ENHANCING EXPERIENTIAL LEARNING VIA PHASED SIMULATION DEBRIEFING

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ABSTRACT

Phased intermediate and final simulation debriefing using the End Game Performance package turbocharges participant engagement and enhances learning. Final simulation debriefing, the culmination of the participant learning experience, follows phased intermediate briefing using a problem-based learning approach on marketing concepts, performance determinants, and marketing decision support system (DSS) package usage. Competing participant teams use marketing decision support packages to monitor and analyze team performance, identify and understand reasons for sub-par performance, and make better-informed decisions. Phased debriefing reduces uncertainty, improves understanding of underlying performance determinants, builds confidence and engagement, and motivates teamwork to identify problems, take corrective action, and exercise marketing control.

INTRODUCTION

The most important part of the simulation learning experience is the team and class discussions that follow the experiential exercise (Rollag & Parisse, 2005). Debriefing discussions are designed to guide students who have participated in an experiential business simulation or exercise through a reflective process about their learning (Lederman, 1992). Yet, most discussions on simulation debriefing, which acknowledge its importance, fail to specify its objectives or debriefing techniques, and only partially explain the debriefing process (Markulis & Strang, 2003). A panel discussion at the 2004 ABSEL Conference highlighted simulation debriefing objectives, timing, structure and process, in order to foster debriefing research and the development of guidelines for effective simulation debriefing (Fritzsche et al., 2004).

The primary purpose of this paper is to present a phased approach to simulation debriefing based on insights derived from a review of the literature on experiential learning, business simulations and experiential exercises/games. This augmented approach to debriefing draws on (a) Kolb's model of experiential learning (Kolb, 1984), (b) Bloom's taxonomy of educational objectives (Bloom, 1956), (c) Lederman's work on debriefing (Lederman, 1992), (d) Peters and Vissers classification model for debriefing simulation games (Peters & Vissers, 2004), (e) Argyris' Organizational Development Intervention Model (Argyris, 1970), (f) Hoover's treatise on recent trends in complexity avoidance and narcissism (Hoover, 2011), and (g) Hogan and Pressley's work on scaffolding (Hogan and Pressley, 1997).

This phased simulation debriefing approach is appropriate for relatively complex capstone strategy computer simulations with closed objectives (Peters & Vissers, 2004) that (a) stretch over several weeks, (b) focus on quantitative objective performance measures such as profit and market share, and (c) use decision support system (DSS) packages to operationalize business concepts. It may not be suitable for relatively simple experiential exercises/games with open objectives (Peters & Vissers, 2004) that (a) are of relatively short duration, (b) focus on a few qualitative subjective concepts such as leadership, motivation, and other organizational behavior topics, and (c) debrief participants immediately following the experiential exercise for a significant period relative to the length of the exercise.

The proposed comprehensive phased debriefing approach relies on the usage of DSS packages that are directly tied to the course mission, learning objectives and outcomes, and the computer simulation decisions and results. The mission of the functional capstone Marketing Strategies course is to (a) develop strategic market planning and marketing management skills, (b) apply strategic market planning to improve overall business performance, (c) improve strategic thinking based on strategic analysis (Aaker, 2014; Aaker & Moorman, 2018), and (d) develop written and oral communication skills. In addition, the writing-intensive Marketing Strategies course stresses learning through writing.

First, a review of the literature on experiential learning and usage of computer simulations in the field of management includes coverage and application of (a) Kolb's model of experiential learning (Kolb, 1984), (b) Bloom's taxonomy of educational objectives (Bloom, 1956), and (c) Hogan and Pressley's work on scaffolding (Hogan and Pressley, 1997). This is followed by a review of the literature on debriefing experiential exercises and simulations which includes (a) Lederman's work on debriefing (Lederman, 1992), and (b) Peters and Vissers classification and insights on debriefing simulation games. The proposed phased simulation debriefing approach also draws on (a) Argyris' Organizational Development Intervention Model (Argyris, 1970), and (b) Hoover's treatise on recent trends in complexity avoidance and narcissism (Hoover, 2011). Next, the significance of DSS package usage in computer simulations is followed by (a) a brief summary of the marketing simulation, (b) description, usage, process, and strengths and limitations of the End Game Performance package, and (c) suggestions for improvement.

EXPERIENTIAL LEARNING

Management skills are taught and management perspectives developed and enhanced through education (Doh, 2003). Capstone strategy courses integrate prior coursework, provide an integrated view of the corporation, and enable students to think and

make decisions like senior managers (Rapert et al, 2004). While strategic concepts can be taught by lecturing, strategic management is more effectively taught by experiential learning methods via case studies (Dean and Fornaciari, 2002) or computer simulations (Kayes, 2002) which use simulated environments that reflect real life (Parks and Lindstrom, 1995). Lecturing involves a transfer of knowledge based on conclusions drawn from the literature (Whetten and Clark, 1996), but does not generate a practical understanding of managerial problems (Nadkarni, 2003). Cases enable students to participate in complex "real world" decisions (Dean and Fornaciari, 2002). They bridge the gap between theory and practice, and expose students to real-life issues (Osigweh, 1989). Yet, cases are inadequate in developing practical integration skills. Professor control hinders experience-based learning (Argyris 1980). Thus, lectures and cases need to be supplemented with student-centered experience based on practicing integral decision making (Kachra and Schnietz, 2008).

KOLB'S MODEL OF EXPERIENTIAL LEARNING

In contrast to lectures, experiential learning depends on the process, rather than the content (Kolb, 1984). Participants' analysis and reflection on the subject result in learning. First, they participate in synthetic (designed) or natural "concrete experiences." Then, they engage in "reflective observation" upon their experiences. Later, they integrate their observations into theories in the "abstract conceptualization" phase. Finally, they use their new theories to solve problems in the "active experimentation" phase. Kolb (1984) believed that people learned and changed their view of "the truth" over time as they repeatedly moved through the above four phases (Albertson, 1995). Experiential learning theory defines learning as knowledge creation through transformation of experience (Kolb, 1984) as students apply previously accumulated and recently acquired knowledge while completing the exercise (Walter and Marks, 1981). In addition, experiential learning is more effective as the subject is presented in a manner that stimulates learners' emotions in a safe atmosphere (Bowen, 1987). Further, cooperative learning augments student learning (Harton et al., 2002). Learners build greater confidence in knowledge gained through experience with active learning. Given adequate processing time for the learned material, students may realize changed cognitive structures through experience (Keys and Wolfe, 1990) enabling them to generate their own mental models (Argyris, 1990). Simulation game participants (a) experience decision making in a complex, dynamic and uncertain environment under time pressure, (b) reflect on the results of their decisions, (c) identify problems, (d) understand the underlying reasons, and (e) conceptualize and apply abstract theories or frameworks to improve performance. In so doing, simulation participants learn from experience.

The experiential learning process is summarized by five propositions about learning from experience. First, experience is the foundation of and the stimulus for learning. Second, learners actively construct their experience. Third, learning is a holistic process. Fourth, learning is socially and culturally constructed. Fifth, learning is influenced by the socioemotional context in which it occurs (Boud, et al., 1993). Experiential learning involves placing participants in an "experiential activity." Experiential activities range from "very simple board games that take less than an hour to play" to "complicated exercises that cast participants in the roles of team members in a make-believe company" (Geber, 1994). They are used to teach concepts such as organizational communication, quality management principles, teamwork, and group problem solving (Albertson, 1995). Simulation game participants actively construct their own holistic experience and learn through and with their team members as they navigate the socioemotional simulation environment.

BLOOM'S TAXONOMY OF EDUCATIONAL OBJECTIVES

Bloom's taxonomy of educational objectives in the cognitive domain (Bloom, 1956) relies on a mastery learning approach (Bigge, 1982). It uses observed student behavior to infer the level of student achievement. The six-level hierarchical classification system, moves from simple to more complex levels of cognitive development: knowledge, comprehension, application, analysis, synthesis, and evaluation.

Knowledge, the lowest level of cognitive development, is the recall of previously learned material, of specific facts or of complete theories. All that is required is the bringing to mind of the appropriate information, the lowest level of learning outcomes in the cognitive domain. Knowledge is evidenced by definitions, outlines, recall exercises and requests to reproduce knowledge acquisition (Bloom, 1956; Grondlund, 1970). Participation in a complex marketing simulation assumes the student's ability to operate at the taxonomy's knowledge level. Participants choose and recall appropriate functional knowledge in marketing, accounting, corporate finance, management and other functional areas to process the information in the simulation manual, decisions and results.

Comprehension, the second level of cognitive development, is an awareness of what the material means. It allows one to demonstrate understanding of a work based on one's knowledge of it. Activities that indicate comprehension include comparison and contrast, paraphrasing, extension, and summary (Bloom, 1956; Grondlund, 1970). Simulation participants use the recalled functional knowledge of marketing to give meaning to the situation analysis of the information provided in the simulation manual about their past performance, cost of production, products, product life-cycle stages, regional markets, and demographic, psychographic, media and purchase behavior characteristics of the consumers in each region.

Application, the third level of cognitive development, uses data, principles, and theory learned to answer a question in a new environment. It shows one can apply what was learned and understood. Application is evidenced by conceptual activities such as application, classification, development, modification, organization, and prediction (Bloom, 1956; Grondlund, 1970). Simulation participants set goals, formulate strategy, forecast demand, and plan, implement and control their marketing program. They introduce and apply theories on segmentation, targeting, differentiation and positioning, and elements of the marketing mix to compete effectively.

Analysis, the fourth level of cognitive development, breaks down material into its constituent parts so that its organizational structure may be understood. It includes breaking down, categorizing, classifying, differentiating, and requires understanding of the material, its content, and its structure (Bloom, 1956; Grondlund, 1970). Simulation participants analyze their customers, product

markets, competitors, and non-controllable marketing environments, make decisions in a dynamic, complex and uncertain environment under time pressure, and analyze simulation results. They classify and break down their results by product, by market, and by strategic business unit (SBU), in order to better understand and improve the performance of their company.

Synthesis, the fifth level of cognitive development, recombines the parts created during analysis to form a new entity, different from the original one. It is evidenced by creative behaviors such as development of a research proposal or a scheme for classifying information, and the creation of new patterns of structures (Bloom, 1956; Grondlund, 1970). Simulation participants, based on their preceding analysis of the results as well as external research on the customers, market and environment, create, communicate, distribute and capture value from targeted heavy-user market segments. They develop a marketing program for their product portfolio, prepare a strategic market plan report, and present a comprehensive company report and proposed marketing plan.

Evaluation, the highest level of cognitive development, shows the ability to judge the value of material for a given purpose based on definite criteria and rationale. It includes decision-making and selection. It contains elements of all the other categories. For instance, synthesis is critical to evaluation. It is evidenced by assessments, critiques, and evaluations (Bloom, 1956; Grondlund, 1970). Simulation participants use marketing DSS packages to forecast demand, price, position, and develop strategic roles for each SBU in their SBU portfolio. In addition, they monitor their performance relative to goals, identify deviations in performance, understand the underlying reasons for subpar performance, and take corrective action. They identify problems, select appropriate DSS packages to investigate underlying reasons, and develop and prioritize action steps in order to improve company performance.

SCAFFOLDING

College and university-level management educators use Bloom's taxonomy to assess and communicate student level of achievement, and to help students take increased control of their learning (Athanassiou et al., 2003). They use the taxonomy to assess student achievement and communicate effectively with students about their achievement in the class, to help students take increased control of their learning, and use it as a scaffolding device to enhance learning. Scaffolding is teaching that provides support to allow learners to learn for themselves. It provides individual students with intellectual support so they can function at the cutting edge of their cognitive development (Hogan and Pressley, 1997).

Simulation participants experiment with different product, pricing, promotion, and distribution strategies in order to improve their performance. Based on a situation analysis, they formulate a mission, set goals, develop a marketing program consisting of individual marketing strategies and plans, monitor performance, identify deviations from preset goals, understand the underlying reasons, take corrective action, and thereby exercise marketing control. Phased simulation debriefing using a problem-based learning approach serves as a scaffolding device to respond to team needs as problems arise. This approach enhances learning throughout the semester, and provides support to permit simulation participants to learn for themselves. Simulation participants take increased control of their learning as they experience both success and failure, and as they commit and learn from their own mistakes and the errors of their competitors.

ARGYRIS' ORGANIZATIONAL DEVELOPENT INTERVENTION MODEL

Lasting commitment to organizational change and personal developmental learning is facilitated by the three sequential steps of the Argyris' model: (a) generation and use of valid information, (2) free, informed choice based on the information produced, and (b) the consequent outcome of internal commitment to organizational change and personal developmental learning (Argyris, 1970; Hoover et al., 2016). Based on the Argyris model, if valid information generation and free, informed choice are not present, lasting commitment to organizational change and personal developmental learning, are improbable. Consequently, recent trends in complexity avoidance and narcissism may hinder the process of personal developmental learning. The challenge is to get potential learners aligned with the information relevant to their learning. Failure to do so will result in simulation participants making decisions based on incorrect, faulty, or incomplete information. Narcissists are particularly challenged to generate and use valid information. Consequently, they tend to resist organizational change and personal developmental learning (Hoover et al., 2016). The End Game Performance and other DSS packages provide potential learners with user-friendly and valid information.

BUSINESS SIMULATIONS

Experiential training has several benefits, including (a) improved transfer of learning to the work venue, (b) well-suited for teaching participants how to respond to change, (c) relatively risk-free environment, (d) higher participant involvement and motivation, (e) ability to simultaneously manipulate several variables, and (f) immediate feedback (Hoberman and Mailick, 1992; Geber, 1994), (g) ability to teach teamwork and problem solving (Hemmasi and Graf, 1991), (h) unique contribution to the managerial skill set (Teach and Govahi, 1993), and (i) close relationship between business game experiences and outcomes such as income and organizational position (Wolfe and Roberts, 1993). Yet, experiential training has potential drawbacks including (a) synthetic experiences are different from the real world, (b) simulations may lack the realism necessary to motivate participants, (c) debriefing may be poorly conducted, and (d) participants may make hasty generalizations based on a single experience (Hoberman and Mailick, 1992; Geber, 1994).

Experiential learning is ideal for teaching business strategy (Thomas, 1998; Kayes, 2002). Strategy simulations facilitate complex functional integration. Participants analyze data, identify and solve problems and make decisions (Keys and Wolfe, 1990). Simulations expose students to complex managerial decisions in a simulated environment that reflects real life (Parks and Lindstrom, 1995).

SIMULATION PROS AND CONS

While managerial concepts are better understood via simulations (Gopinath and Sawyer, 1999; Zantow et al., 2005), cases remain the primary method for teaching business strategy, as simulations have shortcomings from both teaching and learning perspectives. Simulations are costly pedagogical tools (Keys and Wolfe, 1990) which cost the school and students extra fees. Instructors need additional time and effort to learn the simulation, brief students, run the simulation, analyze results, debrief students, and answer questions. Educators using simulations may experience control problems (Kachra and Schnietz, 2008) such as inability to guide students under time pressure, or when facing unforeseen situations resulting from hyper-competition. This may decrease the professor's reputation and have a negative impact on teaching evaluations.

Thought provoking simulation games help instructors to stimulate students' interest in the learning material, and generate involvement and enthusiasm in the learning process. Yet, over-emphasis on the simulation may disrupt learning objectives as participants attempt to decode the simulation algorithm rather than understand the nature of the relationships among different elements in strategic decision making. While simulations foster the development of decision-making skills under time pressure, in a dynamic, complex and uncertain environment, increase computer skills, develop team building, and increase negotiation skills (Knotts and Keys, 1997), these are auxiliary skills, not core objectives of the strategy course.

Another limitation is the automatic provision of financial statements and other data reports. Students need to know how the simulation model processes their decisions and the basis on which their financial statements and data reports are prepared. Some decisions such as overdraft loans are made by the simulation without any financial planning by the participants. Strong performance on the simulation may not reflect mastery of skills needed to manage a firm. Weak performance, on the other hand, does not necessarily imply failure to learn (Wolfe, 1997). Finally, as simulation complexity increases in order to more closely reflect reality, learning from the experience becomes more challenging (Wheatley et al., 1988).

Despite these drawbacks, simulation games help participants experience and learn about managing organizations. They are used in most degree programs (Faria, 1998, 2001; Keys & Wolfe, 1990; Lane, 1995; Thompson, Purdy & Fandt, 1997). Carefully crafted team-based business simulations, unlike lectures and business cases, enable students to confront the complexity, ambiguity, and interpersonal tension that exist in real-life management. They are, in effect, live cases that participants and instructors can subsequently analyze and discuss to deduce principles that they can apply in future (Rollag & Parise, 2005). Strategy simulations effectively introduce business concepts, instill a cross-functional understanding of business, build team skills, enable better translation of data into information, and improve decision-making skills (Kulkarni & Sivaraman, 2013). Participants can develop leadership, decision-making and effective communication skills (Silas et al., 2009). They often lead to superior learning outcomes compared to other training methodologies (Wolfe 1997).

LEARNING VIA BUSINESS SIMULATIONS

The experiential learning process involves active experimentation, concrete experience, reflective observation, and abstract conceptualization (Kolb, 1984). Reflection is a key component of the learning process, as simulation participants learn from reflecting on the experience, not from the experience itself (Thiaragajan, 1994). In addition, learning involves both analysis by participants and input from the instructor, and has added impact with adequate processing time and a cognitive map for understanding the experience (Bowen, 1987). Consequently, in a simulation, reflection involves (a) participants receiving feedback (simulation results based on decisions), (b) contemplation of the results, (c) debriefing process with team members, competitors, and the instructor/administrator, and (d) analysis/planning process resulting in plans, reports, and/or presentations (Gosen, 2004).

DEBRIEFING EXPERIENTIAL EXERCISES & SIMULATIONS

The most important part of the learning experience is the team and class discussions that follow the experiential exercise (Rollag & Parisse, 2005). The teams are assembled, the winners congratulated, and the teams are asked to prepare a 10-minute team presentation highlighting their strategies, tactics, outcomes, and lessons learned thereby respecting the wisdom and voice of the participant (Baker, Jensen & Kolk, 1997). "Learning is accomplished by responding to questions posed by the debriefer and using their experiences and analyses of those experiences as the basis for their answers." (Lederman, 1992). Facilitators encourage participants to (a) "publish" what they experienced (share observations), (b) "process" what they learned (discuss patterns/ dynamics), (c) "generalize" from their learning (infer "real world" principles, and (d) "apply" what they learned (plan future behavior) (Pfeiffer and Jones, 1980). These steps in the Pfeiffer and Jones "Experiential Learning Cycle" correspond to the steps in Kolb's model of experiential learning (Albertson, 1995).

Feedback and debriefing, not just the simulation game, facilitate real learning (Crookall, 2010). Participants explore connections among their experiences, existing knowledge, and defined learning objectives (Peters & Vissers, 2004). Simulation results can be used to introduce, explain, discuss and validate concepts during the initial decision periods (Kulkarni & Sivaraman, 2013). Competing participant teams can be encouraged to set goals, monitor performance, identify problems, understand underlying reasons for subpar performance, and take corrective action in order to improve team performance.

Most discussions on debriefing have focused on experiential exercises and games (Markulis & Strang, 2003) and are limited to its importance and suggested debriefing techniques (Fritzsche et al., 2004). A recent search of the term 'debrief' in the Bernie Keys Library yielded 85 articles in the *Developments in Business Simulations and Experiential Exercises/Learning* database. There is an increasing trend in debriefing since the 1970s. 'Debrief' is mentioned in 4 papers in the 1970s, 10 papers in the 1980s, 21 papers in the 1990s, 25 papers in the 2000s, and 25 papers since 2010. Sixty-four of the 85 articles mention debriefing in context with experiential exercises. Only 13 papers (Cannon, Yaprak and Mokra, 1999; Caruso, 2018; Chisholm & Warman, 2005; Fekula, 2008; Fisk, Fisk & Zoeckler, 1986; Gentry et al., 1995, 2002; Gentry & Pickett, 1982; Goosen et al., 2001; Jackson & Taylor, 1998; Kulkarni & Sivaraman, 2013; Szot, 2017; Teach & Patel, 2007) mention debriefing in context with business simulations. The

remaining 8 papers were meta studies (Butler, 1999; Gosen, 2004) on debriefing (Fritzsche et al., 2004; Markulis & Strang, 2003), debriefing formats (Ward, 1979), debriefing insights (Warrick, 1978), and post experience techniques (Papenhausen, 2016).

Topics covered in simulation papers that indicate debriefing include developmental marketing (Cannon, Yaprak & Mokra, 1999), business analytics (Caruso, 2018), corporate social responsibility (Chisholm & Warman, 2005), services marketing (Fisk, Fisk & Zoeckler, 1986), curiosity gap model (Gentry et al., 2002), simulation mistakes (Gentry et al., 1995), global business (Goosen et al., 2001); marketing channels (Jackson & Taylor, 1998), introduction to business (Kulkarni & Sivaraman, 2013), project management (Szot, 2017), and learning and assessment (Teach & Patel, 2007). Debriefing is indicated in 64 experiential exercise papers that include board games and cover a wide variety of topics. These include assessment, awareness & self-efficacy, production and demand, budget allocation, economics, ethical decision making, human resource management, information literacy, international exchange, international search, international management, leadership, management, marketing channels, change management, communication, emotional intelligence, group decision-making, intergroup interaction, leadership, mediation, motivation, cross-cultural negotiations, organizational climate, personal power, quality management, personal financial planning, project management, strategy dynamics and student civility.

Experiential exercises and board games are often relatively brief (one or two hours) and focus on a relatively few qualitative, subjective concepts such as leadership, motivation, human resource management, and organizational behavior. On the other hand, complex computer simulation games frequently involve multiple decision periods that stretch over several weeks, a multitude of decision variables, and quantitative, objective measures of performance such as profit, market share, sales volume, quality, cost, and efficiency. In addition, the time taken to debrief an experiential exercise is typically a significant portion of the total time involved. On the other hand, the time taken to debrief a simulation experience at the end of the semester is typically a much smaller proportion of the total time involved. Accordingly, debriefing a simulation game that (a) covers a relatively large number of decision and performance variables and concepts, and (b) stretches over several weeks, in (c) a relatively short period of time is more challenging than debriefing an experiential exercise that (a) has a limited number of qualitative, subjective concepts, (b) is typically completed in one or two hours, (c) immediately following the exercise. Consequently, debriefing procedures for simulation games need to reflect these significant differences. Yet, debriefing tends to be neglected in the simulation literature

EXHIBIT 1
TEAM COMPARISON

Team Comparison

	Team 1	Team 2	Team 3	Team 4	Team 5
EPS	4	2	3	1	
ROTA	4	2	3	1	
ROE	4	2	3	1	
NPM	4	2	3	1	
SATO	3	2	4	1	
Retained Earnings	4	2	3	1	
Market Share - TST	2	2	4	1	
Market Share - CVE	4	2	3	1	
Market Share - SSL	4	3	2	1	
Quality Index - TST	1	3	3	1	
Quality Index - CVE	2	2	2	1	
Quality Index - SSL	1	1	1	1	
Cost of Production - TST	2	3	4	1	
Cost of Production - CVE	4	2	3	1	
Cost of Production - SSL	4	2	1	3	
Sales / Advertising Expense Ratio	4	2	3	1	
Sales / Salesforce Expense Ratio	3	2	4	1	
Sales / Promotional Expense Ratio	3	2	4	1	
Score	57	38	53	20	
Performance Rank	4	2	3	1	
Bankrupt?	Yes	No	No	No	
Adjusted Rank	4	2	3	1	

(Crookall, 1992).

In order to foster discussion and research on simulation debriefing, a panel discussion at the 2004 ABSEL Conference highlighted simulation debriefing objectives, timing, structure and process. Simulation debriefing objectives include (a) answering student questions, (b) clarifying student thinking, (c) reinforcing specific teaching points, (d) linking the simulation to "real life," and (e) releasing emotional tension built during the exercise (Fritzsche et al., 2004). While debriefing generally occurs at the end of the simulation, brief sessions with individual teams or the entire class may be done during the simulation (Fritzsche et al., 2004). Debriefing is accomplished via (a) class discussion, (b) team presentations, (c) team discussions, and/or (d) written assignments (Fritzsche et al., 2004). Simulation debriefing processes include a discussion of (a) personal reactions, (b) simulation events, (c) problems encountered, (d) learning outcomes, and (e) links to the business world (Fritzsche et al., 2004).

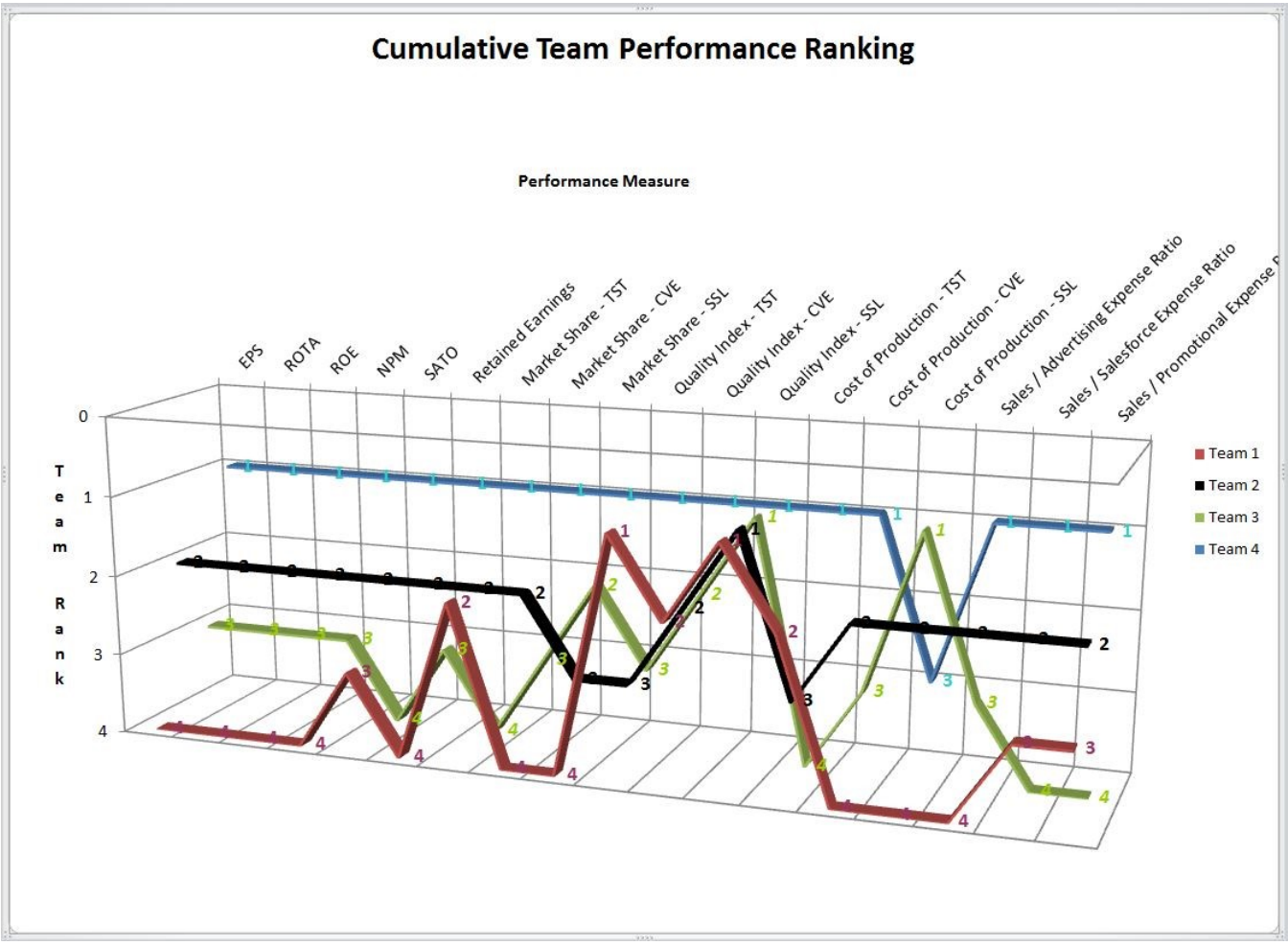
Based on the literature review of experiential learning and business simulation debriefing, and in response to the 2004 ABSEL Conference panel discussion on debriefing, this paper (a) proposes a comprehensive phased debriefing process, and (b) presents the End Game Performance package that facilitates intermediate and final debriefing, and enhances learning both during and at the end of the COMPETE marketing simulation (Faria, 1994, 2006). This End Game Performance package is used together with a wide array of web-based strategic market planning and positioning graphics packages and Microsoft Excel-based marketing DSS packages tied to the simulation results.

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., 1993, 1994; Palia, 1989, 1991, 2006, 2009; Peach, 1996; Schellenberger, 1983; Shane and Bailes, 1986; Sherrell et al., 1986; Wingender and Wurster, 1987; Woodruff, 1992).

Decision support systems (DSS) 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

EXHIBIT 2
CUMULATIVE TEAM PERFORMANCE RANKING



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).

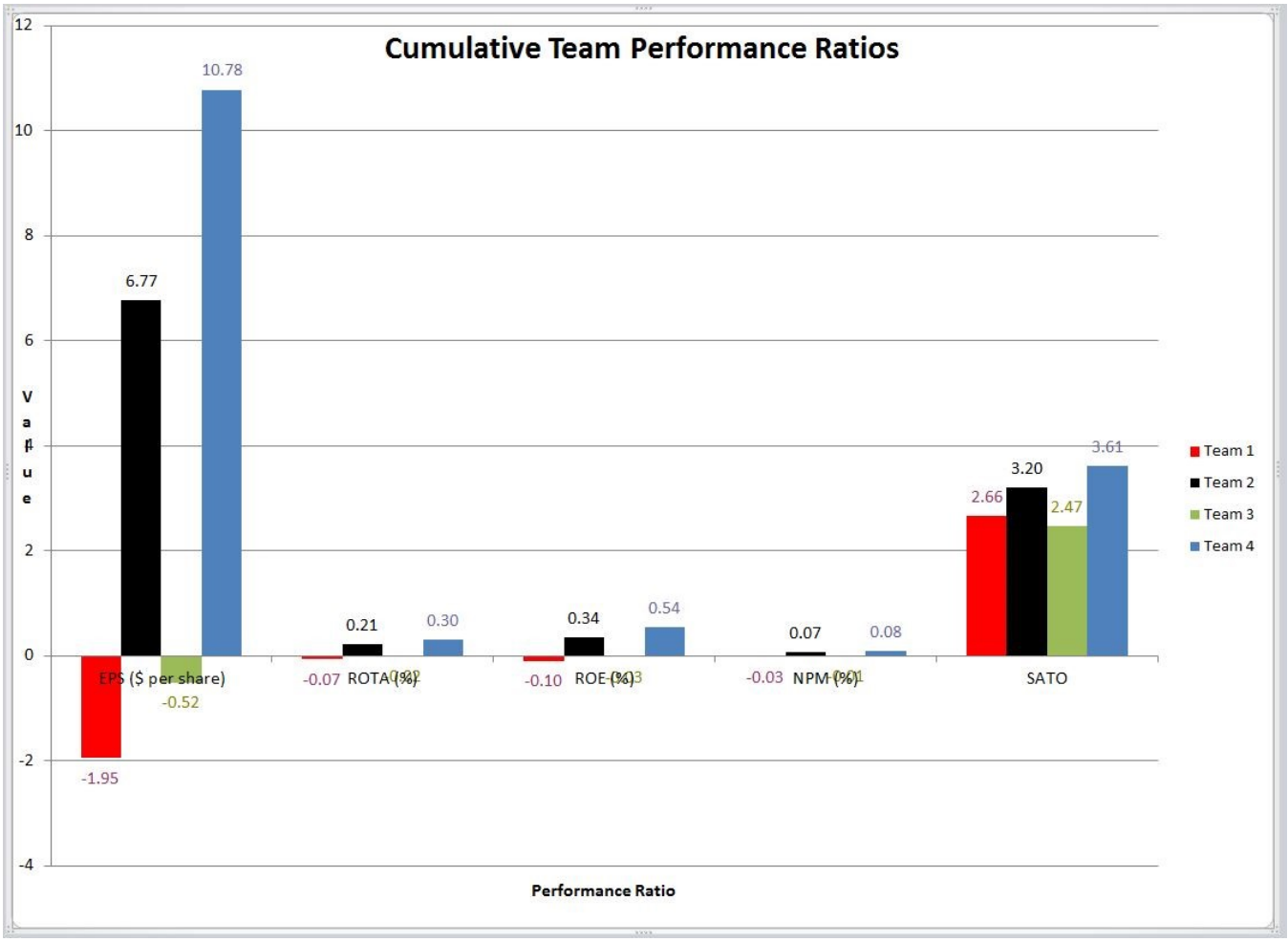
DSSs used with business simulations yield several benefits. These include greater depth of understanding of simulation activity with resulting increase in planning (Keys et al., 1986), in-depth understanding of quantitative techniques as students visualize the results of their applications, sensitivity to weaknesses in techniques used, and experience in capitalizing on their strengths (Fritzche 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).

Several scholars have investigated the relationship between game performance and use of DSSs (Keys & Wolfe, 1990) as well as other predictor variables such as (a) past academic performance (GPA) and academic ability of participants, and degree of planning and formal decision making by teams (Faria, 2000), (b) GPA and the use of DSSs (Keys and Wolfe, 1990), (c) age, gender, GPA and expected course grade (Badgett, Brenenstuhl & Marshall, 1978), (d) university GPA and academic major (Gosenpud & Washbush, 1991), (e) gender, GPA and course grade (Hornaday, 2001; Hornaday & Wheatley, 1986), (f) gender (Johnson, Johnson & Golden, 1997; Wood, 1987), (g) GPA, previous course grades, and course grade (Lynch and Michael, 1989), with conflicting results. These conflicting results led to the conclusion that no predictor variable consistently predicts simulation performance (Gosenpud, 1987).

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 pro-active 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

EXHIBIT 3
CUMULATIVE TEAM PERFORMANCE RATIOS



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).

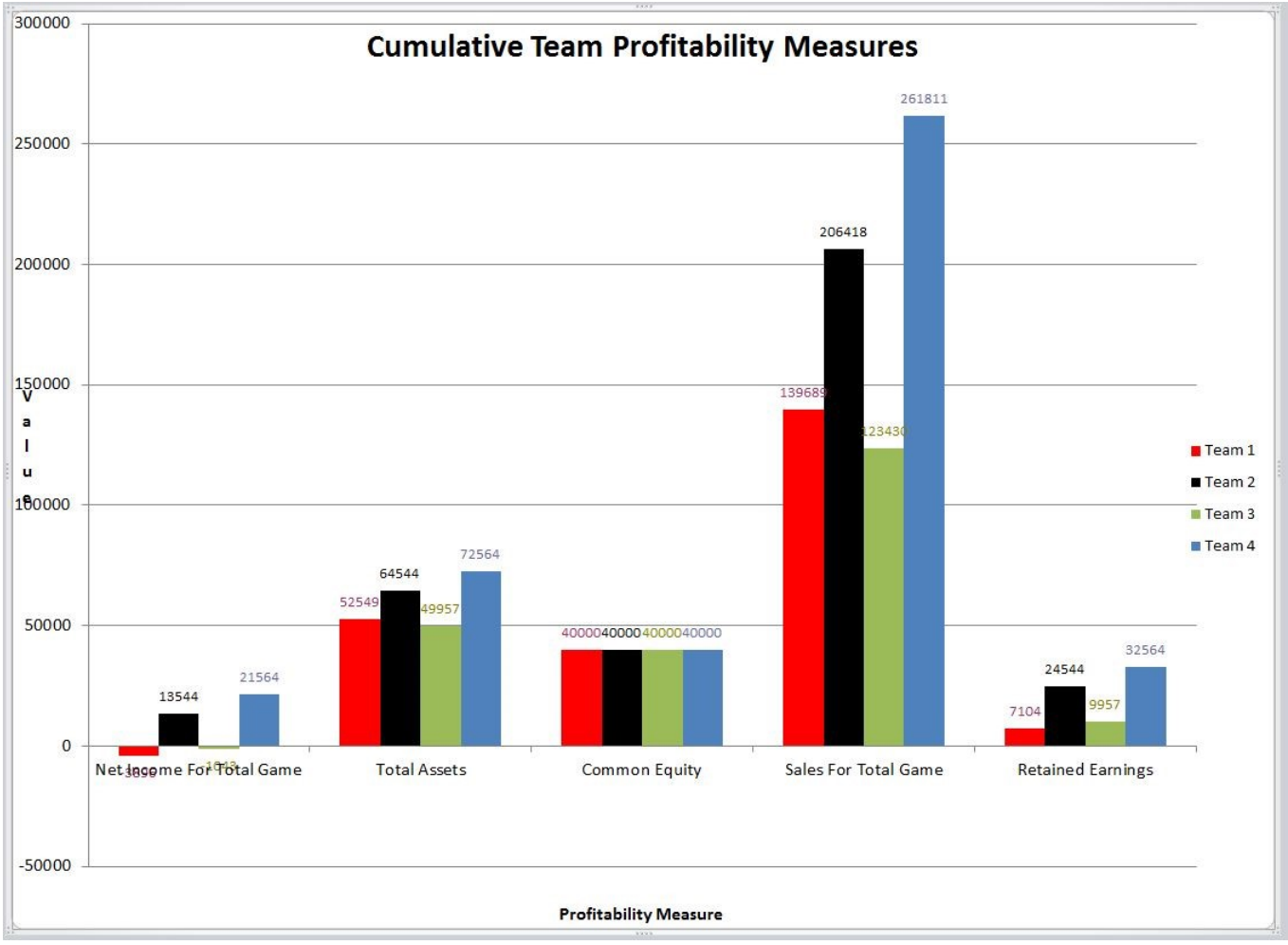
This paper proposes a comprehensive phased initial briefing / intermediate briefing / final debriefing procedure that uses the End Game Performance Package together with marketing DSS packages. Based on insights derived from the literature on experiential learning, business simulations, and experiential exercises, the End Game Performance package facilitates intermediate and final simulation debriefing and enhances participant learning. The marketing DSS packages are used to (a) plan and implement a marketing program, (b) monitor and analyze simulation performance, and (c) exercise 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; Kotler, 2003, 1988; Lehman and Winer, 1988; Lilien, 1993; Lilien and Rangaswamy, 2003; McCarthy and Perreault, 1984, 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 et al., 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

EXHIBIT 4
CUMULATIVE TEAM PROFITABILITY MEASURES



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 and improve performance.

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, 1987; Perreault and McCarthy 1996).

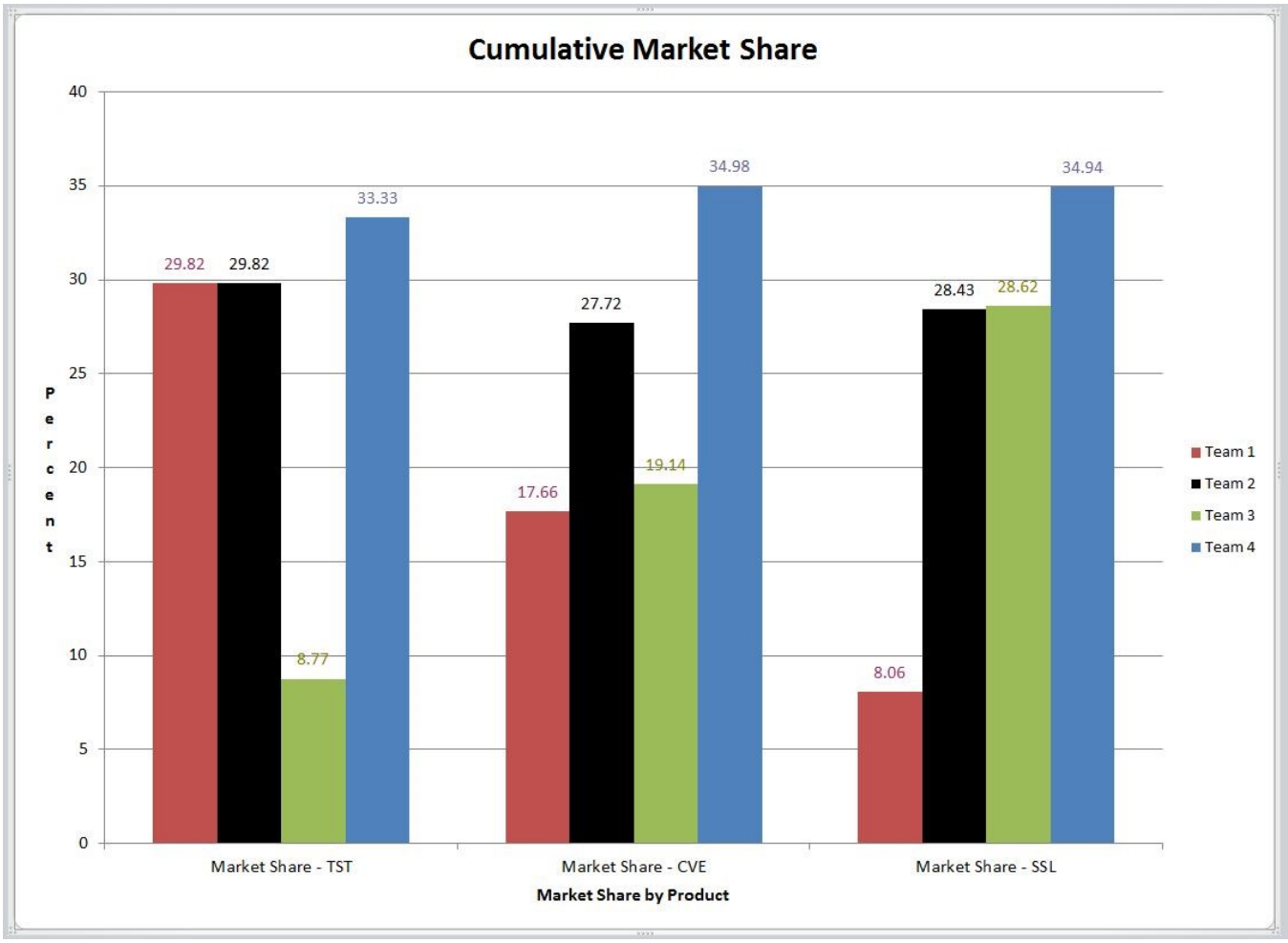
Marketing control consists of sales analysis, performance analysis and marketing cost analysis. Sales analysis involves a detailed breakdown of the company's sales records by geographic region, product, package size, customer size, type or class of trade, price or discount class, method of sale (mail, 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. Performance analysis identifies exceptions or variations in planned performance.

COMPETE MARKETING SIMULATION

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

EXHIBIT 5
CUMULATIVE MARKET SHARE BY PRODUCT



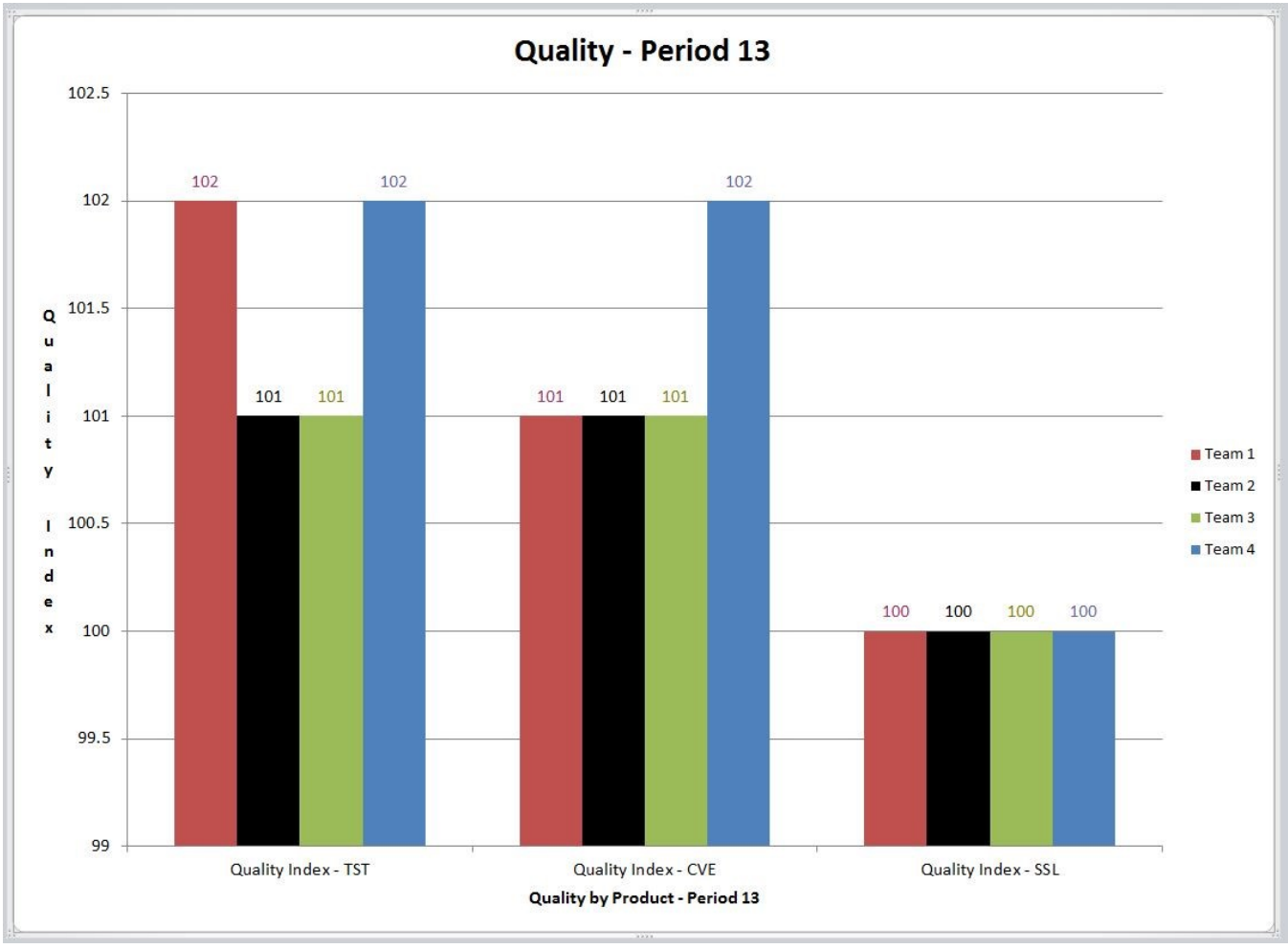
characteristics of consumers in each region are described in the student manual. Based on a marketing opportunity analysis, a mission statement is generated, specific and measurable company goals are set, and marketing strategies are formulated to achieve these goals. Constant monitoring and analysis 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 74 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. The teams use the recently launched and upgraded COMPETE Portal, which has replaced the COMPETE Online Decision Entry System (CODES) (Palia et al., 2000) to enter their decisions, retrieve their results, and download and use a wide array of marketing DSS packages.

In order to facilitate marketing control, the COMPETE simulation (Faria, 2006) is used together with web-based strategic market planning (Palia, 1991, 1995; Palia et al., 2002) and positioning (Palia et al., 2003, Palia & De Ryck, 2013) graphic packages, and a diverse array of Excel target profit pricing (Palia, 2008), competitor analysis (Palia & De Ryck, 2015), forecast error impact (Palia, 2011), marketing mix analysis, multiple regression analysis (Palia, 2004), ratios analysis, strategic business unit (SBU) analysis (Palia, 2009), portfolio normative consistency analysis (Palia, 2012), target portfolio analysis (Palia, 2017), cash flow analysis (Palia, 2010), profitability analysis (Palia & De Ryck, 2014), cumulative team performance (Palia 2005), cost of production analysis (Palia & De Ryck, 2016), and marketing efficiency analysis (Palia, 2018) workbooks that auto-extract and present relevant data from the simulation results and facilitate subsequent analysis and decision-making. These marketing DSS packages enable them to make better informed decisions such as target profit pricing, forecasting, market segmentation and positioning, market mix analysis, competitor analysis, forecast error impact analysis, ratios analysis, cash flow analysis, and strategic market planning, that are introduced to them progressively during the simulation competition.

The comprehensive Online Cumulative Simulation Team Performance Package provides feedback on competing participant team rankings on their cumulative company profitability, market share by product, quality by product, cost of production by product, and efficiency based on simulation results for each decision period (Palia 2005). The End Game Performance package presents, in addition, graphic feedback on (a) cumulative profits, (b) profitability ratios (Earnings per Share, Return on Total Assets, Net Profit

EXHIBIT 6
END GAME QUALITY BY PRODUCT



Margin, Sales-to-Asset Turnover, Return on Equity, Retained Income), (c) market share, (d) sales volume, (e) quality, (f) cost of production, (g) efficiency (Sales-to-Advertising, Sales-to-Salesforce expense, and Sales to Promotional Expense) ratios tied to the simulation results.

THE END GAME PERFORMANCE PACKAGE

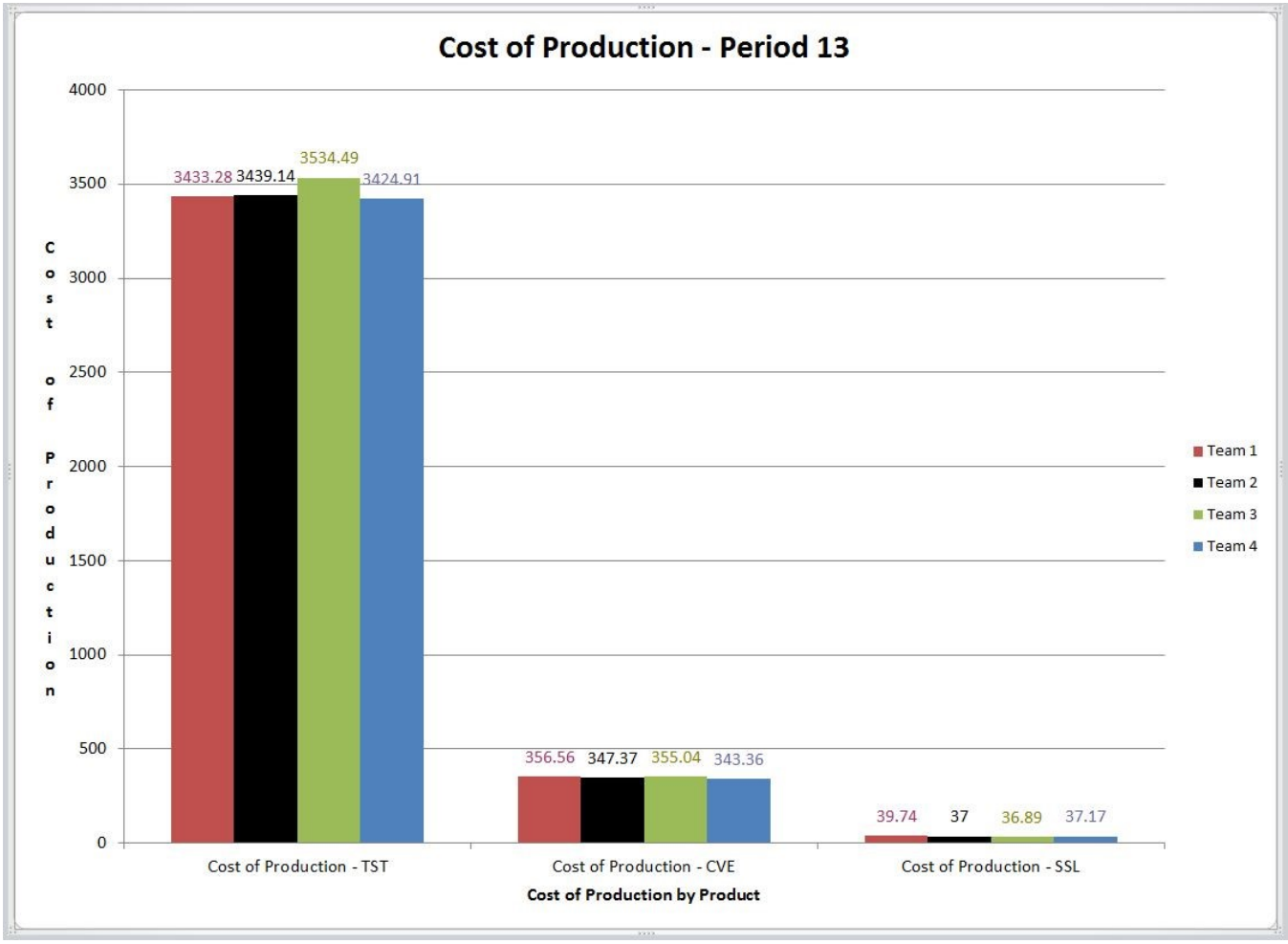
The Web-based cumulative End Game Performance Package provides competing participant teams in the marketing simulation COMPETE comprehensive feedback on cumulative ranking on each of 18 performance criteria, cumulative profitability, cumulative market share by product, end game quality by product, end game cost of production by product, and cumulative efficiency at the end of the simulation competition.

First, the cumulative team performance ranking at the end of four trial decisions during the Fall 2018 semester displays the team rankings on 18 performance measures. These performance measures include six profitability measures, three product market share measures, three product quality measures, three product cost of production measures, and three efficiency measures. This 'Team Comparison' worksheet is uploaded to the COMPETE Portal (online) at the end four trial decision periods, before the start of the simulation competition, and at the end of each year of operation (Periods 4, 8 and 12). Participants can use their team ID and password to login to the COMPETE Portal and access this cumulative team performance ranking (see exhibit 1).

The six cumulative rankings on profitability are earnings per share (EPS), return on total assets (ROTA), return on equity (ROE), net profit margin (NPM), sales to asset turnover (SATO), and retained earnings. EPS is an overall measure of profitability. ROTA is a measure of how well the management of the company is using their assets to generate profits. ROE is a measure of earnings per dollar of equity (assets – liabilities). NPM indicates how profitable the sales are. SATO is a measure of how well the management of the company is using their assets to generate sales. Retained earnings are the cumulative level of profits or loss at the end of competition. All companies begin competition with $1 million in cash, $11 million in retained income, and $51 million in assets.

The competing participant teams are next ranked on cumulative market share for each of the three products, Total Spectrum Television (TST), Computerized DVD/Video Editor (CVE), and Safe Shot Laser (SSL). The market share by product rankings are followed by end-of-game quality index rankings by product and end-of-game cost of production rankings for each of the three

EXHIBIT 7
END GAME COST OF PRODUCTION BY PRODUCT



products. In addition, the competing participant teams are ranked on three marketing efficiency measures, sales-to-advertising ratio, sales-to-salesforce expense ratio, and sales-to-promotional expense ratio, where promotional expense is the sum of advertising and salesforce expenses (see exhibit 1).

Each participant score is determined by first counting the number of 1st, 2nd, 3rd, and 4th rank, multiplying these counts by weights of 1, 2, 3, and 4 respectively, and summing up the products. For example, Team 1 has two 1st ranks, three 2nd ranks, three 3rd ranks, and ten 4th ranks. Consequently, Team 1's score is (2x1) + (3x2) + (3x3) + (10x4) = 2+6+9+40 = 57 (see exhibit 1). Similarly, Team 4 has seventeen 1st ranks, and one 3rd rank. Accordingly, Team 4's score is (17x1) + (0x2) + (1x3) + (0x4) = 17+0+3+0 = 20. Based on the scores of 57 and 20, teams 4 and 1 are ranked 4 and 1 respectively. Each team's balance sheet is checked for bankruptcy, (defined as short term notes payable of $1 million or more in the balance sheet). Based on this bankruptcy check, team 1 is designated Yes (bankrupt), and team 4 is designated No (not bankrupt). The Adjusted Rank is the cumulative team performance rank adjusted for the team's bankruptcy status (see exhibit 1).

Second, the cumulative team adjusted ranks on the eighteen performance measures are plotted in the 3-D line chart and reveal the relative strengths (Rank 1 or 2) and weaknesses (Rank 3 or 4) of each of the four competing teams on each of the eighteen performance measures. Color-coded value labels indicate the rank of each team on each performance measure (see exhibit 2).

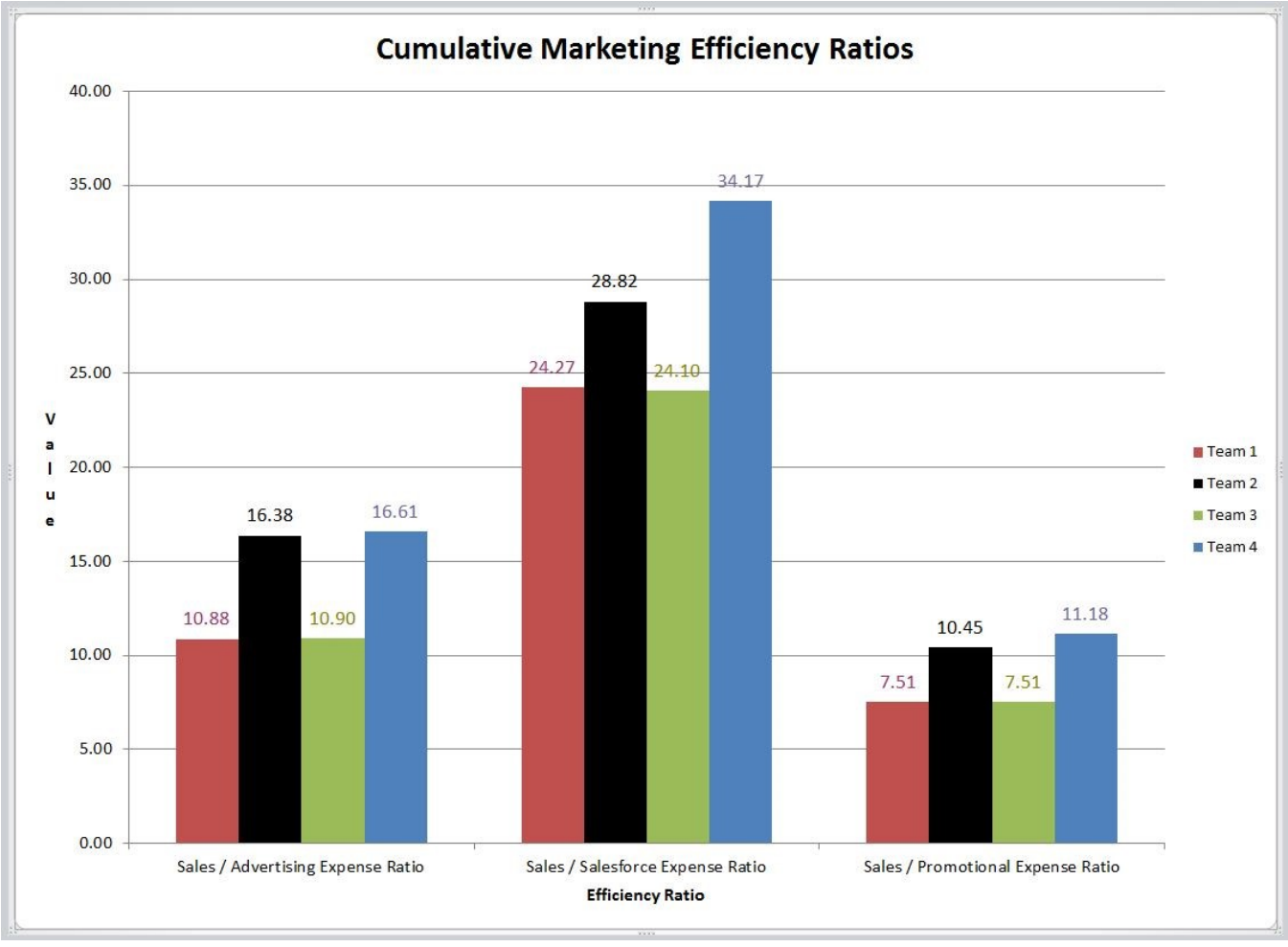
Third, the cumulative team performance ratios, based on which the above rankings are determined, are plotted in a multiple bar chart. Color-coded value labels indicate the cumulative levels of (a) earnings per share (net income / 2 million shares of common stock), (b) return on total assets (net income / total assets), (c) return on equity (net income / equity), (d) net profit margin (net income / sales), and (e) sales to asset turnover (sales / total assets) for each of the four competing teams (see exhibit 3).

Fourth, the cumulative team profitability measures net profit after tax, total assets, common equity, sales revenue, and retained earnings, based on which the above team performance ratios are determined, are plotted in a multiple bar chart. Color-coded value labels indicate the cumulative levels of (a) net income (or loss) for the total game, (b) total assets, (c) common equity, (d) sales for the total game, and (e) retained earnings for each of the four competing teams (see exhibit 4).

Fifth, the cumulative market shares for each product in the simulation competition are plotted in a multiple bar chart. Color-coded value labels indicate the market share for the TST, CVE, and SSL for each of the four competing teams. Market share leaders benefit from (a) a market share carryover effect, and (b) lower cost of production due to economies of scale, the experience or learning curve (see exhibit 5).

Sixth, the end-of-game quality indices for each product are plotted in a multiple bar chart. Color-coded value labels

EXHIBIT 8
CUMULATIVE MARKETING EFFICIENCY RATIOS



indicate the quality index for the TST, CVE, and SSL for each of the four competing teams. All teams begin with a quality index of 100 for each of their three products. The quality rankings are based on the quality index for the decision period following the last period of competition (period 13) in order to preclude or dissuade teams from employing end-of-game strategy. This ranking approach dissuades competing teams from drastically reducing R&D spending focused on quality improvement at the end of competition in order to boost profits (see exhibit 6).

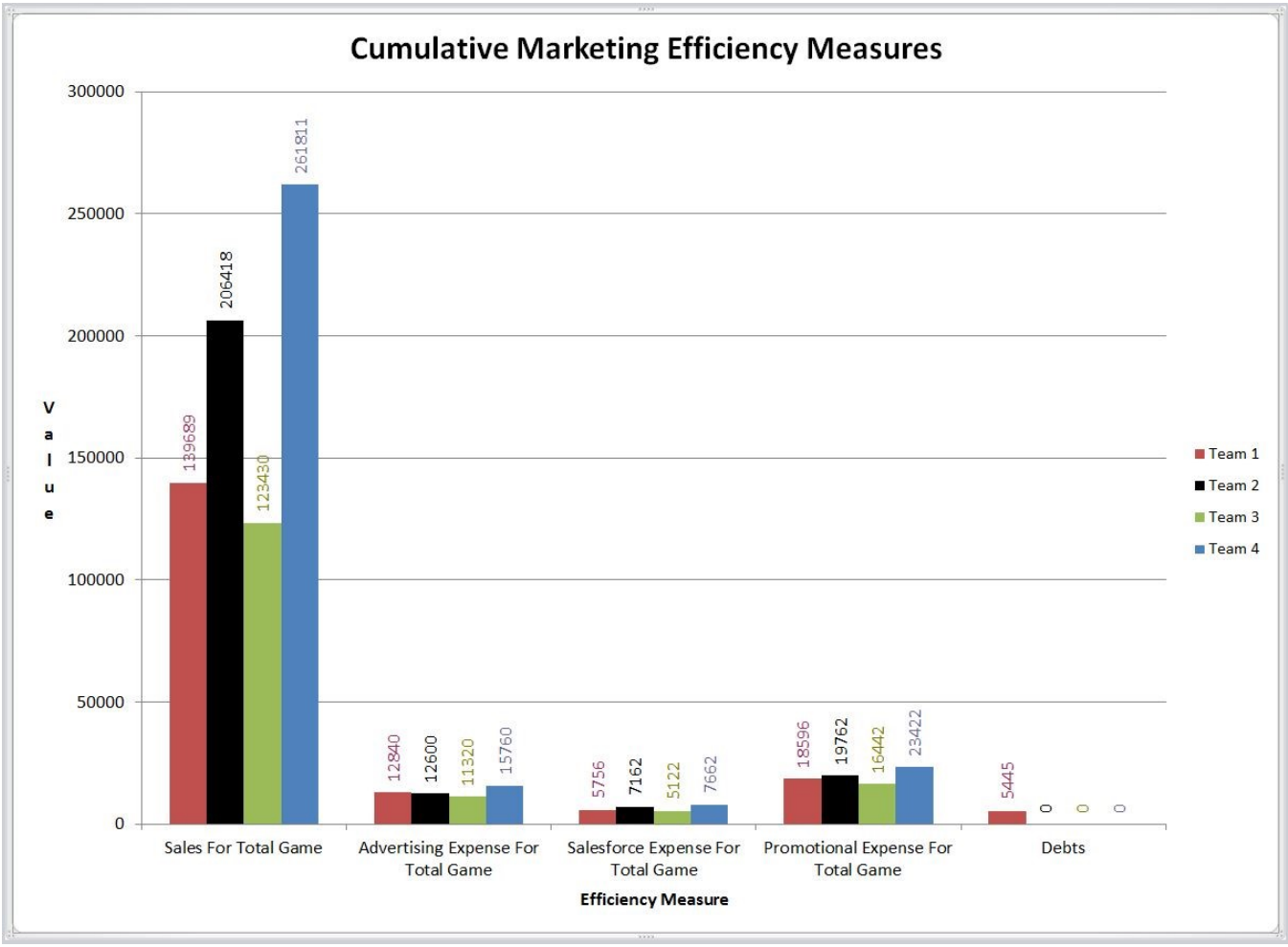
Seventh, the end-of-game costs of production for each product are plotted in a multiple bar chart. Color-coded value labels indicate the unit cost of production for the TST, CVE, and SSL for each of the four competing teams. All teams begin with unit cost of production of $3400 for the TST, $350 for the CVE, and $39 for the SSL. The cost of production rankings are based on the unit cost of production for the decision period following the last period of competition (period 13) in order to preclude or dissuade teams from employing end-of-game strategy. This ranking approach dissuades competing teams from drastically reducing R&D spending focused on process improvement (cost of production reduction) at the end of competition in order to boost profits (see exhibit 7).

Eighth, the cumulative marketing efficiency ratios for each team are plotted in a multiple bar chart. Color-coded value labels indicate the cumulative (a) sales-to-advertising ratio, (b) sales-to-salesforce expense ratio, and (c) sales-to-promotional expense ratio for each of the four competing teams. These marketing efficiency ratios reflect the effectiveness and efficiency of the marketing efforts and serve as a proxy for marketing ROI. Sales-to-advertising ratio indicates the return on each advertising dollar and reflects the effectiveness of the advertising media and copy (message) used. Sales-to-salesforce expense ratio indicates the return on each salesforce expense dollar and reflects the effectiveness of the salesforce used. Sale-to-promotional expense ratio indicates the return on each dollar of promotional expense (see exhibit 8).

Ninth, the cumulative marketing efficiency measures for each team are plotted in a multiple bar chart. Color-coded value labels indicate the cumulative (a) sales revenue, (b) advertising expense, (c) salesforce expense, and (d) promotional expense (defined as the sum of advertising and salesforce expense), based on which the above cumulative marketing efficiency ratios are calculated, are plotted in a multiple bar chart. In addition, the end-of-competition levels of debt for each of the competing teams are plotted. Teams with a debt level of $1 million or above are deemed to be bankrupt and their adjusted overall team ranking is adversely affected (see exhibit 9).

Tenth, total sales revenue by decision period (see exhibit 10), total advertising expense by decision period (see exhibit 11), and (c) total salesforce expense by decision period (see exhibit 12) for each team are plotted in multiple bar chart (see exhibit 10). These charts enable participants to compare the relative emphasis and effectiveness of advertising and salesforce expenses in

EXHIBIT 9
CUMULATIVE MARKETING EFFICIENCY MEASURES



generating sales revenue.

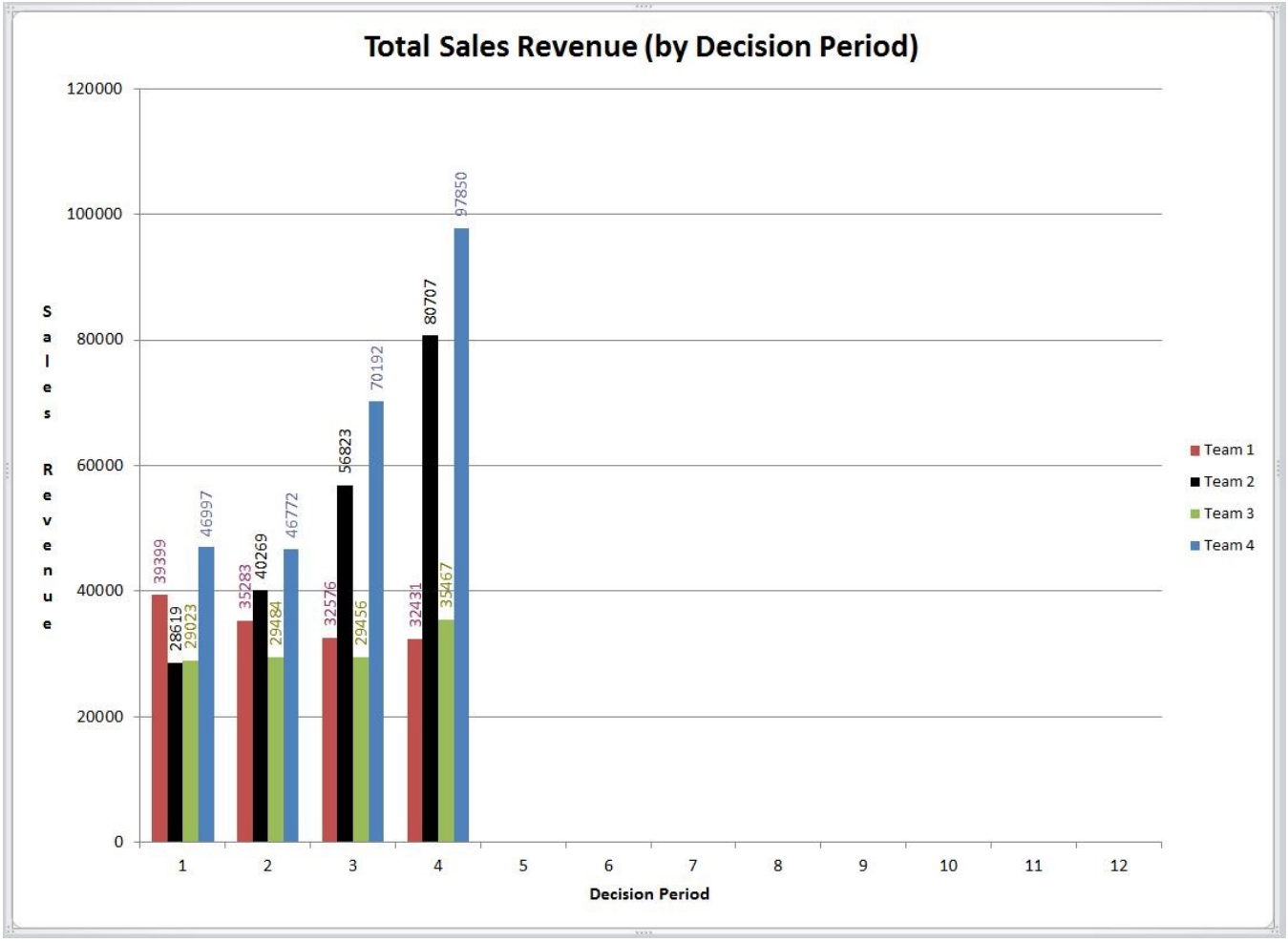
In summary, the End Game Performance package presents the cumulative performance and ranking of competing participant teams in the marketing simulation COMPETE on eighteen performance measures, which include six profitability measures, three market share by product measures, three end-of-game quality index by product measures, three end-of-game unit cost of production by product measures, and three efficiency measures. The cumulative overall ranking of each competing team is determined and an adjusted rank specified after checking for bankruptcy. This web-based package can be accessed via the COMPETE Portal at the end of four trial decisions, and again at the end of competition (12 decision periods) in order to better understand how their strategies and decisions as well as those of their competitors are tied to their performance.

END GAME PERFORMANCE PACKAGE USE

The Web-based End Game Performance Package is currently used with the COMPETE marketing simulation (Faria, 2006) in the undergraduate functional capstone writing-intensive Marketing Strategies course. This Marketing Strategies course is a response to a call from the local business community to develop the analytical and communication skills of our graduates. The mission of the course is to learn and apply strategic market planning and marketing management skills to optimize overall company performance while maintaining cash in balance. The writing-intensive course designation stresses learning through writing and requires frequent writing with quality individual feedback.

At the end of the semester, each participant submits a quality 10-page (narrative) Strategic Market Plan report (30% of course grade) based on the simulation results, marketing DSS package usage, and external research. In addition, each company makes a one-hour long team presentation (10% of course grade) that is divided into two equal parts. The first 30-minute company report covers (a) the presentation agenda, (b) company and brand name justification, and logo explanation, (c) mission statement, (d) organizational structure selected with individual responsibilities, (e) performance analysis, (f) strategic, tactical and forecasting errors made and lessons learned, and (g) sales forecast model using multiple regression analysis with forecast made and forecast error experienced. The second 30-minute company marketing plan covers (a) strategic analysis based on the Aaker framework (Aaker, 2014; Aaker & Moorman, 2018), (b) positioning analysis and strategy using VALS psycho-geo-demographic segmentation data and product positioning maps based on simulation performance data, (c) strategic market plan via SBU portfolio analysis using

EXHIBIT 10
TOTAL SALES REVENUE BY DECISION PERIOD



the BCG growth share and growth gain matrices based on simulation performance data, (d) recommended evaluation and control mechanisms (reports required and marketing control measures), and (e) conclusion with research references. In addition, each team submits a team presentation handout (10% of course grade) with DSS packages and external references used.

First, during each decision period, the competing teams receive cumulative team performance rankings on the above 18 performance measures for their own company. However, they do not receive competitor rankings on cumulative profit, cumulative market share, end-of-period quality, end-of-period unit cost of production, or cumulative efficiency, based on which the cumulative rankings are determined. This confidential information is released to them (a) at the end of the four trial decision periods prior to the start of simulation competition, in order to facilitate preliminary cause-effect analyses and intermediate simulation debriefing, as well as to establish credibility in the ranking system, and (b) at the end of each year (4 quarterly decisions) of simulation competition for intermediate debriefing purposes.

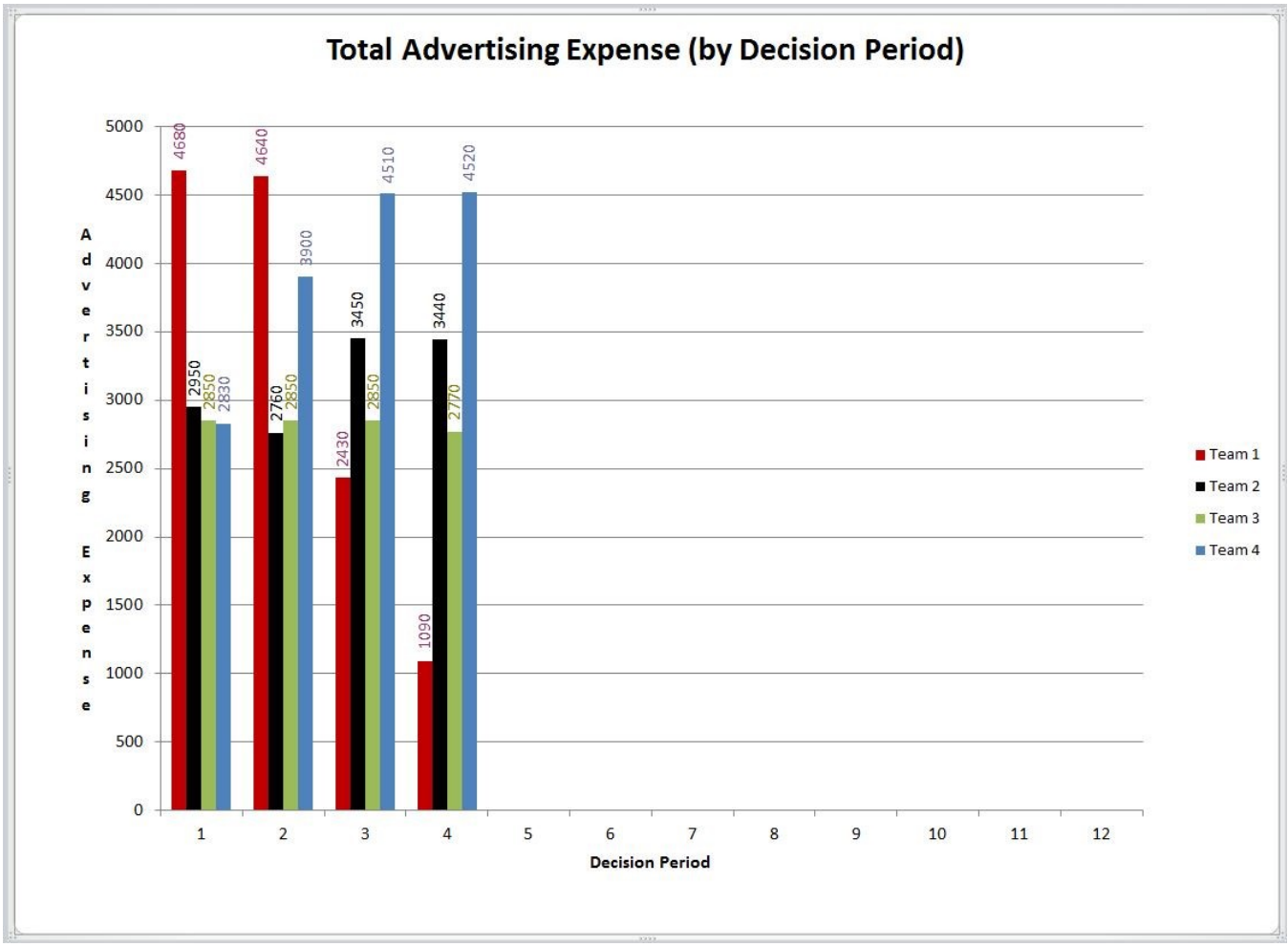
Next, at the end of each year (four quarterly decision periods) of operations, the competing teams can access cumulative team performance rankings on the same 18 performance criteria for all competing companies. These annual reports are uploaded to the COMPETE Portal (server) and can be viewed and downloaded by all participants. They reveal the rankings of all competing teams on each of the 18 performance criteria as well as the overall and adjusted rankings for each of the competing firms. They do not reveal any confidential information on competitor performance measures based on which the cumulative rankings are determined.

Then, at the end of the trial decision period, and subsequently, at the end of competition, the competing teams can access the cumulative End Game Performance Package which consists of 11 charts and 3 worksheets. Charts include (1) cumulative team performance ranking, (2) cumulative team performance ratios, (3) cumulative team profitability measures, (4) cumulative market share, (5) end-of-game quality, (6) end-of-game cost of production, (7) cumulative efficiency, (8) cumulative efficiency measures, (9) sales revenue by period, (10) advertising expense by period, and (11) salesforce by period.

Finally, at the end of competition (3 years of operation consisting of 12 quarterly decision periods), the simulation participants can access the End Game Performance Package to (a) analyze the simulation competition results, (b) prepare their individual strategic market plan reports, and (c) prepare their team presentation at the end of the semester.

PHASED DEBRIEFING PROCESS

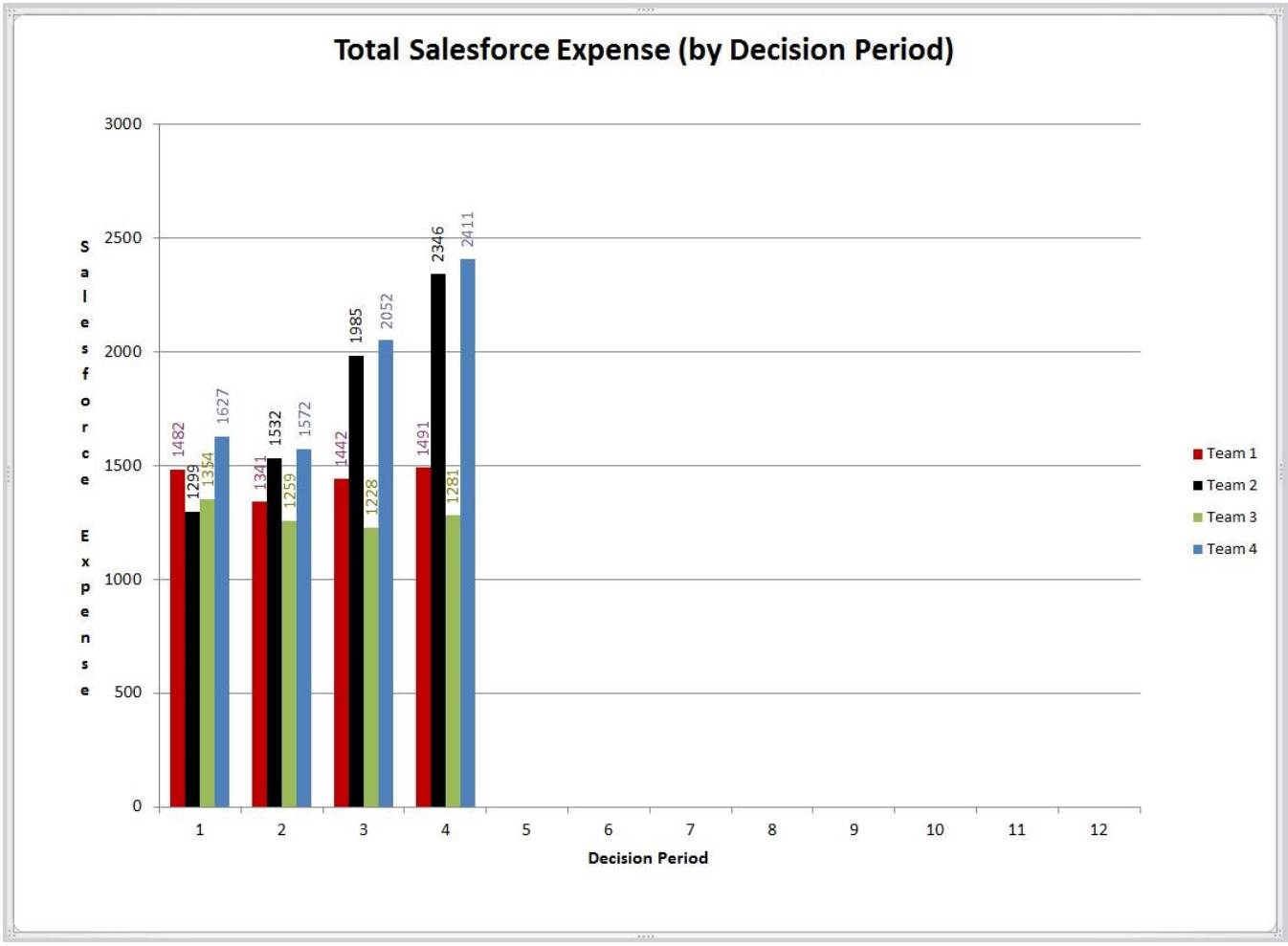
EXHIBIT 11
TOTAL ADVERTISING EXPENSE BY DECISION PERIOD



The semester is divided into 4 phases of differing length. The first 3-week long "Prepare to Compete" phase, is followed by a 7-week long "Compete" phase," a 5-week long "Individual Report and Team Presentation Preparation" phase, and a one-class period Wrap-Up phase.. During the first three weeks of the semester, the competing participant teams are prepared to compete. They are given a comprehensive in-class introduction to (a) decisions, markets and products in the COMPETE marketing simulation, (b) eighteen cumulative team performance criteria, (c) simulation financial statements (income statement, three regional income contribution statements, balance sheet, and underlying cash flow analysis), (d) other simulation reports including market research reports and trade association bulletin, (e) determinants of profitability, market share, quality, cost of production and efficiency, (f) the importance of accurate forecasting, (f) the elements and dimensions of strategy, and (g) alternative strategic thrusts, and the strategic analysis framework (Aaker, 2014; Aaker & Moorman, 2018). They enter four sets of quarterly trial decisions and access the quarterly simulation results via the online COMPETE Portal during the second and third week of the semester. The cumulative team results for each of the four quarterly trial decision periods include the team ranking on the eighteen performance criteria in the End Game Performance package. At the end of the four trial decision periods, they download their decisions, simulation results and access the End Game Performance package. During this 'Prepare to Compete' phase, based on the recommendation of prior participants, each competing team meets with the professor/administrator to go over their results, ask questions, and seek clarification of underlying concepts. In addition, the entire class is exposed to an example of the final team presentation at the end of the semester. The simulation is reset, with the company and product names submitted to the professor/administrator along with their company profit, market share, quality, cost of production, and efficiency goals, in preparation for the simulation competition.

During the next seven weeks of the semester, the competing participant teams enter the second 'Compete' phase. They make twelve sets of quarterly decisions over a three-year operating period, and access the simulation results. Topics covered during this seven-week period include market segmentation, positioning, values and lifestyle analysis, sales forecasting, sales forecast model building, and strategic market planning. Based on the suggestion of prior participants, they are shown relevant sections of prior team presentations on each topic covered. In addition, they are progressively introduced to web-based product positioning map graphics package and Excel-based marketing DSS packages on (a) target profit pricing, (b) forecasting, (c) market segmentation and positioning, (d) market mix analysis, (e) competitor analysis, (f) forecast error impact analysis, (g) ratios analysis, (h) cash flow analysis, and (i) strategic market planning in the computer lab hands-on sessions. These marketing DSS packages (a) auto-extract accurate, timely and relevant data from the simulation results, (b) facilitate analysis, and (c) enable them to make better informed decisions. During the competition, stimulators such as increased production costs, increased sales force transfer expenses, and new

EXHIBIT 12
TOTAL SALESFORCE EXPENSE BY DECISION PERIOD

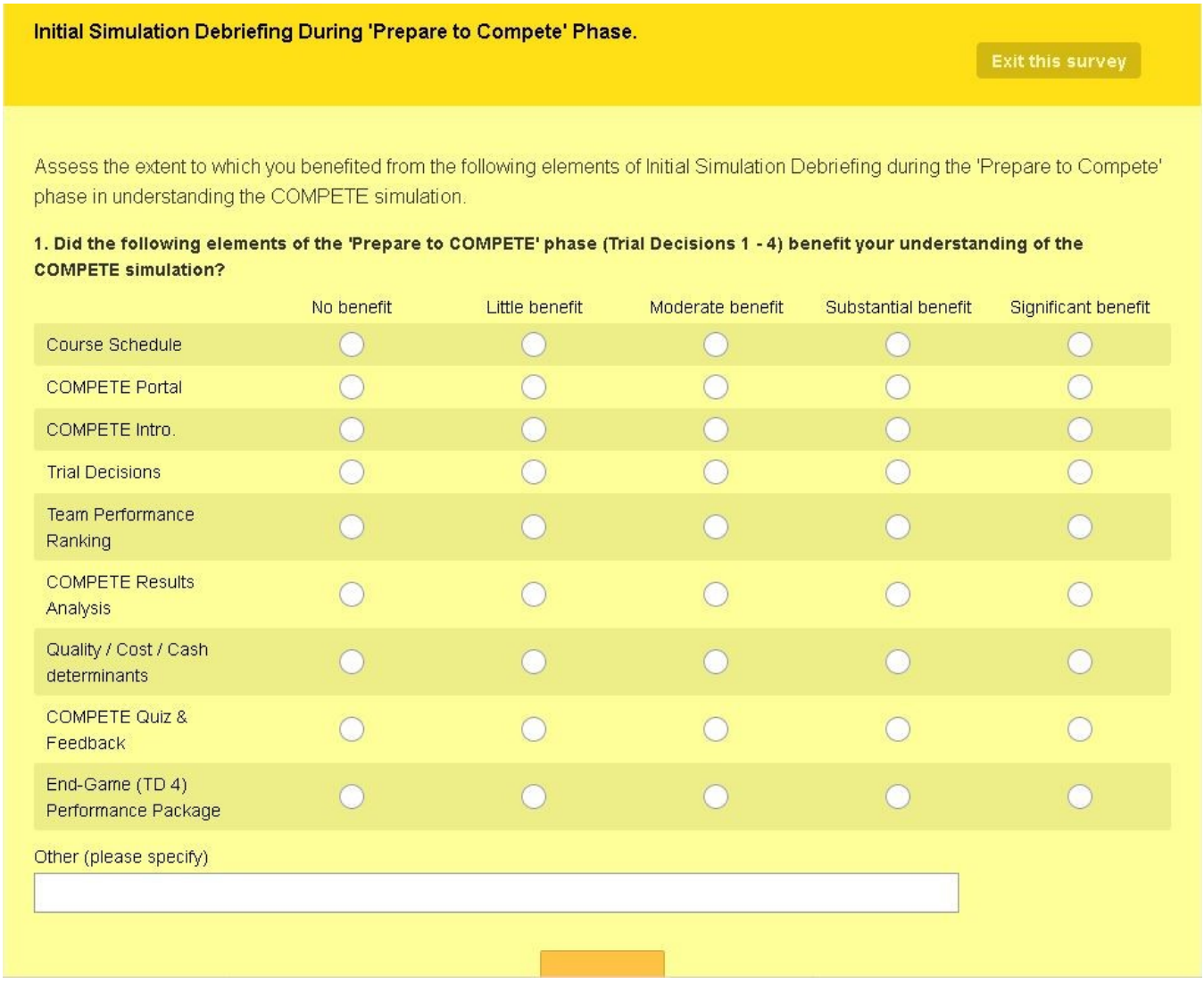


competition are periodically introduced to affect the simulation parameters. The simulation message center is used to inform the competing teams about the stimulators before they take effect. Competing participant teams adjust their marketing strategies in response to the resulting changes in the marketing environment and/or simulation parameters. The teams are permitted to (a) work on their decisions, (b) ask questions, and (c) seek clarification during the last fifteen minutes of each class period. This intermediate simulation debriefing employs a problem-based learning scaffolding approach to help participants understand the underlying reasons for bankruptcy, low profitability, weak market share and other sub-par performance. Based on this enhanced understanding, participants take corrective action in order to improve team performance. At the end of competition, they access the End Game Performance package via the COMPETE Portal and correlate their strategies and decisions with the final results.

This progressive intermediate debriefing strategy turbocharges participant engagement, and heightens participant interest, motivation, confidence and understanding. Indeed, based on participant demand, the Marketing Strategies course is scheduled in the computer lab starting Spring 2019. This enables the participants to use the desktop computers in the computer lab (instead of their Mac notebooks) when working with marketing DSS packages that have macros (.xlsm program files) and Excel Add-Ins (Statpak and VBA Statpak) for use in multiple regression analysis. Participants use (a) the online Product Positioning Map (PPM) graphics package to generate product positioning maps for each of their nine SBUs based on the simulation results for each decision period, and (b) the online Strategic Market Planning - Product Portfolio Analysis (PPA) graphics package to generate the Boston Consulting Group (BCG) Growth Share Matrix (GSM) and Growth Gain Matrix (GGM) for their own company and for each of their competitors based on the simulation results.

During the next five weeks of the semester, the competing participant teams enter the third 'Report & Present' phase. Hands-On sessions in the computer lab enable simulation participants to use all the marketing DSS packages to prepare their individual 'Strategic Market Plan' reports, team presentations and team presentation handouts. The professor/administrator demonstrates the relevant graphics and marketing DSS packages, guides the participants, clarifies concepts, and answers questions from individual participants that often benefit the entire class. The individual 'Strategic Market Plan' report is a 10-page (narrative) report that covers the six-step BCG strategic market planning process and includes the BCG graphics, relevant Excel-based

EXHIBIT 13
INITIAL SIMULATION BRIEFING DURING 'PREPARE TO COMPETE' PHASE - SURVEY



Initial Simulation Debriefing During 'Prepare to Compete' Phase.

Exit this survey

Assess the extent to which you benefited from the following elements of Initial Simulation Debriefing during the 'Prepare to Compete' phase in understanding the COMPETE simulation.

1. Did the following elements of the 'Prepare to COMPETE' phase (Trial Decisions 1 - 4) benefit your understanding of the COMPETE simulation?

	No benefit	Little benefit	Moderate benefit	Substantial benefit	Significant benefit
Course Schedule	○	○	○	○	○
COMPETE Portal	○	○	○	○	○
COMPETE Intro.	○	○	○	○	○
Trial Decisions	○	○	○	○	○
Team Performance Ranking	○	○	○	○	○
COMPETE Results Analysis	○	○	○	○	○
Quality / Cost / Cash determinants	○	○	○	○	○
COMPETE Quiz & Feedback	○	○	○	○	○
End-Game (TD 4) Performance Package	○	○	○	○	○

Other (please specify)

EXHIBIT 14
INITIAL SIMULATION BRIEFING DURING 'PREPARE TO COMPETE' PHASE – SURVEY RESULTS

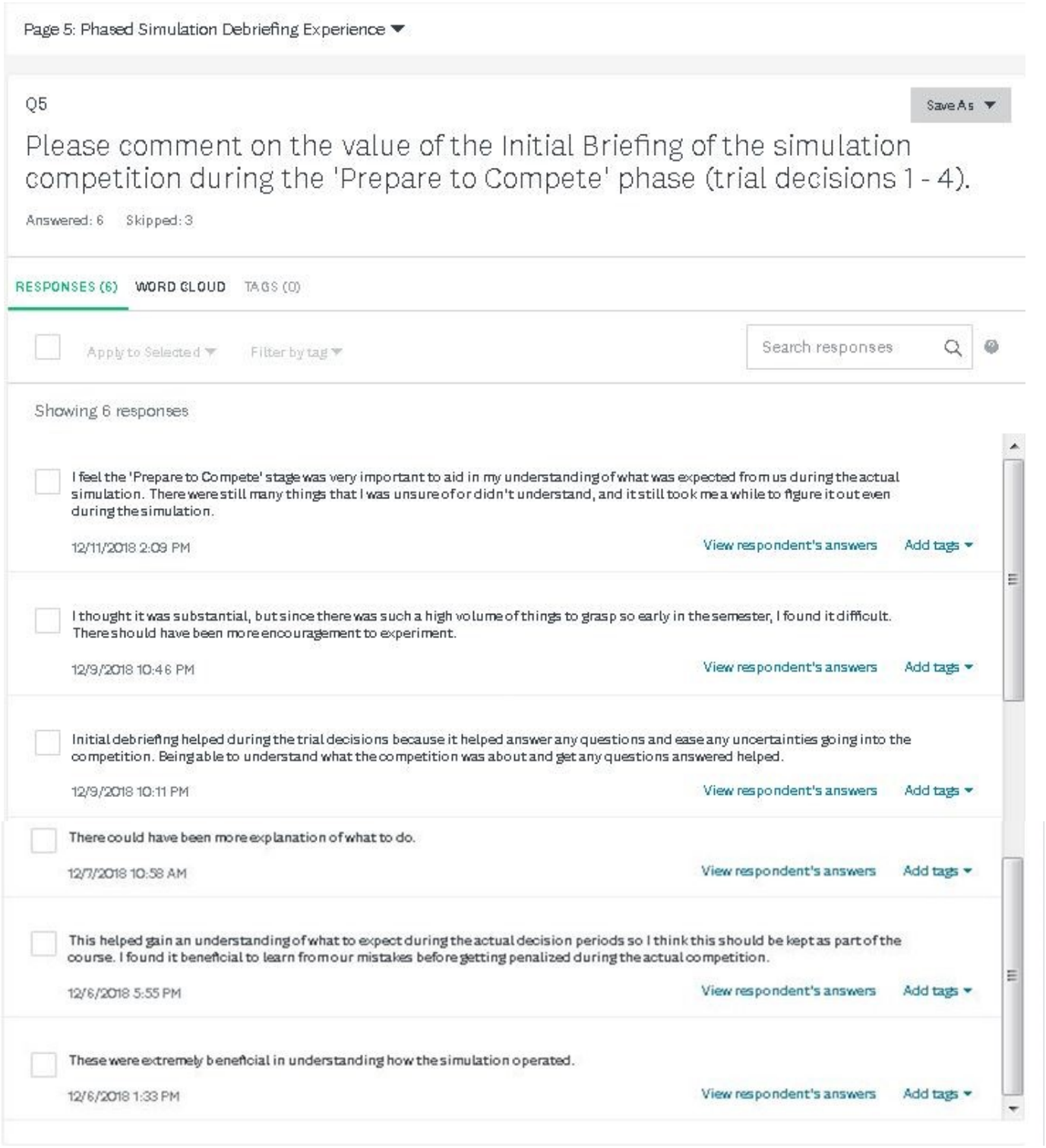
	NO BENEFIT (1)	LITTLE BENEFIT (2)	MODERATE BENEFIT (3)	SUBSTANTIAL BENEFIT (4)	SIGNIFICANT BENEFIT (5)	TOTAL
Course Schedule	0.00% 0	0.00% 0	11.11% 1	44.44% 4	44.44% 4	9
COMPETE Portal	0.00% 0	0.00% 0	33.33% 3	33.33% 3	33.33% 3	9
COMPETE Intro.	0.00% 0	11.11% 1	33.33% 3	11.11% 1	44.44% 4	9
Trial Decisions	0.00% 0	11.11% 1	0.00% 0	22.22% 2	66.67% 6	9
Team Performance Ranking	0.00% 0	0.00% 0	0.00% 0	22.22% 2	77.78% 7	9
COMPETE Results Analysis	0.00% 0	0.00% 0	11.11% 1	0.00% 0	88.89% 8	9
Quality / Cost / Cash determinants	0.00% 0	0.00% 0	11.11% 1	22.22% 2	66.67% 6	9
COMPETE Quiz & Feedback	0.00% 0	11.11% 1	33.33% 3	55.56% 5	0.00% 0	9
End-Game (TD 4) Performance Package	0.00% 0	0.00% 0	22.22% 2	33.33% 3	44.44% 4	9

Comments (0)

BASIC STATISTICS

	MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
Course Schedule	3.00	5.00	4.00	4.33	0.67
COMPETE Portal	3.00	5.00	4.00	4.00	0.82
COMPETE Intro.	2.00	5.00	4.00	3.89	1.10
Trial Decisions	2.00	5.00	5.00	4.44	0.96
Team Performance Ranking	4.00	5.00	5.00	4.78	0.42
COMPETE Results Analysis	3.00	5.00	5.00	4.78	0.63
Quality / Cost / Cash determinants	3.00	5.00	5.00	4.56	0.68
COMPETE Quiz & Feedback	2.00	4.00	4.00	3.44	0.68
End-Game (TD 4) Performance Package	3.00	5.00	4.00	4.22	0.79

EXHIBIT 15
INITIAL SIMULATION BRIEFING DURING 'PREPARE TO COMPETE' PHASE - COMMENTS



marketing DSS packages, and external research references. The comprehensive one-hour team presentation includes the company marketing report (thirty minutes) and proposed marketing plan (thirty minutes). The company marketing report includes the company and brand name justification, company mission, company organization, performance analysis, errors made and lessons learned, and a sales forecast model using multiple regression analysis. The proposed marketing plan includes a strategic analysis (customer, competitor, market, and environmental analyses; performance and portfolio analyses; and closing the strategic gap), positioning analysis, strategic market planning (BCG product portfolio analysis), and evaluation and control mechanisms. During the one-hour team presentations, the professor periodically interrupts each presentation briefly to point out significant errors for the benefit of future teams and the entire class. After each team presentation, the team fields questions from their competitors as well as the administrator/professor. Questions frequently posed by the professor /administrator include (a) what the team would do differently if they were to relive or restart the simulation experience, (b) how the team responded to the stimulator on increased production costs, the consequent results, and lessons learned, (c) how the team responded to the stimulator on increased salesforce expenses, the consequent results, and lessons learned, and (d) how the team responded to the stimulator on entry of new competition at lower prices, the consequent results, and lessons learned.

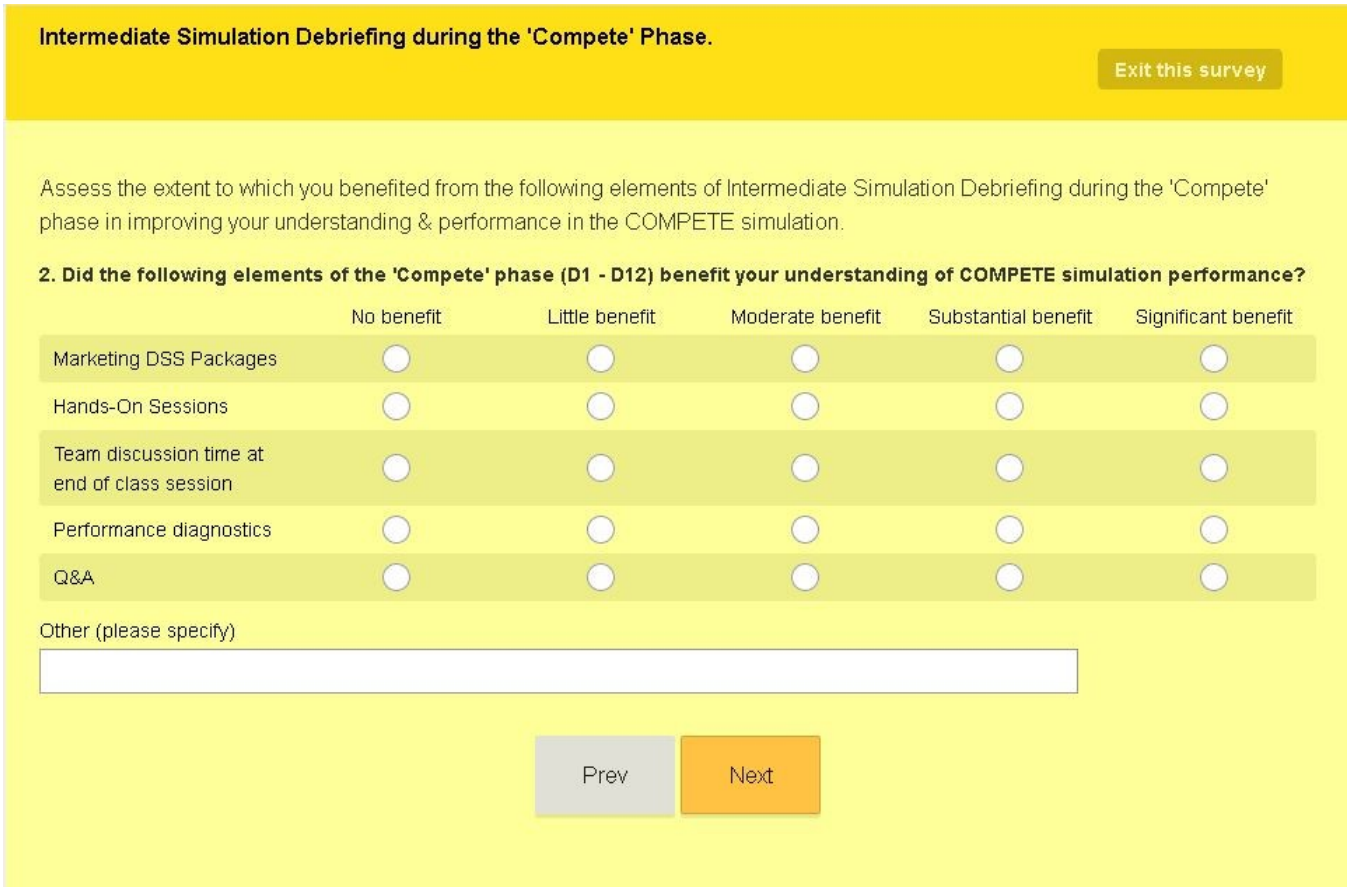
The final debriefing phase occurs during the last class period at the end of the semester. A departmental Marketing Knowledge Assessment test is followed by performance feedback based on the End Game Performance package, the scored earned by each of the competing participant teams, and a review of alternative responses to the simulation stimulators. The professor/ administrator reviews (a) the elements of strategy, (b) the situation analysis, planning, implementation and control phases of the marketing strategy process, and (c) the skills and knowledge of foundation disciplines that facilitate effective marketing.

In summary, the End Game Performance Package can be used to progressively (a) brief simulation participants on the potential reasons for game performance at team meetings at the end of the trial decision period, (b) debrief team members at the end of competition after each end-of-semester team presentation, and (c) debrief the entire class during the final class period on simulation performance before reviewing the elements and dimensions of strategy, the marketing strategy process they experienced during the simulation competition, and the knowledge of foundation disciplines and skills that facilitate effective marketing. Phased intermediate debriefing during the last 15 minutes of each class period is used to progressively respond to participant needs as the teams identify problems, seek clarification, use appropriate DSS packages to extract data from the simulation results, analyze and understand the underlying reasons for sub-par performance, and take corrective action steps to improve team performance.

STRENGTHS AND LIMITATIONS

Early in the semester, at the end of the 'Prepare to Compete' phase after four trial decision periods, the End Game

EXHIBIT 16
INTERMEDIATE SIMULATION DEBRIEFING DURING 'COMPETE' PHASE - SURVEY



Performance Package helps competing participant teams to (a) identify instances of sub-par performance on one or more of the eighteen performance measures, (b) determine the potential underlying causes for lower than expected performance by monitoring and correlating their decisions and performance, and (c) improve marketing performance through a better understanding of the antecedents of each performance measure. They can correlate their trial decisions with their performance results and better understand the underlying reasons for their performance results. At the team meetings (recommended by prior participants) with the professor/administrator during the trial decision period early in the semester, they can ask questions, clarify doubts, and better understand the reasons for the simulation performance results and the antecedents of each performance measure.

Next, during the 'Compete' phase, the participants can use the web-based strategic market planning and positioning graphics packages as well as the web-based marketing DSS packages on target profit pricing, market segmentation and positioning, competitor analysis, forecasting, cash flow analysis, forecast error impact, ratios analysis, SBU analysis, profitability analysis, market share analysis, quality analysis, cost of production analysis, and marketing efficiency analysis to understand the reasons for sub-par performance. They are progressively introduced to the above packages during (a) the hands-on sessions in the computer lab, and (b) the last 15 minutes of each class period as the teams work on their forthcoming decisions. They ask questions, clarify

EXHIBIT 17
INTERMEDIATE SIMULATION DEBRIEFING DURING 'COMPETE' PHASE – SURVEY RESULTS

Q2

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Did the following elements of the 'Compete' phase (D1 - D12) benefit your understanding of COMPETE simulation performance?

Answered: 9 Skipped: 0

	NO BENEFIT (1)	LITTLE BENEFIT (2)	MODERATE BENEFIT (3)	SUBSTANTIAL BENEFIT (4)	SIGNIFICANT BENEFIT (5)	TOTAL	WEIGHTED AVERAGE
Marketing DSS Packages	0.00% 0	0.00% 0	22.22% 2	44.44% 4	33.33% 3	9	1.67
Hands-On Sessions	0.00% 0	0.00% 0	0.00% 0	44.44% 4	55.56% 5	9	2.78
Team discussion time at end of class session	0.00% 0	0.00% 0	11.11% 1	11.11% 1	77.78% 7	9	3.89
Performance diagnostics	0.00% 0	0.00% 0	0.00% 0	44.44% 4	55.56% 5	9	2.78
Q&A	0.00% 0	0.00% 0	0.00% 0	44.44% 4	55.56% 5	9	2.78

Comments (0)

BASIC STATISTICS

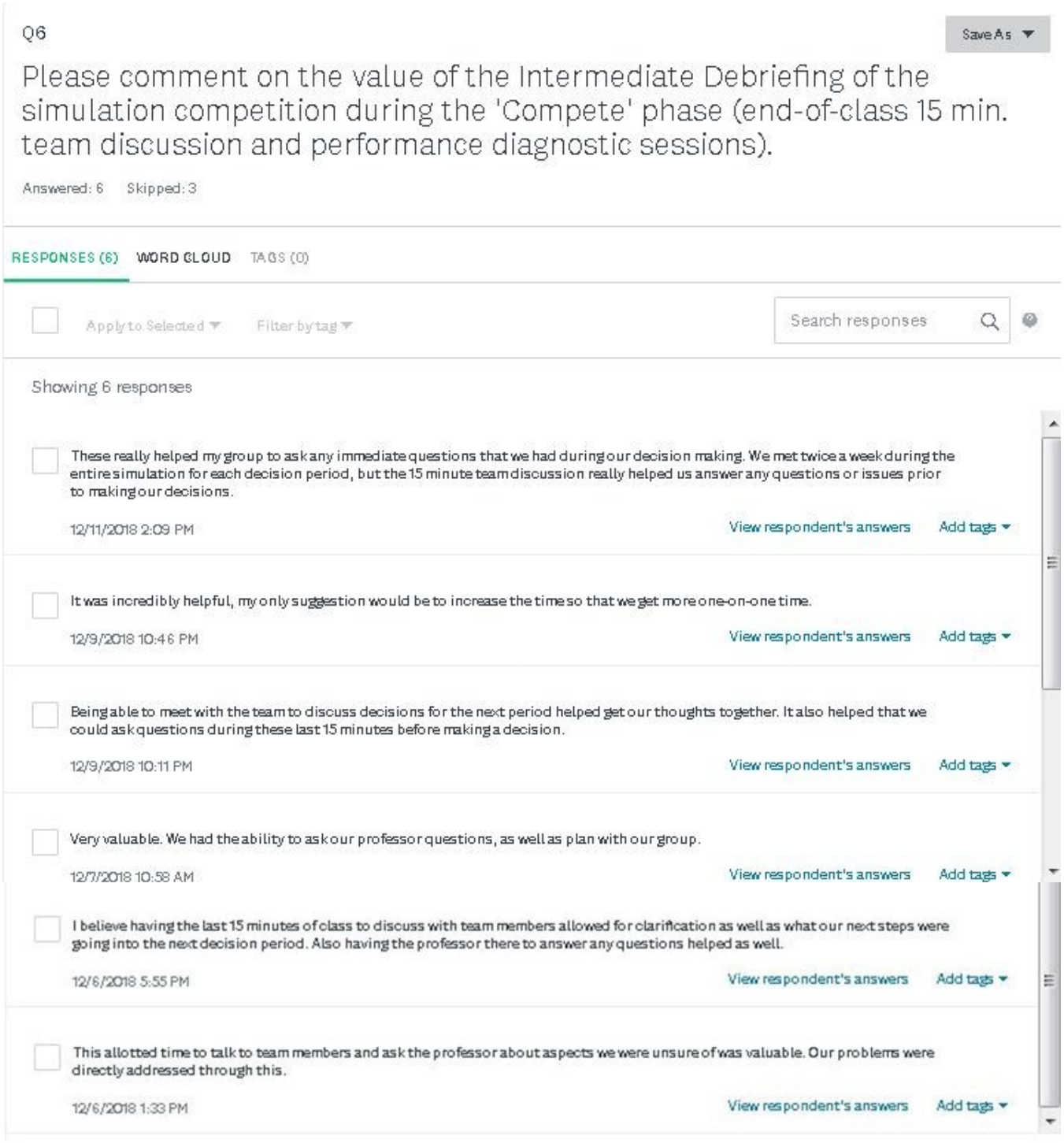
	MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
Marketing DSS Packages	3.00	5.00	4.00	4.11	0.74
Hands-On Sessions	4.00	5.00	5.00	4.56	0.50
Team discussion time at end of class session	3.00	5.00	5.00	4.67	0.67
Performance diagnostics	4.00	5.00	5.00	4.56	0.50
Q&A	4.00	5.00	5.00	4.56	0.50

doubts, and better understand how they can influence their performance outcome.

Later, at the end of the simulation competition, they answer questions raised by competing teams and the administrator/ professor on their strategies, performance, responses to simulation events/stimulators, and lessons learned, after their one-hour team presentation. Finally, during the wrap-up session at the end of the semester, the administrator/professor uses the End Game Performance package to debrief the entire class, before reviewing the elements and dimensions of strategy, the marketing strategy process, and the knowledge and skills needed for effective marketing.

Positive engagement, interest and motivation were observed in the classroom, and positive student feedback was received from undergraduate students at the end of the Spring 2018 semester. Participants report that the marketing DSS packages enable them better understand the determinants of marketing performance. The automatic extraction feature saves time, and requires no (or in some cases, limited) data entry. Valid relevant performance-based data are automatically extracted via external linking from the

EXHIBIT 18
INTERMEDIATE SIMULATION DEBRIEFING DURING 'COMPETE' PHASE - COMMENTS



Excel version of the simulation results.

The End Game Performance Package has some limitations. First, the package can only be deployed at the end of the trial decision periods and at the end of competition. It cannot be used in intervening periods as it contains confidential information on equity, unit cost of production and debt of competing firms. Second, the performance measures are cumulative and not period specific. Only sales revenue, advertising expense, salesforce expense, and promotional expense are reported by period. All the above measures are essential for the calculation of the ratios and the determination of team rankings.

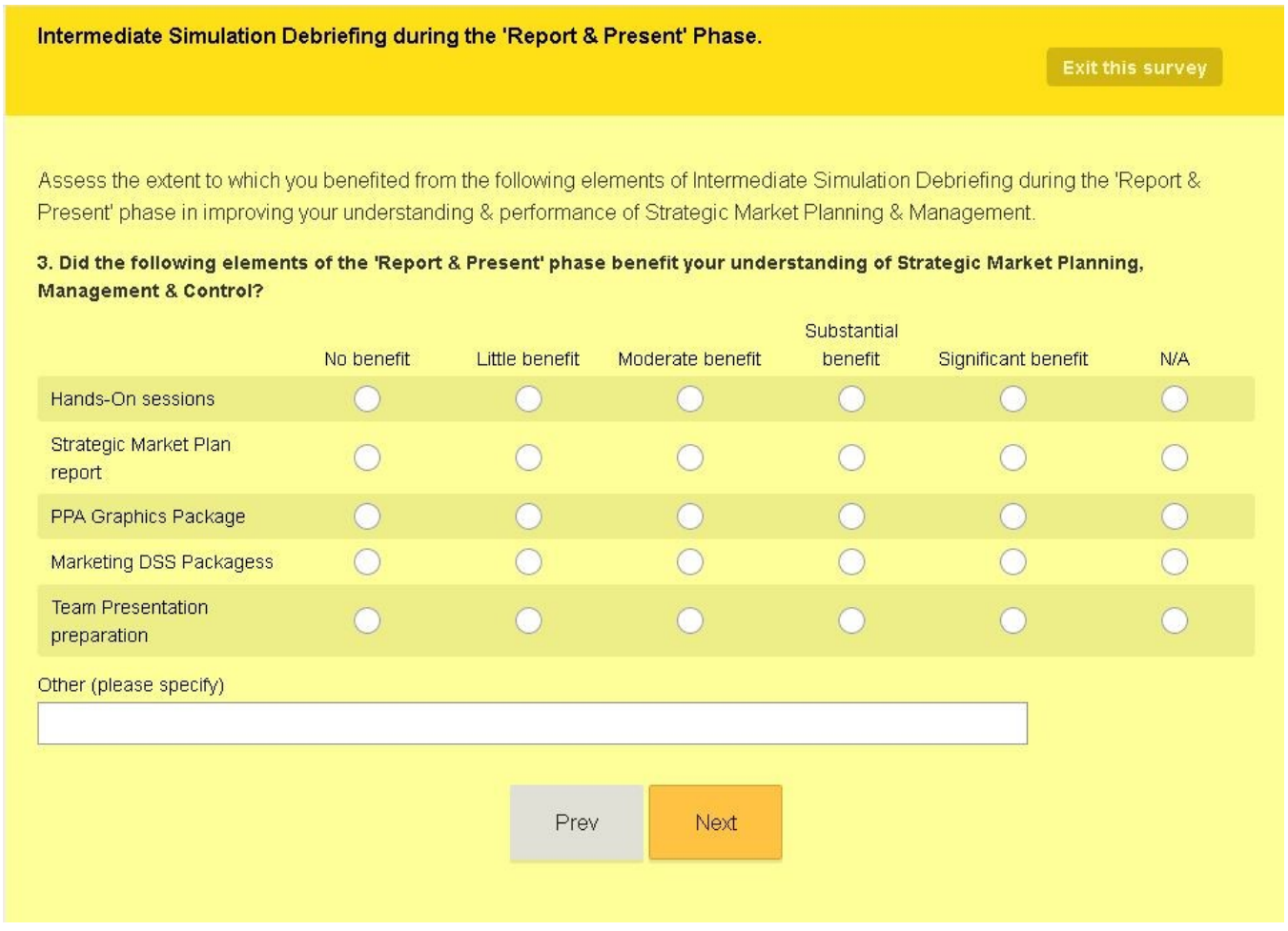
Despite these limitations, the End Game Performance Package is a simple yet powerful web-based user-centered learning tool that extracts relevant data from the simulation results, precludes data entry error, and saves considerable time involved in identifying relevant data. Yet, in order to maximize learning about marketing effectiveness and efficiency and exercise marketing control, the professor needs to (a) explain the purpose, significance, assumptions, usage, and limitations of all DSS packages, (b) require inclusion of a sample analysis in an individual report and/or team presentation, and (c) test students on their understanding of the underlying concepts at the end of the semester.

PHASED SIMULATION DEBRIEFING SURVEY

In response to reviewer comments regarding lack of evidence supporting the claims of turbocharged engagement, heightened motivation and enhanced learning via phased simulation debriefing, an online survey of the phased simulation debriefing process was developed and deployed. This survey explores the perceived benefit of elements used in each of the four simulation debriefing phases: (a) initial briefing during the first 'Prepare to Compete' phase, (b) intermediate debriefing during the second 'Compete' phase, (c) intermediate debriefing during the third 'Report & Present' phase, and (d) final debriefing during the fourth 'Wrap-Up' phase to better understand the COMPETE simulation, simulation performance, and strategic market planning, management & control respectively. Open-ended participant comments on the value of each debriefing phase augment and amplify the survey responses. In addition, the survey explores the extent of value-added to the marketing strategy/management learning experience by each debriefing phase, the online product positioning map and product portfolio analysis graphics packages, and the Marketing DSS (Excel-based) packages .

Following receipt of the reviewer comments, this phased simulation debriefing survey was posted online during the final

EXHIBIT 19
INTERMEDIATE SIMULATION DEBRIEFING DURING 'REPORT & PRESENT' PHASE - SURVEY



weeks of the Fall 2018 semester when students are busy completing reports, preparing presentations, completing course assignments and preparing for final examinations. The nine responses received from the first section of 19 participants (max. class size is 20 students for this capstone writing-intensive course) provides evidence on the value of phased simulation debriefing. Of particular note are the open-ended responses/comments on each of the four simulation debriefing phases.

The phased simulation debriefing survey consists of nine questions. The first matrix rating format question uses a five-point rating scale and focuses on the perceived benefit of nine elements used in the initial briefing 'Prepare to Compete' phase in understanding the COMPETE simulation (see exhibit 13). The nine elements rated are (a) course schedule, (b) COMPTE portal, (c) COMPETE introduction, (d) Trial decisions, (e) Team performance ranking, (f) COMPETE results analysis, (g) Quality / cost of production / cash determinants, (h) COMPETE quiz and feedback, and (i) End Game Performance Package (after Trial Decision 4). Ratings include 'No Benefit' (1), 'Little Benefit' (2), 'Moderate Benefit' (3), Substantial Benefit' (4), and 'Significant Benefit' (5).

The survey responses on the perceived benefit of these nine elements used in the initial briefing 'Prepare to Compete' phase to understanding the COMPETE simulation are followed by the basic statistics (See exhibit 14). A majority of responses indicate either substantial or significant benefit. The mean ratings of the nine elements range from a high of 4.78 for (a) Team performance

EXHIBIT 20
INTERMEDIATE SIMULATION DEBRIEFING DURING 'REPORT & PRESENT' PHASE – SURVEY RESULTS

Q3

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Did the following elements of the 'Report & Present' phase benefit your understanding of Strategic Market Planning, Management & Control?

Answered: 9 Skipped: 0

	NO BENEFIT (1)	LITTLE BENEFIT (2)	MODERATE BENEFIT (3)	SUBSTANTIAL BENEFIT (4)	SIGNIFICANT BENEFIT (5)	N/A	TOTAL	WEIGHTED AVERAGE
Hands-On sessions	25.00% 1	0.00% 0	25.00% 1	25.00% 1	0.00% 0	25.00% 1	4	2.67
Strategic Market Plan report	0.00% 0	28.57% 2	28.57% 2	14.29% 1	14.29% 1	14.29% 1	7	3.17
PPA Graphics Package	0.00% 0	33.33% 2	33.33% 2	16.67% 1	16.67% 1	0.00% 0	6	3.17
Marketing DSS Packagess	0.00% 0	0.00% 0	0.00% 0	50.00% 4	50.00% 4	0.00% 0	8	4.50
Team Presentation preparation	0.00% 0	0.00% 0	0.00% 0	20.00% 1	60.00% 3	20.00% 1	5	4.75

Comments (0)

BASIC STATISTICS

	MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
Hands-On sessions	1.00	4.00	3.00	2.67	1.25
Strategic Market Plan report	2.00	5.00	3.00	3.17	1.07
PPA Graphics Package	2.00	5.00	3.00	3.17	1.07
Marketing DSS Packagess	4.00	5.00	4.50	4.50	0.50
Team Presentation preparation	4.00	5.00	5.00	4.75	0.43

ranking and (b) COMPETE results analysis to a low of 3.44 for the COMPETE quiz and feedback (see exhibit 14).

The open-ended comments on the value of the initial simulation briefing 'Prepare to Compete' phase clearly indicate substantial perceived value in understanding the COMPETE simulation (see exhibit 15).

Next, the second matrix rating format question uses the same five-point rating scale and focuses on the perceived benefit of five elements used in the second intermediate simulation debriefing 'Compete' phase to understanding COMPETE simulation performance (see exhibit 16). The five elements rated are (a) Marketing DSS packages, (b) Hands-On sessions, (c) Team discussion time at end of class session, (d) Performance diagnostics, and (e) Q&A. Identical ratings include 'No Benefit' (1), 'Little Benefit' (2), 'Moderate Benefit' (3), Substantial Benefit' (4), and 'Significant Benefit' (5).

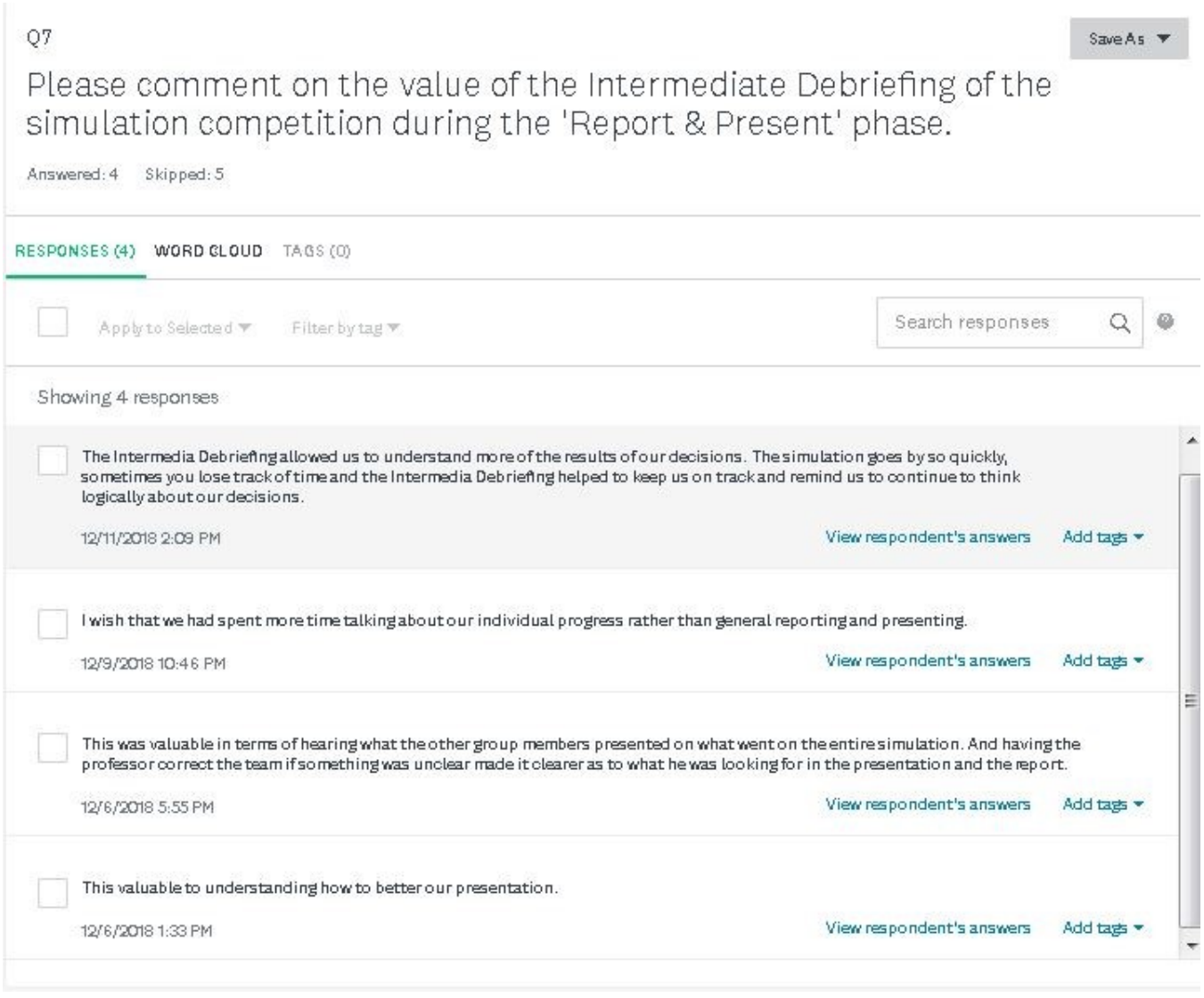
The survey responses on the perceived benefit of these five elements used in the intermediate simulation debriefing 'Compete' phase are followed by the basic statistics (See exhibit 17). A majority of responses indicate either substantial or significant benefit. The mean ratings of the five elements range from a high of 4.67 for Team discussion at end of class session to a low of 4.11 for Marketing DSS packages (see exhibit 17).

The open-ended comments on the value of the second intermediate simulation briefing 'Compete' phase clearly indicate substantial perceived value in understanding COMPETE simulation performance (see exhibit 18).

The third matrix rating format question uses the same five-point rating scale and focuses on the perceived benefit of five elements used in the third intermediate simulation debriefing 'Report & Present' phase to understanding strategic market planning, management & control (see exhibit 19). The five elements rated are (a) Hands-On sessions, (b) Strategic Market Plan report, (c) Product Portfolio Analysis (PPA) graphics package, (d) Marketing DSS packages, and (e) Team presentation preparation. Identical ratings include 'No Benefit' (1), 'Little Benefit' (2), 'Moderate Benefit' (3), Substantial Benefit' (4), and 'Significant Benefit' (5).

The survey responses on the perceived benefit of these five elements used in the third intermediate simulation debriefing 'Report & Present' phase are followed by the basic statistics (See exhibit 20). A majority of responses indicate either substantial or

EXHIBIT 21
INTERMEDIATE SIMULATION DEBRIEFING DURING 'REPORT & PRESENT' PHASE - COMMENTS



significant benefit. The mean ratings of the five elements range from a high of 4.75 for Team presentation preparation to a low of 2.67 for Hands-On sessions (see exhibit 20).

The open-ended comments on the value of the third intermediate simulation briefing 'Compete' phase clearly indicate substantial perceived value in understanding strategic market planning, management & control (see exhibit 21).

The fourth matrix rating format question uses the same five-point rating scale and focuses on the perceived benefit of five elements used in the final simulation debriefing 'Wrap-up' phase at the end of the semester to understanding strategic market planning, management & control (see exhibit 22). The five elements rated are (a) End Game Performance Package, (b) Review of simulation stimulators, (c) Review of strategic market management, (d) Review of strategic marketing process, and (e) Marketing foundations. Identical ratings include 'No Benefit' (1), 'Little Benefit' (2), 'Moderate Benefit' (3), Substantial Benefit' (4), and 'Significant Benefit' (5).

The survey responses on the perceived benefit of these five elements used in the final simulation debriefing 'Wrap-up' phase are followed by the basic statistics (See exhibit 23). A majority of responses indicate either substantial or significant benefit. The mean ratings of the five elements range from a high of 4.14 for Marketing foundations to a low of 3.43 for Review of simulation stimulators (see exhibit 23).

The open-ended comments on the value of the final simulation briefing 'Wrap-up' phase clearly indicate substantial perceived value in understanding strategic market planning, management & control (see exhibit 24).

The last matrix rating format question uses the same five-point rating scale and focuses on the perceived value added by six factors to the Marketing strategy / management learning experience (see exhibit 25). The six factors rated are (a) Initial simulation briefing during the 'Prepare to Compete' phase, (b) Intermediate simulation debriefing during the 'Compete' phase, (c) Intermediate simulation debriefing during the 'Report & Present' phase, (d) Final simulation debriefing during the 'Wrap-up' phase, (e) Online Product Portfolio Analysis (PPA) and Product Positioning Map (PPM) graphics packages, and (f) Marketing DSS Excel-based packages. Ratings include 'No Value Added' (1), 'Some Value Added' (2), 'Moderate Value Added' (3), Substantial Value Added' (4), and 'Significant Value Added' (5).

The survey responses on the perceived value added by these six factors to the Marketing strategy / management learning experience are followed by basic statistics (See exhibit 25). A majority of responses indicate either substantial or significant value-added. The mean ratings of the five elements range from a high of 4.33 for both (a) Online PPA & PPM graphics packages and (b) Marketing DSS Excel-based packages, to a low of 3.50 for Intermediate simulation debriefing during (a) the 'Report & Present'

EXHIBIT 22
FINAL SIMULATION DEBRIEFING DURING 'WRAP-UP' PHASE - SURVEY

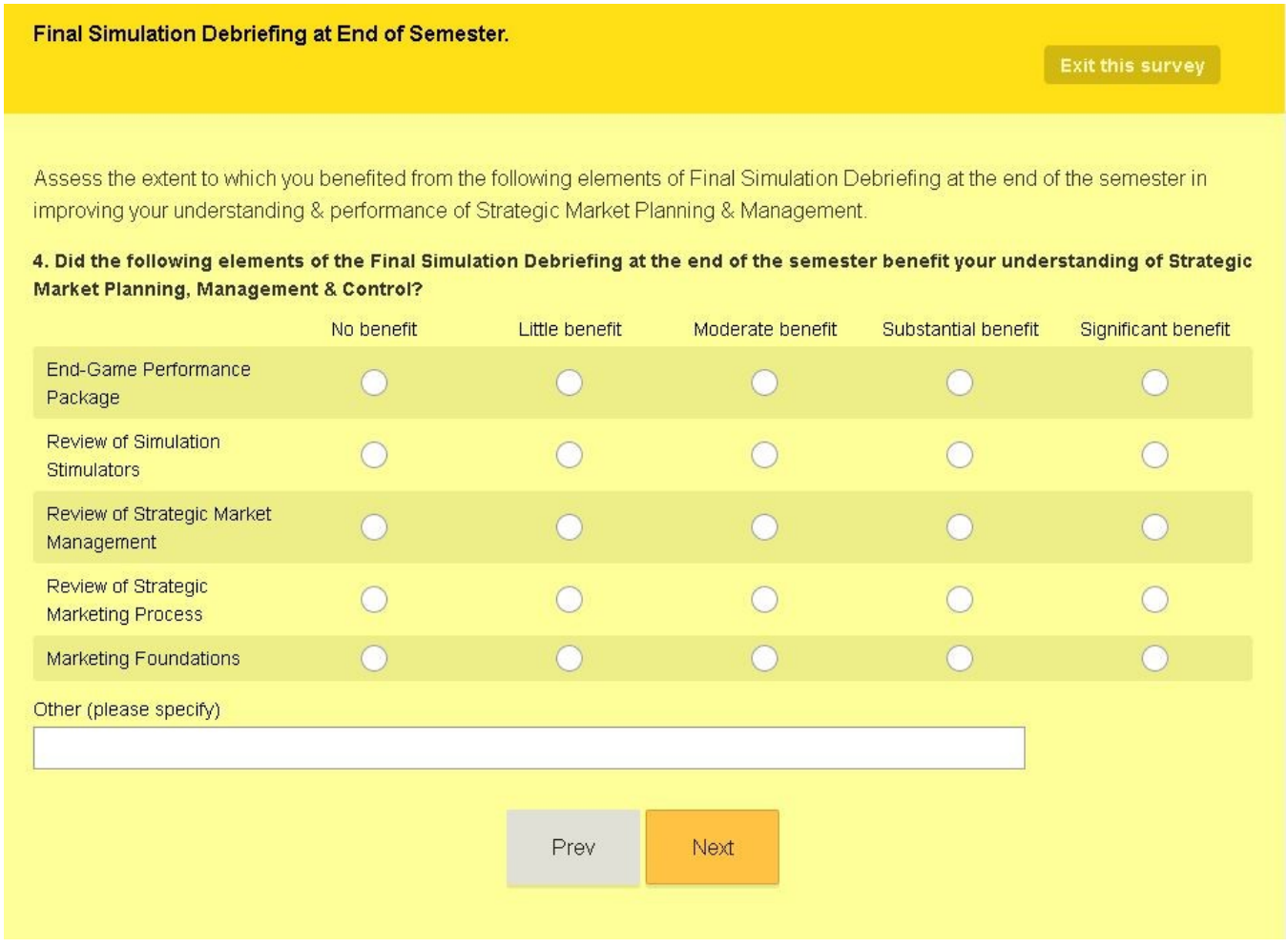


EXHIBIT 23
FINAL SIMULATION DEBRIEFING DURING 'WRAP-UP' PHASE – SURVEY RESULTS

Page 4: Final Simulation Debriefing at End of Semester.

Q4

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Did the following elements of the Final Simulation Debriefing at the end of the semester benefit your understanding of Strategic Market Planning, Management & Control?

Answered: 8 Skipped: 1

	NO BENEFIT (1)	LITTLE BENEFIT (2)	MODERATE BENEFIT (3)	SUBSTANTIAL BENEFIT (4)	SIGNIFICANT BENEFIT (5)	TOTAL	WEIGHTED AVERAGE
End-Game Performance Package	0.00% 0	0.00% 0	28.57% 2	71.43% 5	0.00% 0	7	3.71
Review of Simulation Stimulators	0.00% 0	0.00% 0	57.14% 4	42.86% 3	0.00% 0	7	3.43
Review of Strategic Market Management	0.00% 0	0.00% 0	25.00% 2	62.50% 5	12.50% 1	8	3.88
Review of Strategic Marketing Process	0.00% 0	0.00% 0	28.57% 2	71.43% 5	0.00% 0	7	3.71
Marketing Foundations	0.00% 0	0.00% 0	28.57% 2	28.57% 2	42.86% 3	7	4.14

Comments (0)

BASIC STATISTICS

	MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
End-Game Performance Package	3.00	4.00	4.00	3.71	0.45
Review of Simulation Stimulators	3.00	4.00	3.00	3.43	0.49
Review of Strategic Market Management	3.00	5.00	4.00	3.88	0.60
Review of Strategic Marketing Process	3.00	4.00	4.00	3.71	0.45
Marketing Foundations	3.00	5.00	4.00	4.14	0.83

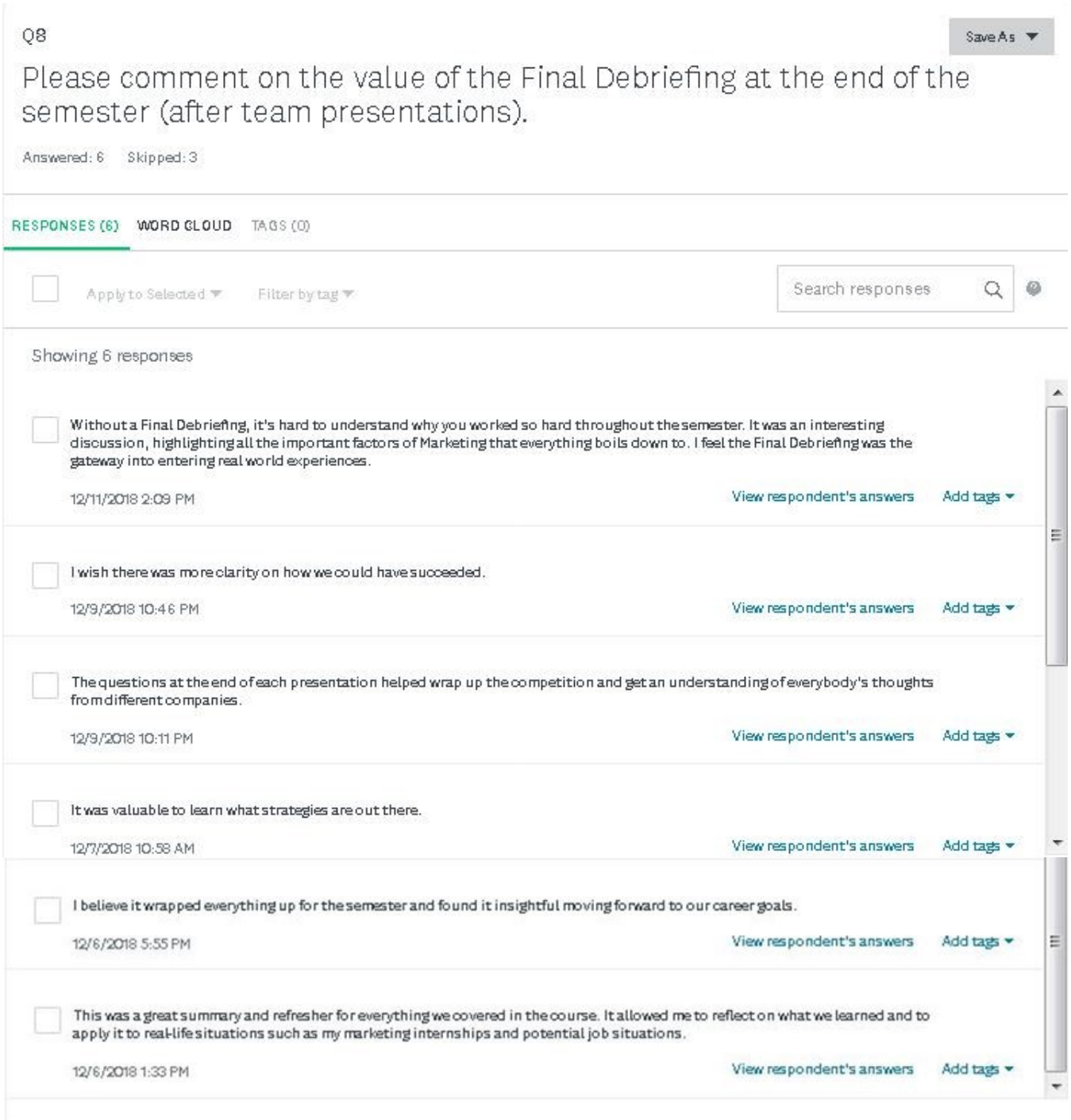
phase, and (b) the Final simulation debriefing during the 'Wrap-up' phase (see exhibit 26).

CONCLUSION

Experiential exercises and board games are often relatively brief, and subsequent debriefings focus on qualitative, subjective concepts such as leadership, motivation, human resource management, and organizational behavior. Capstone computer simulation games frequently involve multiple decision periods that stretch over several weeks and involve quantitative, objective measures of performance such as profit, market share, sales volume, quality index, unit cost of production, and marketing efficiency. Consequently, debriefing procedures for simulation games need to reflect these significant differences. Yet, debriefing tends to be neglected in the simulation literature (Crookall, 1992). Further, most discussions on simulation debriefing do not specify debriefing objectives, techniques and process (Markulis & Strang, 2003).

A panel discussion at the 2004 ABSEL Conference highlighted simulation debriefing objectives, timing, structure and

EXHIBIT 24
FINAL SIMULATION DEBRIEFING DURING 'WRAP-UP' PHASE - COMMENTS



process, in order to foster debriefing research and the development of guidelines for effective simulation debriefing (Fritzsche et al., 2004).

This paper (a) describes a comprehensive phased simulation debriefing process, and (b) presents the End Game Performance package that facilitates debriefing and enhances learning during and at the end of the simulation competition. The simulation experience ends with a review of the strategic marketing process and the skills required to identify heavy-user target segments, understand their needs and purchase motivations, create, communicate, distribute and capture (consumer-perceived) value. This phased debriefing strategy turbocharges participant engagement early in the semester, and heightens interest, motivation, confidence and understanding among simulation participants.

Survey responses by simulation participants to a post-review online phased simulation debriefing survey indicate substantial and or significant perceived benefit to (a) understanding of the simulation via the initial simulation briefing during the 'Prepare to Compete' phase, (b) understanding of simulation performance via the intermediate simulation debriefing during the 'Compete' phase, (c) understanding of strategic market planning, management and control via both the intermediate simulation debriefing during the 'Report & Present' phase, and the final simulation debriefing during the 'Wrap-up' phase at the end of the semester. The basic statistics on each of the four simulation debriefing phases are supported by open-ended comments by survey respondents. In addition, survey respondents indicated substantial and or significant value added to the Marketing Strategy and Management learning experience by the Online PPA and PPM graphics packages and Marketing DSS Excel-based packages.

Given the significance of simulation debriefing, and the enhanced engagement and motivation of past and current participants that resulted from the phased debriefing process, ABSEL members may wish to improve and streamline the simulation debriefing process. A best-practices simulation debriefing workshop, and/or an ABSEL Simulation Competition during which ABSEL member participants explore and evaluate alternative debriefing strategies, may help in this regard. Alternative proposed debriefing processes can be tested and evaluated, and suggestions for improvement provided.

EXHIBIT 25
MARKETING STRATEGIES COURSE LEARNING EXPERIENCE - SURVEY

Marketing Course Learning Experience.

Exit this survey

Assess value added to learning experience by the Initial, Intermediate and Final Simulation debriefing.

9. Rate the value added to the Marketing Strategy/Management learning experience by the following factors:

	No value added	Some value added	Moderate value added	Substantial value added	Significant value added
Initial Simulation Briefing during the 'Prepare to Compete' phase	○	○	○	○	○
Intermediate Simulation Debriefing during the 'Compete' phase	○	○	○	○	○
Intermediate Simulation Debriefing during the 'Report & Present' phase	○	○	○	○	○
Final Simulation Debriefing after Team Presentations	○	○	○	○	○
Online PPA & PPM Graphics Packages	○	○	○	○	○
Marketing DSS Excel-based Packages	○	○	○	○	○

Other (please specify)

Prev Done

EXHIBIT 26
MARKETING STRATEGIES COURSE LEARNING EXPERIENCE – SURVEY RESULTS

Q9

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Rate the value added to the Marketing Strategy/Management learning experience by the following factors:

Answered: 6 Skipped: 3

	NO VALUE ADDED (1)	SOME VALUE ADDED (2)	MODERATE VALUE ADDED (3)	SUBSTANTIAL VALUE ADDED (4)	SIGNIFICANT VALUE ADDED (5)	TOTAL	WEIGHTED AVERAGE
Initial Simulation Briefing during the 'Prepare to Compete' phase	0.00% 0	16.67% 1	16.67% 1	33.33% 2	33.33% 2	6	3.83
Intermediate Simulation Debriefing during the 'Compete' phase	0.00% 0	0.00% 0	50.00% 3	16.67% 1	33.33% 2	6	3.83
Intermediate Simulation Debriefing during the 'Report & Present' phase	0.00% 0	0.00% 0	66.67% 4	16.67% 1	16.67% 1	6	3.50
Final Simulation Debriefing after Team Presentations	0.00% 0	0.00% 0	50.00% 3	50.00% 3	0.00% 0	6	3.50
Online PPA & PPM Graphics Packages	0.00% 0	0.00% 0	16.67% 1	33.33% 2	50.00% 3	6	4.33
Marketing DSS Excel-based Packages	0.00% 0	0.00% 0	16.67% 1	33.33% 2	50.00% 3	6	4.33

Comments (0)

BASIC STATISTICS

	MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
Initial Simulation Briefing during the 'Prepare to Compete' phase	2.00	5.00	4.00	3.83	1.07
Intermediate Simulation Debriefing during the 'Compete' phase	3.00	5.00	3.50	3.83	0.90
Intermediate Simulation Debriefing during the 'Report & Present' phase	3.00	5.00	3.00	3.50	0.76
Final Simulation Debriefing after Team Presentations	3.00	4.00	3.50	3.50	0.50
Online PPA & PPM Graphics Packages	3.00	5.00	4.50	4.33	0.75
Marketing DSS Excel-based Packages	3.00	5.00	4.50	4.33	0.75

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