

Developments In Business Simulation & Experiential Exercises, Volume 22, 1995

COMPARATIVE STATIC ANALYSIS WITH THE COMPETE PPA PACKAGE: A STRATEGIC MARKET PLANNING TOOL

Aspy P. Palia, University of Hawaii at Manoa

ABSTRACT

The COMPETE Product Portfolio Analysis (PPA) Package (Version 2.00) is used by participant teams in the marketing simulation COMPETE (Faria, Nulsen, and Roussos 1994) to formulate and implement a coherent marketing strategy and to control their marketing program. This package establishes inter-period scale anchor and circle position and size comparability in the growth share matrix (GSM) and growth gain matrix (GGM) displays generated. The inter-period comparability facilitates comparative static analysis of brand trajectories on the GSM and GGM displays used by the competing participant teams in strategic market planning.

INTRODUCTION

The COMPETE Product Portfolio Analysis (PPA) package is a pc-based marketing decision support tool that facilitates strategic market planning. This package enables competing participant teams in the marketing simulation COMPETE to use Product Portfolio Analysis developed by the Boston Consulting Group in strategic market planning (Palia 1991).

The primary purpose of this paper is to demonstrate the use of the revised COMPETE PPA package (Version 2.00) in comparative static analysis of the firm's product portfolio. The COMPETE PPA package is designed for use by competing participant teams in the COMPETE marketing simulation. This graphics application package has been tested and integrated successfully into the marketing curriculum at the University of Hawaii since the Fall 1990 semester.

Marketing decision support systems have been developed and used in department-level promotion mix planning (Allaway, Mason, and Brown 1987) and in advertising research (Knuckles 1987). The COMPETE PPA package permits participant teams to review the results of their decisions and to compare their own performance with that of their main competitors.

STRATEGIC MARKET PLANNING

Strategic market planning is a complex problem for multiproduct multimarket companies. These firms have numerous products serving several markets with differing potentials. Some products may be in a dominant position relative to competitors, while others may be in a weaker position. Each product will have its own strategy, and may

face several competitive products having their own marketing strategies. Some products may be profitable while others may need cash to finance growth or to fight competition.

Faced with this complex situation, the organization must allocate its limited resources among these products in order to optimize its overall performance (Abell and Hammond 1979). In order to optimize the overall performance of its portfolio of products, the organization first monitors and analyzes the performance of each of its strategic business units (products). This analysis is conducted by the firm in order to decide which strategic business units to build, maintain, harvest, and divest. One of the best known and widely used models for this purpose is the Boston Consulting Group Product Portfolio Analysis model (Kotler 1991).

The product portfolio analysis model developed by the Boston Consulting Group assigns strategic roles for each product based on the product's market growth rate and market share relative to competitors. These individual roles are then integrated into a strategy for the whole portfolio of products, taking into consideration the product portfolios of the main competitors.

The objective of the firm, when using the product portfolio approach, is to optimize the performance of the entire portfolio of products, while maintaining cash flow in balance. The growth share matrix (GSM) and the growth gain matrix (GGM) are used to display the relevant information about the firm's portfolio of products. These displays help to reduce the inherent complexity of the problem to manageable proportions. The heart of product portfolio analysis involves the creation and interpretation of the GSM and GGM displays for the firm and its main competitors.

Based upon GSM data, each firm's strategic business units (products) are classified into four categories.

First, "Cash Cows" are products that have a dominant share of slowly growing markets. These products provide cash to pay dividends and interest on corporate debt, cover overhead, finance R&D, and sustain the growth of other products. Second, "Dogs" are products with a low share of slowly growing markets. These products neither generate nor require substantial amounts of cash, and they are often called "cash traps."

Developments In Business Simulation & Experiential Exercises, Volume 22, 1995

Third, "Problem Children" are products with a low share of fast growing markets. These products require substantial resources to gain market share and to become strong members of the product portfolio. Finally, "Stars" are high-growth, high-share products whose present modest cash requirements will change to a large surplus when the market matures (Abell and Hammond 1979; Day 1986).

THE MARKETING SIMULATION COMPETE

COMPETE (Faria, Nulsen, and Roussos 1994) is a widely used marketing simulation designed to provide students with marketing strategy development and decision-making experience. Competing participant teams are placed in a complex, dynamic, and uncertain environment. Successful planning, implementation, and control of their respective marketing programs requires that each company constantly monitor trends in its own and competitive decision variables and resulting performance. Monitoring performance is facilitated by the use of spreadsheet and "C" graphics software packages.

The COMPETE marketing simulation has been used at the University of Hawaii at Manoa undergraduate (BBA), graduate (MBA), and post-graduate levels (Executive MBA Program and Pacific Asian Management Institute International Business Program) and at the Japan-America Institute of Management Science. In addition, this simulation and the COMPETE PPA Graphics Package have been used overseas in India, Japan, Malaysia, the P.R.C., Singapore, Taiwan and Thailand.

COMPETE (PPA) PACKAGE

The COMPETE PPA package is a pc-based marketing decision support tool that exposes participant teams to the operation of a marketing information system. The data entered are transformed into relevant user information by the COMPETE PPA package. The resulting product portfolio analysis displays enable the competing participant teams to analyze the strengths and weaknesses of their own portfolio of strategic business units and those of their main competitors. Based on this analysis, the participant teams can formulate their own marketing strategy.

This pc-based marketing decision support system is written in Borland's Turbo C (Version 2.01) programming language. The COMPETE PPA package (Version 2.00) graphics application disk will work on any IBM PC/XT/AT/P52 or compatible clone running IBM-DOS or MS-DOS version 3.2+. The program requires 640k bytes of random access memory (RAM) and a color graphics adaptor.

Participant teams input data on (1) sales in units and (2) price for each product in each region for their own firm and for each of their competitors. Based on these data, the COMPETE PPA worksheet computes the (1) relative market share (RMS), (2) industry growth rate (IGR), (3) brand growth rate (BGR), and (4) sales volume, for each of the strategic business units of each of the five competing firms. Next, these intermediate outputs are entered into the COMPETE PPA package graphics application disk. Based on the RMS, IGR, BGR, and sales volume entered, the COMPETE PPA package graphics application disk generates the GSM and GGM on the CGA monitor screen (in high-resolution mode) for the firm requested. Participant teams may use the COMPETE PPA package graphics application disk to obtain hardcopy (printed output), if the computer is attached to an IBM-compatible graphics printer.

GSM and GGM displays are generated at the end of the second and third year of operations and permit the participant teams to conduct static, comparative static, and dynamic analyses of their own product portfolio and the product portfolios of their main competitors. By superimposing the display at the end of the third year of operations on the display at the end of the second year, the participant teams can determine the trajectories (direction and degree of movement) of each of their products. Competitor product trajectories can also be generated and analyzed.

The COMPETE PPA package (Version 1.00) generated GSM and GGM displays for both the year 1-2 and the year 2-3 periods (Palia 1991). The Relative Market Share (RMS), Industry Growth Rate (IGR), and Brand Growth Rate (BGR) axes were auto-scaled for each of the two periods. In addition, the circle sizes were auto-scaled based on the data entered for the Regional Sales Revenue (RSR) of each strategic business unit (SBU) for each of the two periods. As the data entered for the year 1-2 and year 2-3 periods differ, the axes anchors (minimum and maximum values), and SBU circle positions and sizes on the GSM and GGM displays for the two periods were not strictly comparable. This drawback hindered comparative static analysis of brand trajectories over the three years of operation.

The revised COMPETE PPA package (Version 2.00) graphics application disk generates GSM and GGM displays for both the year 1-2 and year 2-3 periods with comparable RMS, IGR and BGR scale anchors and comparable SBU circle positions and sizes. This interperiod RMS, IGR, BGR scale anchor comparability and SBU circle position and size comparability facilitates comparative static analysis of brand trajectories over the three years of operation.