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## INDIVIDUAL PERFORMANCE ASSESSMENT IN BUSINESS SIMULATIONS

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*"Success doesn't come to you; you go to it."* – Marva Collins

Consider the following (typical?) grading system for a large-scale business simulation application in an academic course:

Grading Element	Grading Weight
Within-Simulation Performance	Small
Mid-Event Written Report	Larger
Post-Event In-Class Presentation	Largest

What's missing from this performance assessment system? Individual-specific performance assessment isn't part of this team-based evaluation system. Surely it's optimistic for an instructor to believe that all team members contribute equally to their business simulation team's performance.

In large-scale business simulations, obvious performance assessment elements (e.g., within-simulation quantitative performance, written reports, and in-class presentations) are team based. Indeed, large-scale business simulations are meant to be "team sports" with all of the associated team management challenges.

But, there's still a need to assess individual performance in a business simulation "team sport." Protocols suitable for evaluating individual simulation participants in large-scale business simulations are presented in this LINKS White Paper. Some of the details in the following examples are specific to the author's LINKS simulations portfolio, but all can, in principle, be used in any large-scale business simulation.

Since the instructor is never present for all of a simulation team's deliberations, performance assessment of individual participants in large-

scale business simulations has to be based on some combination of:

- what individuals "say" (or write)
- what others "say" about individuals
- what individuals do,

This organizational framework is used in the following discussion of individual-specific performance in large-scale business simulations.

### EVALUATION BASED ON WHAT INDIVIDUALS SAY

What participants "say" via traditional individual-specific writing tasks is the obvious form of individual performance assessment in any team-based course activity. Traditional testing and assessment protocols exist to evaluate individual performance in large-scale business simulations:

- simulation-specific examination discussion questions
- in-class pre-event quiz and spot simulation quiz(es) throughout a simulation event using multiple-choice questions
- post-simulation written assignments and memoranda (*"Advice To My Successor"* or *"What I Learned Via the Simulation"*).

### Sample Discussion Questions That Might Be Included in Written Examinations

The following sample discussion questions might be used in a final examination at the end of a business simulation event. Some questions are specific to the LINKS simulations, but most are relevant to all large-scale business simulations. The presumption here is that the course includes a final examination and some of the final

examination questions might be related to the simulation experience.

- **Discussion Question #1:** Pick any market in the simulation with which you are familiar. Conduct and report an analysis of the value of a market share point. If you wish, you may think of this question in the context of the following scenario. By luck, magic, divine insight or intervention, or thoughtful analysis and management, you have determined that it will cost you \$X to initially "buy" a 1% increase in market share (i.e., one market share point) and an additional \$Y per simulation round will be required to maintain this newly acquired market share point. The question of interest is to compare the values of \$X and \$Y against the profitability of the 1% market share increment. Viewing this as an investment, determine the value of the market share point. Alternatively, at least provide a delineation of a method of analysis for determining an answer to this question. Note that a quantitative, not a qualitative, analysis is required.
- **Discussion Question #2:** Consider the following statement about performance in the simulation: *"Good management is more important than good luck."* Do you agree or disagree? Why? [Hint: Try to provide evidence to support your point of view.]
- **Discussion Question #3 [LINKS products simulations]:** Would you be in favor of or against the elimination of patent protection in the set-top box industry? Why?
- **Discussion Question #4:** Suppose that another person joined your simulation firm now and that the simulation event was continuing for many more rounds. How would you re-allocate the responsibilities of current team members? Or, alternatively, how would you exploit the available time of this new member to the maximum possible benefit of your firm?
- **Discussion Question #5:** Think about your simulation experience. Do you agree or disagree with this statement? *"The ability to learn faster than your competitors is the only sustainable competitive advantage."* Why?
- **Discussion Question #6:** Which research studies in the simulation are most important to your firm? Are there any research studies that aren't worth their current cost? Why?
- **Discussion Question #7 [LINKS supply chain management simulations]:** Suppose that you and all other firms in your set-top box industry had access to an additional product in your LINKS industry. Would the existence

of an additional product increase, decrease, or have no impact on the use of postponed production in your set-top box industry? Why? [Hint: Explain in detail.]

These discussion questions are generally complex enough so that they could be used in take-home examinations, if desired. All of these questions require thoughtful analysis and discussion; they are not just simple recall questions. On occasion, I have even distributed these questions for prior study/review, and have advised students that questions such as these would be fair game for examination purposes

### Sample Multiple-Choice Test Question

A sample LINKS multiple-choice test question follows. Instructors may access the complete LINKS Simulations Test Questions within the Instructor Resources of the LINKS website (<http://www.LINKS-simulations.com>).

Topic: Strategy

Sub-Topic: Planning and Tactics

LINKS Variant(s): All

Answers: 5

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In LINKS, which of the following environmental uncertainties is the **most important** when preparing contingency plans during your firm's forward-looking business planning efforts?

- (A) Uncertainty about changing customer preferences.
- (B) Uncertainty about market saturation and potential levels.
- (C) Uncertainty about seasonal and cyclical trends.
- (D) Uncertainty about changing costs.
- (E) Uncertainty about competitors' activities.

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Best Answer: (E)

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Explanation: All of these environmental uncertainties are real and meaningful.

However, competitors' activities are the most difficult to predict well and the most impactful on a firm's results (LINKS firms operate in a competitive marketplace). Uncertainty about competitors' activities are, therefore, the most important of (A)-(E) when preparing contingency plans in business planning efforts.

Given 200+ sample multiple-choice test questions available in the LINKS Simulation Test Questions test bank, a LINKS instructor can quickly and conveniently construct suitable quizzes for use at the beginning of or throughout simulation events.

Such in-class quizzes might be completed by pairs of students, to encourage additional learning opportunities that arise when pairs of students discuss such multiple-choice questions.

Open-book (i.e., "open simulation manual") multiple-choice quizzes can reduce some student angst about memorization. Of course, extensive manual consultation will use up significant time within a time-limited in-class quiz format.

### **LINKS Memorandum Student Instructions**

A LINKS memorandum is a five-page, post-event memorandum on some aspect of LINKS. You're writing to your successors in this memorandum. Pick some relevant part of LINKS and pass on some advice to your successors.

Be detailed and specific! You are trying to convince a LINKS novice to believe that you know what you are doing and to follow your advice. Think of this as writing one chapter in the "book of LINKS." While there may be hundreds of interesting chapters in this "book," you only have to write one of the chapters.

Here's some more advice and some hints about the LINKS Memorandum:

- This is a 5-page single spaced memorandum (double-space between paragraphs). Number all pages. Use normal margins (at least one inch on all sides of the pages) and normal font size (at least 11-point).
- Write a memorandum to communicate something of importance to your LINKS successors, not necessarily in the same LINKS firm or industry. Since this memorandum is designed to be of value to any LINKS participant at any time in the future, it should not contain firm- or market-specific information, except possibly by way of illustration. For example, there is no point saying that market region #1 is quite volatile (even if so in your experience), since another edition of LINKS might have different market environments.
- Any course-relevant topic is appropriate.

- Many LINKS participants have developed sophisticated spreadsheet tools for tracking, analysis, budgeting, and planning purposes. Your memo might focus on the what, why, and how of your spreadsheet tool. The major focus of a spreadsheet memo would be on building the case for your spreadsheet tool. Little attention should be given to the mechanics of running the spreadsheet. For a spreadsheet-related memo, you may include several additional pages that contain sample spreadsheet printouts. A spreadsheet-related memo must also include the actual spreadsheet (as an e-mail attachment).
- You might develop a new research study that summarizes the data reported in other already-existing LINKS research studies. Alternatively, you might develop a totally new research study, but one that is consistent with the general infrastructure in LINKS. Your requirements in developing a new LINKS research study would be two-fold. First, you would prepare a maximum four-page justification for the rationale and merits of your proposed research study. Second, you must show the form (i.e., provide sample output) of the research study output. This single-page single-spaced output must follow the standard LINKS style, involving a maximum of 50 lines and 77 typewritten characters per line. (Use a fixed-space type font, such as Courier, in your sample output page.) Your sample output must contain only standard lower-ASCII characters like those used in already-existing research studies. Do not use graphics output like pie charts or time series plots, since such graphics characters may not be accessible to all users of LINKS.

If in doubt, it is better to focus on a very narrow topic, and do a good job on it, rather than attempt to tackle a broad topic (that might require 10s of pages to do well).

Based on past experience, better LINKS memos offer detailed, specific, immediately-actionable, example-laden counsel on important issues and challenges facing future LINKS participants. Less-than-excellent memos tend to be vague, offering only high-level textbook-like observations with relatively little direct actionable relevance to LINKS. Poor LINKS memos paraphrase the LINKS participant's manual, adding nothing new or important to the "book of LINKS."

## Self-Evaluation

Near the mid-point of a business simulation event, assign each participant with a self-assessment task. A mid-event timing is desirable so that there's an opportunity to improve performance during the second half of the simulation event.

This short written assignment (three-page maximum limit?) might include these topics:

- Within the business simulation, what are your personal strengths and weaknesses?
- What are your specific responsibilities within your simulation team? How well are you performing those responsibilities?
- How can you improve your performance in the rest of the simulation event?

The self-evaluation memorandum is presumably a confidential report from the participant to the instructor. Candidness is obviously desirable in such a self-evaluation.

Based on the self-evaluations, the instructor might schedule private meetings with selected individuals to review some of the performance improvement challenges identified.

## EVALUATION BASED ON WHAT OTHERS SAY ABOUT INDIVIDUALS

Peer evaluations are a standard approach to having teammates assess the individual contributions and performance of their simulation team peers. Such peer evaluations are presumed to be confidential communications between the individual students and the simulation instructor.

A simple post-event assessment of the style *"allocate a \$100K bonus to your simulation teammates, excluding yourself; your bonus is based on what your teammates award you"* provides the essential ingredients for an instructor to identify outlying performance across individuals in a team.

A mid-event peer evaluation might be more detailed rather than summary, with a range of rating scales to provide useful diagnostic feedback to each individual. For examples, rating scales like "contribution to team discussions" and "level of preparation for team meetings" are typically used.

## EVALUATION BASED ON WHAT INDIVIDUALS DO

Some dramatic individual performance assessment approaches in large-scale business simulations include:

- Task Individuals with brand or region forecasting responsibility and then evaluate their forecasting accuracy performance. Forecasting accuracy is a wonderful overall performance metric, since forecasting requires plentiful and detailed analysis and insight about the underlying markets in the business simulation.
- Hold an investment contest in the latter stages of the simulation (individual participant instructions: *"invest \$1M in one or more other firms in your simulation industry to maximize your personal ROI over the next four rounds of the simulation"*).
- Have an individual competition event supplement with cloned simulation industries. Late in a business simulation event, clone an industry multiple times, once for each team member and then assign one person to run his/her cloned firm for several more rounds. Note that the other "same" firms in the cloned industries are performance benchmarks.

## POSTSCRIPT

Collectively, these individual-participant performance assessment tools constitute a rich set of possibilities for incorporating individual-specific performance assessment within the "team sport" milieu of large-scale business simulations.

The LINKS Memorandum is my personal favorite for individual performance assessment in large-scale business simulations. The wide-ranging quality of such post-event memoranda across individual students permits relatively easy "grading" of poor to excellent individual-specific understanding and performance. Furthermore, the apparent face validity of such a post-event memorandum to students is obvious: after participating extensively in a large-scale business simulation, students should be able to craft some useful and well-articulated advice to their successors.