profitability, promotion potential, and bonuses received. A cost-conscious unit can be adversely affected and discouraged if numerous costs are assigned to it arbitrarily. In order to eliminate such problems, the direct-cost approach, which includes direct costs and traceable common costs but not nontraceable common costs, is used. Yet, critics say that the direct-cost approach is not accurate as it does not include nontraceable common costs (McCarthy and Perreault 1984; McCarthy and Perreault 1987; Perreault and McCarthy 1996; Pride and Ferrell, 1995).

Marketing managers use sales analysis, performance analysis and marketing cost analysis in order to exercise marketing control. They assess the sales, profitability and marketing costs of each SBU in order to improve the bottom line. In this regard, they are aware of the significance of both the 80/20 Principle and the Iceberg Principle.

THE ICEBERG PRINCIPLE

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; Palia 2007; Perreault and McCarthy 1996; Pride and Ferrell, 1995). 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 SBUs. Based on a review of these 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.

A seemingly healthy person may suffer from a hidden cancer in the cardiac, circulatory, digestive, lymphatic, nervous or other system that could seriously impair overall long-term health. Similarly, a seemingly healthy business with adequate sales, assets, profits, and cash flow, may suffer from hidden losses or other problems in one or more SBUs that could seriously impair overall long-term performance.

Effective health maintenance requires periodic screening tests in order to determine whether there are any indicators of malfunctioning systems. Effective marketing managers monitor their results, identify SBUs that exhibit sub-par performance, understand the underlying reasons for sub-par performance, and take corrective action.

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 regions Region 1 (R1), Region 2 (R2) and Region 3 (R3) within the United States. These three products are a Total Spectrum Television (TST), a Computerized DVD/Video Editor (CVE) and a Safe Shot Laser (SSL). 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 COMPETE Online Decision Entry System (CODES) is a web-based simulation interface that enables competing participant teams with Internet access, to register their teams, enter and submit their decisions, and subsequently to retrieve and print out their results from a remote site (Palia, Mak and Roussos 2000).

The teams log in to the CODES website (Palia and Mak 2001, Palia, Mak and Roussos 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, Palia 2007, Palia 2008).

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 competing participant teams are provided with access to online strategic market planning (Palia et al. 2002), positioning (Palia et al. 2003), sales forecast model-building (Palia 2004), budgeting (Palia 2007), market testing (Palia and Roussos 2006), target profit pricing (Palia 2008) and other performance enhancing tools (Palia 2005) to facilitate user-centered learning (Palia et al. 2000).

THE STRATEGIC BUSINESS UNIT (SBU) ANALYSIS PACKAGE

The SBU Analysis Package (see Figure 1) extracts relevant data via external links on (a) Sales Revenue, (b) Cost of Sales, (c) Miscellaneous Expenses (Administrative + Depreciation + Interest + Consulting), (d) Regional Marketing Research Expenses, and (e) Regional Salesforce Hire/Train + Administrative Costs for the company from the respective Regional Income Contribution statement in the Excel version of the COMPETE simulation results. In addition, this package

Figure 1
SBU Analysis Worksheet

***** PERIOD # 1 ***** 17-Sep-08 *****			
-----> TST PROFIT ANALYSIS, REGION-1 ...:		Dollars	% Sales
Sales Revenue.....:		\$ 6,106,000	100.00%
Cost of Sales.....:		\$ 4,657,000	76.27%
Product Gross Margin.....:		\$1,449,000	23.73%
Expenses:			
Misc Exp (Admn+Deprc+Intrst+Consltng) ..:	\$ 266,000	\$87,780	1.44%
Regional Marketing Research Expense ..:	\$ 281,000	\$93,573	1.53%
SALES REPS--> 35 x QUARTERLY SALARY-->:	\$3,500		
x TST Time Alloc % (e.g., 30.).....:	30.00	\$36,750	0.60%
SF Commissions (Enter % (e.g., 3.5)..:	3.00	\$183,180	3.00%
Regional SF Hire/Train+Admin Costs....:	\$ 140,000	\$42,000	0.69%
Total TST Allocated SF Expenses		\$261,930	4.29%
Advertising: Broadcast.....:	\$600,000		9.83%
Print.....:	\$380,000		6.22%
Sales Promotion.....:	\$400,000		6.55%
Total Advertising Expense.....:		\$1,380,000	22.60%
Total U.S.A. R&D Expenditures for TST.:	\$800,000	\$304,000	4.98%
TOTAL OPERATING EXPENSES.....:		\$2,127,283	34.84%
SBU PROFIT.....:		(\$678,283)	-11.11%

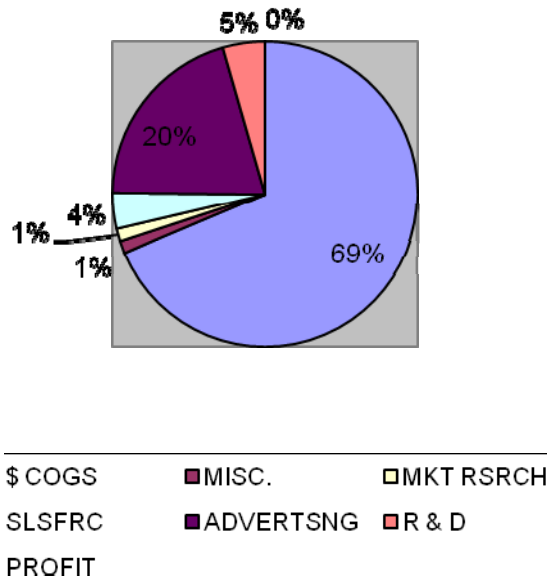
 LEGEND: Data Entry Cells
 Data Extracted from Results

Figure 2
SBU Analysis Worksheet

Data Extraction from COMPETE Results Workbook x.xls To SBU Analysis x Worksheet (x = Period #)						
MPETE SBU Analysis x Worksheet (x = Period #)			COMPETE Results Workbook x.xls (x = Period #)			
Account	Cell		Worksheet (Tab)	Page #	Account	Cell Ref.
Sales Revenue	V3	from ==>	Reg x Income Contribution (x = 1,2,3)	3,4 or 5	Sales (TST, CVE, or SSL)	G10, G11 or G12
Cost of Sales	V4	from ==>	Reg x Income Contribution (x = 1,2,3)	3,4 or 5	Cost of Sales (TST, CVE, or SSL)	E21, F21 or G21
Misc. Exp (Admin+Deprc+Intrst+Constng)	U7	from ==>	Reg x Income Contribution (x = 1,2,3)	3,4 or 5	Admin.+ Dep+Intrst+Consulting Fee	G26+G27+G36+G37
Regional Marketing Research Expense	U8	from ==>	Reg x Income Contribution (x = 1,2,3)	3,4 or 5	Marketing Research	G28
SALES REPS -->	R9	from ==>	EPS, Mkt%, SF Activity	8	Region 1, Region 2, or Region 3	D28, D29 or D30
QUARTERLY SALARY -->	U9	from ==>	Salesforce, Salaries	10	Company 1,2,3,4 or 5	F35,F36,F37,F38,F39
SF Commissions (Enter % (e.g., 3.5)	U11	from ==>	Salesforce, Salaries	10	Company 1,2,3,4 or 5	E35,E36,E37,E38,E39
Regional SF Hire/Train + Admin Costs	U12	from ==>	Reg x Income Contribution (x = 1,2,3)	3,4 or 5	Salesforce hire/train/turnover+admir	F31 + F32

Figure 3
SBU Analysis Marketing Operating Ratios Graph

**TST SALES RATIOS-REGION 1
(AS A PERCENT OF TOTAL \$SALES)**



extracts (a) Regional Salesforce Size, (b) Quarterly Salary, and (c) Percent Salesforce Commission from Market Research Reports in the Excel version of the simulation results. Participants enter (a) the Percent Regional Salesforce Time Allocation, (b) Broadcast, Print and Sales Promotion Advertising budgeted expenses, and (c) nation-wide Product R&D budgeted expense.

The relevant data are extracted from the COMPETE Results Excel workbook x.xls to the SBU Analysis x worksheet (where x = period number) as indicated in Figure 2. The Excel worksheet (tab), page number in the Excel-version of the COMPETE results printout, and cell references for each account are shown in the COMPETE Results Workbook x.xls table (on the right). The corresponding cell references for each account are shown in the SBU Analysis x worksheet table (on the left).

For instance, the Miscellaneous Expense (Administrative + Depreciation + Interest + Consulting) for Region 2 in period 6 (third data entry in cell U7 on the SBU Analysis 1.xls worksheet on the left in Figure 2) is computed by extracting and adding the Region 2 Administrative Expense (cell G26), Depreciation Expense (cell G27), Interest Expense (cell G36) and Consulting Fee (cell G37) from the Regional Income Contribution 2 Statement on page 4 of the COMPETE Results Workbook 6.xls (on the right in Figure 2).

Based on the extracted data and participant inputs, this package calculates and graphs the SBU-specific operating expenses and contribution to profit (see Figures 3, 4, & 5). The use of external links ensures relevant data are extracted from relevant sources (statements) in the simulation results and precludes data entry error. Cell formulae ensure that accounts

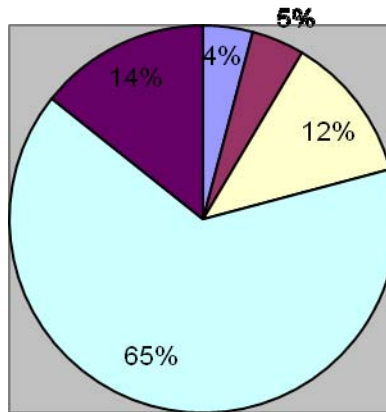
such as miscellaneous expenses are computed accurately from administrative, depreciation, interest, and consulting expenses extracted from the relevant regional income contribution statement. Cell comments (see Figures 6 & 7) clarify variables

used and calculations made.

The web-based Strategic Business Unit (SBU) Analysis Package Version 2.0 is accessible online to competing participant teams in the marketing simulation COMPETE. The

Figure 4
SBU Analysis Expense Breakdown Graph

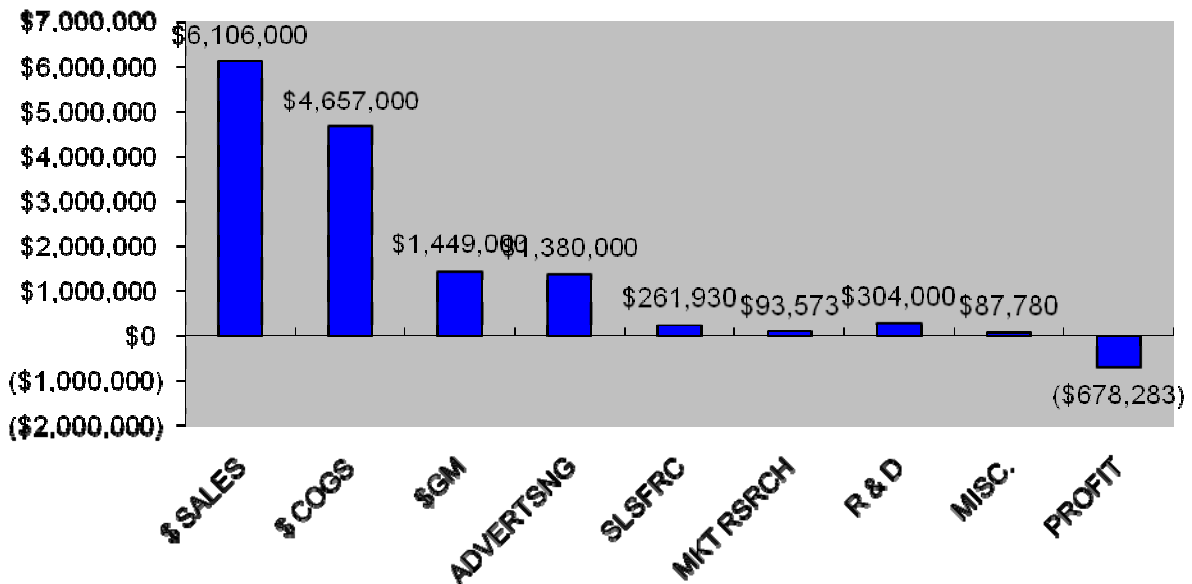
TST EXPENSE BREAKDOWN-REGION 1
(As a % of Total Expenses)



MISC. ■ MKT RSRCH ■ SLSFRC ■ ADVERTSNG ■ R & D

Figure 5
SBU Analysis Sales And Expenses Graph

TST SALES AND EXPENSES-REGION 1



SBU Analysis Package Version 2.0 is a set of twelve zipped folders SBU Analysis 1.zip, SBU Analysis 2.zip, ..., SBU Analysis 12.zip, one for each of the twelve decision periods (three years of competition). Each zipped folder consists of nine Excel workbooks, one for each of the three products (CVE, SSL, and TST) in each of the three regions (R1, R2 and R3). Each of the nine Excel workbooks has external links to the x.xls Excel version of sample COMPETE output for a specified period "x".

Each of the nine updated SBU Analysis Workbooks consists of a SBU Analysis worksheet and associated SBU Analysis graphs. External links in the SBU Analysis worksheets minimize user data entry requirements. SBU Analysis graphs are provided to enhance visualization and understanding of the relationships among the variables and to facilitate data analysis.

Each of the nine SBU Analysis workbooks is used to determine whether the SBU analyzed for the specified period x is contributing to the overall profit or loss of the company. The SBU Analysis workbook extracts SBU sales revenue, cost of sales, regional administrative expense, depreciation expense, interest expense, consulting fee, marketing research expense, beginning sales force, quarterly salary, commission, and regional salesforce hire/train and administrative costs from the Excel printout for the period being analyzed. The user can enter the SBU percent time allocation for each regional sales person, broadcast, print and sales promotion expenditure budgeted for each SBU, and the total product R&D expenditure. The SBU Analysis workbook allocates regional and product expenses extracted or entered by the user to the SBU analyzed, and determines the SBU profit or loss.

In addition, each SBU Analysis workbook calculates (see Figure 1) and graphs the marketing operating ratios (see Figure 3) for each SBU. This enables the user to compare each

marketing operating ratio such as gross margin to sales, advertising to sales, salesforce expense to sales, R&D expense to sales, profit to sales on a percentage basis with the corresponding industry marketing operating ratio provided for a fee by the trade association National Association of Electronics Manufacturers. Further, each SBU Analysis workbook graphs the percent expense breakdown (see Figure 4) and Sales, Expenses, and Profit in dollars (see Figure 5).

THE STRATEGIC BUSINESS UNIT (SBU) ANALYSIS PROCESS

First, the user downloads and unzips the SBU Analysis x.zip folder for a specified period "x". Next, the user logs in to CODES and downloads, renames and saves the Excel version of results for the same period "x" in the unzipped "C:\SBU Analysis x" directory. Then, the user opens and updates the selected workbook such as CVE R1 Analysis.xls with team data.

For instance, to update the CVE R1 Analysis.xls workbook with their team data, they first open the unzipped SBU Analysis x folder, then open the CVE R1 Analysis.xls workbook, and finally click "Update file" in the pop-up menu that appears.

The SBU sales revenue and cost of sales are extracted from the corresponding regional income contribution statement. The difference between the sales revenue and cost of sales yields the SBU gross margin. The regional administrative expense, depreciation expense, interest expense and consulting fee are then extracted and summed from the corresponding regional income contribution statement. One-third of the total is allocated to the SBU being analyzed since there are three products in each region. Next, the regional marketing research expense is extracted from the corresponding regional income contribution statement and one-third of this amount is allocated

Figure 6
SBU Analysis Worksheet With Cell Comments

***** PERIOD # 1 ***** 07-Oct-08 *****		*****	*****
-----> TST PROFIT ANALYSIS, REGION-1 ...:		Dollars	%
Sales Revenue.....:		\$ 6,106,000	100%
Cost of Sales.....:		\$ 4,657,000	76%
Product Gross Margin.....:		\$1,449,000	24%
Expenses:			
Misc Exp (Admn+Deprc+Intrst+Consltng)..:	\$ 266,000		
Regional Marketing ..:	\$ 281,000		
SALES REPS--> 35 x	\$3,500		
x TST Time Alloc %	30.00		
SF Commissions (Ente	3.00		
Regional SF Hire/Train+Admin Costs.....:	\$ 140,000		
Total TST Allocated SF Expenses			
Advertising: Broadcast.....:	\$600,000		
Print.....:	\$380,000		
Sales Promotion.....:	\$400,000		
Total Advertising Expense.....:			
Total U.S.A. R&D Expenditures for TST..:	\$800,000		
TOTAL OPERATING EXPENSES.....:			
SBU PROFIT.....:		(\$678,283)	-11.11%

LEGEND:	Data Entry Cells		
	Data Extracted from Results		

Figure 7
SBU Analysis Worksheet With Cell Comments

***** PERIOD # 1 ***** 07-Oct-08 *****	*****	*****
-----> TST PROFIT ANALYSIS, REGION-1 ...:	Dollars	% Sales
Sales Revenue.....:	\$ 6,106,000	100%
Cost of Sales.....:	\$ 4,657,000	76.29%
Product Gross Margin.....:	\$1,449,000	23.71%
Expenses:		
Misc Exp (Admn+Deprc+Intrst+Consltng) ..:	\$ 266,000	
Regional Marketing ..:	\$ 281,000	
SALES REPS--> 35 x Beginning Salesforce in ..:	\$3,500	
x TST Time Alloc % Region 1 extracted from ..:	30.00	
SF Commissions (Enter Salesforce Activity Report ..:	3.00	
Regional SF Hire/Train+Admin Costs.....:	\$ 140,000	
Total TST Allocated SF Expenses.....:		
Advertising: Broadcast.....:	\$600,000	9.83%
Print.....:	\$380,000	6.22%
Sales Promotion.....:	\$400,000	6.55%
Total Advertising Expense.....:		22.60%
Total U.S.A. R&D Expenditures for TST.:	\$800,000	
TOTAL OPERATING EXPENSES.....:	\$2,127,283	34.84%
SBU PROFIT.....:	(\$678,283)	-11.11%
*****	*****	*****
LEGEND:		
	Data Entry Cells	
	Data Extracted from Results	
*****	*****	*****

to the SBU under analysis.

The beginning sales force is extracted from the Salesforce Activity Report, the quarterly salary is extracted from the corresponding Market Research report and SBU percent time allocated to the product is entered by the user. Based on these inputs, the SBU salesforce salary expense is computed. Later, the salesforce commission is extracted from the Market Research report and multiplied by the SBU sales to yield the SBU salesforce commission expense. Next, the regional salesforce hire/train and administrative expenses are extracted and summed from the corresponding regional income contribution statement and this amount is allocated to the SBU under analysis.

Then, the user enters the broadcast, print and sales promotion expenditures budgeted for each SBU. These inputs are summed to yield the SBU advertising expense for the specified period. Then, the user enters the total product R&D expenditure from the decision form. The SBU Analysis workbook allocates the total product R&D expenditure to the SBU based on percent of population or sales in the specified region. Based on all the above inputs the SBU Analysis worksheet computes the total SBU operating expenses and determines the SBU profit or loss. Cell comments (see Figures 6 & 7) clarify variables used and calculations made. Color-coded cells specify where data are extracted and where they need to be entered by the user.

STRENGTHS AND LIMITATIONS

SBU analysis can help management identify which SBUs within the brand portfolio are not profitable. Once the relatively unprofitable SBUs are identified, marketing managers can use the marketing operating ratios calculated and graphed to analyze possible reasons for the deviation in performance. These

marketing operating ratios can be compared with the industry marketing operating ratios specified in the industry profit and loss statement provided for a fee by the trade association. Finally, marketing managers can track the firm's marketing operating ratios over time on a comparable basis.

Positive anecdotal student feedback was received from both undergraduate and graduate students at the end of the Fall 2008 semester. Some undergraduate students reported that the decision support packages were very useful and helpful in the Marketing Competition elective course. They indicated that the automatic extraction feature saved a "LOT" of time instead of having to type in all the numbers. They hoped it would continue to be used in the future as it definitely made a difference. Other undergraduate students reported that they used some dss packages such as sales forecasting for every decision, and others such as cost and efficiency analysis worksheets after the simulation competition was completed. One student admitted that he did not actualize the potential of the DSS. Some graduate students reported that the decision support packages on the course website were very helpful in marketing analysis during the Advanced Marketing Management elective course.

The Online SBU Analysis Package has some limitations. First, this DSS package allocates all regional expenses extracted from the COMPETE results equally among the three products. This allocation rule may not accurately reflect the emphasis that management decides to give each of the three products in their marketing program. In addition, the SBU Analysis Package allocates the total product research and development expense to each of the three regions based on percentage of population, a proxy for percentage of sales. Again, this research and development allocation may not accurately reflect the emphasis management assigns to each of the three regions in their marketing program.

Despite these limitations, the SBU Analysis Package is a

simple yet powerful web-based user-centered learning tool that extracts relevant data from the simulation results, precludes data entry error, and saves considerable time involved in identifying and entering relevant data. Yet, in order to maximize learning about the Iceberg Principle and Marketing Control, and actualize the learning potential of the SBU Analysis Package, the instructor needs to (a) explain the purpose, significance, assumptions, usage, and limitations of this dss package, (b) require inclusion of a sample analysis in a team report or presentation, and (c) test students on their understanding of the underlying concepts at the end of the semester. A part-time MBA honor student commented “Even though the semester is over and my MBA program is all finished, I will continue to visit your website to utilize the DSS...and I learned a lot of useful tools and concepts for my future application.”

CONCLUSION

The Online SBU Analysis Package is a user-centered learning tool that helps to prepare students for marketing decision-making responsibilities in their future careers. The package enables users to apply the Iceberg Principle in Marketing Control and determine whether each SBU in their brand portfolio is contributing to the overall company profit or loss. Participants use the SBU Analysis Package to determine if each SBU is profitable or not, and to compare their marketing operating ratios with those of the industry as well as their own marketing operating ratios over time on a comparable basis. This online SBU Analysis Package facilitates the integration of computers, the Internet and the World Wide Web into the marketing curriculum.

REFERENCES

- Affisco, John F. and Michael N. Channin (1989). “The Impact of Decision Support Systems on The Effectiveness of Small Group Decisions - An Exploratory Study,” *Developments in Business Simulation and Experiential Learning*, Vol. 16, 132-5. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- _____ and _____ (1990). “The Impact of Decision Support Systems On The Effectiveness of Small Group Decisions - Revisited,” *Developments in Business Simulation and Experiential Learning*, Vol. 17, 1-5. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Bagozzi, Richard P., Jose Antonio Rosa, Kirti Sawhney Celly and Francisco Coronel (1998). *Marketing Management*. Upper Saddle River, NJ: Prentice Hall.
- Burns, Alvin C. and Ronald F. Bush (1991). “Using DIS ‘n DAT as a Decision Support System for a Marketing Simulation Game,” *Developments in Business Simulation and Experiential Learning*, Vol. 18, 5-10. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Cannon, Hugh M, Philip G. Carroll and Brett L. Seamons (1993). “Using The IdeaFisher Idea Generation System as a Decision Support System in Marketing Strategy Courses.” *Developments in Business Simulation and Experiential Learning*, Vol. 20, 27-30. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Churchill, Gilbert A., Jr. and J. Paul Peter (1995). *Marketing: Creating Value for Customers*. Burr Ridge, IL: Irwin.
- Cravens, David W. (2000). *Strategic Marketing*, 6th ed. Burr Ridge, IL: Irwin McGraw-Hill.
- _____, Gerald E. Hills and Robert B. Woodruff (1987). *Marketing Management*. Homewood, IL: Irwin
- Czinkota, Michael R. and Masaaki Kotabe (2001). *Marketing Management*, 2nd ed. Cincinnati, OH: South-Western.
- Dalrymple, Douglas J. and Leonard J. Parsons (1995). *Marketing Management: Text and Cases*. New York: Wiley.
- Faria, Anthony J. (2006). *COMPETE: A Dynamic Marketing Simulation*, 5th ed. Windsor, CA: University of Windsor.
- _____, Ray O. Nulsen, Jr. and Dean S. Roussos (1994). *COMPETE: A Dynamic Marketing Simulation*, 4th ed., Irwin: Burr Ridge, Illinois.
- Forgionne, Guiseppe A. (1988). “Building Effective Decision Support Systems,” *Business*, 38 (1), 19-30.
- Fritzsche, David J. and Richard V. Cotter (1990). “Guidelines for Administering Business Games,” in: Gentry, James W. (1990) ed., *Guide to Business Gaming and Experiential Learning*, Chapter 6, Association for Business Simulation and Experiential Learning (ABSEL), pp. 74-89. East Brunswick/Kogan Page, London: Nichols/GP Publishing.
- _____, Grover W. Rodich and Richard V. Cotter (1987). “Integrating Decision Support Systems and Business Games,” *Developments in Business Simulation and Experiential Learning*, Vol. 14, 63-66. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Grove, Stephen J., Gregory H. Pickett and Robert H. Williams (1986). “The Subjective Side of The Decision Support System A Pitfall For The Panacea,” *Developments in Business Simulation and Experiential Learning*, Vol. 13, 170-173. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Halpin, Annette L. (2006). “A Decision Support System For Planning Sales, Production, and Plant Addition With Manager: A Computer Simulation,” *Developments in Business Simulation and Experiential Learning*, Vol. 33, 289-293. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Honaiser, Eduardo and Antonio Carlos Aidar Sauer (2006). “Decision Support System For Demand Forecasting in Business Games,” *Developments in Business Simulation and Experiential Learning*, Vol. 33, 223-231. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Kerin, Roger A. and Robert A. Peterson (2004). *Strategic Marketing Problems*, 10th ed. Upper Saddle River, NJ: Pearson, Prentice Hall
- Keys, J. Bernard and William D. Biggs (1990). “A Review of Business Games,” in: Gentry, James W. (1990) ed., *Guide*

- to *Business Gaming and Experiential Learning*, Chapter 5, Association for Business Simulation and Experiential Learning (ABSEL), pp. 48-73. East Brunswick/Kogan Page, London: Nichols/GP Publishing.
- _____, O. Maxie Burns, Thomas L. Case and Robert A. Wells (1986). "Performance and Attitudinal Affects of a Decision Support Package in a Business Game," *Developments in Business Simulation and Experiential Learning*, Vol. 13, 221-226. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Kotler, Philip (2003). *Marketing Management*, 11th ed. Upper Saddle River, NJ: Prentice-Hall.
- _____. (1988). *Marketing Management: Analysis, Planning, Implementation and Control*, 6th ed. Englewood Cliffs, NJ: Prentice-Hall.
- _____ and Kevin Lane Keller (2007). *A Framework for Marketing Management*, 3rd ed. Upper Saddle River, NJ: Prentice Hall.
- Lamb, Charles W., Jr., Joseph F. Hair, Jr. and Carl McDaniel (2004). *Marketing*, 7th ed., Mason, OH: South-Western.
- Lehman, Donald R. and Russell S. Winer (1988). *Analysis for Marketing Planning*. Plano, TX: Business Publications, Inc.
- Lilien, Gary L. (1993). *Marketing Management*, 2nd ed. San Francisco, CA: Scientific Press.
- _____ and Arvind Rangaswamy (2003). *Marketing Engineering: Computer-Assisted Marketing Analysis and Planning*, 2nd ed. Upper Saddle River, NJ: Prentice-Hall.
- Little, John D.C. (1979). "Decision Support Systems for Marketing Managers," *Journal of Marketing*, 43 (Summer), 9-26.
- Markulis, Peter M. and Daniel R. Strang (1985). "The Use of Decision Support Systems (DSS) and Operations Research/Management Science (OR/MS) Techniques to Enhance the Learning Experience of Students Participating in Computerized Simulations," *Developments in Business Simulation and Experiential Learning*, Vol. 12, 30-34. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- McCarthy, E. Jerome and William D. Perreault, Jr. (1984). *Basic Marketing*, 8th ed. Homewood, IL: Irwin.
- _____ and _____ (1987). *Basic Marketing*, 9th ed. Homewood, IL: Irwin.
- _____ and _____ (1993). *Basic Marketing: A Global-Managerial Approach*, 11th ed. Homewood, IL: Irwin.
- Mitri, Michel, Grigorios Karimalis, Hugh Cannon and Attila Yaprak (1998). "The Market Access Planning System (MAPS): Computer-Based Decision Support System For Facilitating Experiential Learning in International Business," *Developments in Business Simulation and Experiential Learning*, Vol. 25, 101-107. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Muhs, William F. and Richard W. Callen (1984). "Incorporating Decision Support Systems Into Management Simulation Games: A Model and Methodology," *Developments in Business Simulation and Experiential Learning*, Vol. 11, 261-266. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Nulsen, Ray O., Jr., Anthony J. Faria and Dean S. Roussos (1994). "The Use of Decision Support Systems With a Marketing Simulation: The Future is Now," *Developments in Business Simulation and Experiential Exercises*, Vol. 21, 169. Reprinted in *The Bernie Keys Library*, 1st edition [Available from <http://www.ABSEL.org>].
- _____, Dean S. Roussos and Anthony J. Faria (1993). "Using Lotus 1-2-3 to Complete a Triple Play In a Simulated Competition," *Developments in Business Simulation and Experiential Exercises*, Vol. 20, 132. Reprinted in *The Bernie Keys Library*, 1st edition [Available from <http://www.ABSEL.org>].
- Palia, Aspy P. (2007). "Online Budgeting and Marketing Control With the Proforma Analysis Package," *Developments in Business Simulation and Experiential Learning*, Vol. 34, 149-54. Reprinted in *The Bernie Keys Library*, 8th edition [Available from <http://www.ABSEL.org>].
- _____ (2005). "Online Cumulative Simulation Team Performance Package," *Developments in Business Simulation and Experiential Learning*, Vol. 32, 233-39. Reprinted in *The Bernie Keys Library*, 6th edition [Available from <http://www.ABSEL.org>].
- _____ and Dean S. Roussos (2006). "Online Market Test Laboratory with the MINISIM Program," *Developments in Business Simulation and Experiential Learning*, Vol. 33, 238-241. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- _____ (2004). "Online Sales Forecasting With the Multiple Regression Analysis Data Matrices Package," *Developments in Business Simulation and Experiential Learning*, Vol. 31, 53-7. Reprinted in *The Bernie Keys Library*, 5th edition [Available from <http://www.ABSEL.org>].
- _____ (1989). "Sensitivity Analysis With The COMPETE IFPS/Personal Student Analysis Package: A Marketing Decision Support System," *Developments in Business Simulation and Experiential Learning*, Vol. 16, 141-144. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- _____ (2008). "Target Profit Pricing With the Web-based Breakeven Analysis Package," *Developments in Business Simulation and Experiential Exercises*, Vol. 35, 197-204. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- _____ and Dean S. Roussos (2006). "Online Market Test Laboratory With the MINISIM Program," *Developments in Business Simulation and Experiential Learning*, Vol. 33, 238-41. Reprinted in *The Bernie Keys Library*, 7th edition [Available from <http://www.ABSEL.org>].
- _____ and Mak, Wai Keong (2001). "An Online Evaluation of The COMPETE Online Decision Entry System (CODES)," *Developments in Business Simulation and Experiential Learning*, Vol. 28, 188-91. Reprinted in *The Bernie Keys Library*, 2nd edition [Available from <http://www.ABSEL.org>].

- <http://www.ABSEL.org>].
- _____, Mak Wai Keong and Dean S. Roussos (2000). "Facilitating Learning in the New Millennium With The COMPETE Online Decision Entry System (CODES)," *Developments in Business Simulation and Experiential Learning*, Vol. 27, 250-1. Reprinted in *The Bernie Keys Library*, 1st edition [Available from <http://www.ABSEL.org>].
- _____, Jan De Ryck and Mak Wai Keong (2003). "Interactive Online Positioning With the Web-based Product Positioning Map Graphics Package," *Developments in Business Simulation and Experiential Learning*, Vol 30, 202-6. Reprinted in *The Bernie Keys Library*, 4th edition [Available from <http://www.ABSEL.org>].
- _____, Jan De Ryck and Mak Wai Keong (2002). "Interactive Online Strategic Market Planning With the Web-based Boston Consulting Group (BCG) Matrix Graphics Package," *Developments in Business Simulation and Experiential Learning*, Vol. 29, 140-2. Reprinted in *The Bernie Keys Library*, 3rd edition [Available from <http://www.ABSEL.org>].
- Peach, Brian E. (1996). "Enhancing Simulation Learning Through Objectives and Decision Support Systems," *Developments in Business Simulation and Experiential Learning*, Vol. 23, 61-67. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Perreault, William D., Jr. and E. Jerome McCarthy (1996). *Basic Marketing: A Global-Managerial Approach*, Chicago, IL: Irwin.
- Peter, J. Paul and James H. Donnelly, Jr. (1994). *A Preface to Marketing Management*, 6th ed. Burr Ridge, IL: Irwin.
- Pride, William M. and O.C. Ferrell (1995). *Marketing*, 9th ed. Boston, MA: Houghton Mifflin.
- Schellenberger, Robert E. (1983). "MANSYM III Decision Support System Demonstration," *Developments in Business Simulation and Experiential Learning*, Vol. 10, 69-71. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Shane, Barry and Jack Bailes (1986). "A Decision Support System For Capital Funds Forecasting," *Developments in Business Simulation and Experiential Learning*, Vol. 13, 216-220. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Sherrell, Daniel, Kenneth R. Russ and Alvin C. Burns (1986). "Enhancing Mainframe Simulations via Microcomputers: Designing Decision Support Systems," *Developments in Business Simulation and Experiential Learning*, Vol. 13, 207-211. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Sprague, Ralph H., Jr. (1980). "A Framework for the Development of Decision Support Systems," *Management Information Systems Quarterly*, 4 (December), 1-26.
- Teach, Richard D. (1990). "Designing Business Simulations," in: Gentry, James W. (1990) ed., *Guide to Business Gaming and Experiential Learning*, Chapter 7, Association for Business Simulation and Experiential Learning (ABSEL), pp. 93-116. East Brunswick/Kogan Page, London: Nichols/GP Publishing.
- Wingender, John and Jack Wurster (1987). "Oil And Gas Well Investment Analysis Using The Lotus 1-2-3 Decision Support System," *Developments in Business Simulation and Experiential Learning*, Vol. 14, 245-249. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].
- Wolfe, Joseph and J. Gregg (1989). "On the Efficacy of Managerial Decision Support Systems in a Business Gaming Environment," *Proceedings of the International Simulation and Gaming Association*, 102-109.
- Woodruff, Charles K. (1992). "A Graphics Application Extension For A Simulated Decision Support System Environment," *Developments in Business Simulation and Experiential Learning*, Vol. 18, 5-10. Reprinted in *The Bernie Keys Library*, 9th edition [Available from <http://www.ABSEL.org>].