“Thinking About A Simulation?” Revisited

Kevin Gwinner (Professor of Marketing, Kansas State University) is a longtime LINKS Simulations user and a member of the LINKS Hall of Fame. This is an update/revisit of his Professor’s Column in the December 2009 LINKS Newsletter.

“Tell me about using computer business simulations in a marketing course.” I occasionally get this request from my colleagues as many of them know that I have been teaching with simulations since 1997. My first response to such a request is typically to ask why they want to use a simulation. I ask this because I think having a clear and realistic idea about what you want the simulation experience to bring to your students is key to its success. There are certainly things that simulations can do for students, but also objectives where it is not the most appropriate educational tool. As such, having a good handle on what one wants to accomplish with the simulation is important. For me, one of my primary purposes in using a marketing simulation is to demystify basic market and product analysis and to overcome the sometimes irrational fear of numbers and financial statements that many marketing students have. Aside from this basic question about knowing what your simulation goals are, I break my advice down into things to consider before, during, and after the simulation experience.
Before the Simulation Starts

Before the semester starts, you should plan to spend some time understanding how the simulation works. On one level I mean that it is important to understand how students will input decisions, access data, pay for the simulation, etc. But it is more critical to understand the relationships between the variables that the students will manipulate and the key outcomes, such as net income and market share, that they will be tracking (and perhaps evaluated on). During the semester, students will invariably want to know how a change to decision variable “A” will impact outcome “B”. The instructor will have to decide how much to tell them and how much to let them figure out on their own (which gets back to the course goals of the simulation), but the instructor should always have a good idea of what the relationships are among the variables in the simulation so that he or she can offer sound advice.

A second key to a successful simulation experience is to think about how the course content (perhaps embodied by lecture and readings) ties back to the students’ simulation experience. This needs to be done before the course begins so that you can time the other experiences to correspond to what students are doing in the simulation. For example, in the simulation I most often use, students are first engaged in identifying customer needs, selecting target markets from this information, and launching new products. As such, I time my in-class lectures on these topics to be at the beginning of the semester. This has two benefits. First, it can provide them insight and context into what to consider when making these decisions in the simulation. And, second, it allows for the simulation to reinforce what we are discussing in the course.

A third thing to consider before the simulation starts is how you will count simulation performance in the overall course grade. I am a big fan of making it a substantial aspect of the students’ grade (at least 20 to 35 percent) so that they will take the simulation seriously and devote sufficient time outside of class. I also find that making the simulation a competition between student teams does wonders for increasing students’ motivation to perform. In the past, I have taught a marketing management class where nearly two-thirds of students’ grades were tied to the simulation in some fashion. About half of the students’ simulation points came from their teams in-simulation performance (measured by net income) and the other half was based upon written assignments tied to their simulation experience. More recently I tried a “flipped classroom” approach in an MBA course with lectures being delivered outside of class via video, thus freeing up class time for content-supporting activities. One of the things I did with this extra class time was to add additional in-class exercises that used the simulation for their context and to give students occasional team meeting time in class where I could more directly interact with them as they made decisions. It has taken me awhile to evolve to this point, and I would advise new users to start off with a smaller, but still significant, amount of points attributable to the simulation and then to increase that amount over time as they deem appropriate.

During the Simulation Experience

There are several things a faculty member can do to facilitate a successful simulation experience for students during the simulation. Of course, all students will be expected to read the simulation’s written
instructions. However, I find that additional class time devoted to introducing students to the simulation variables, how they will be graded, how to access and understand research information, and even where they input their variable changes is critical. My simulation introduction, which includes the simulation’s variables, output, input screens, and initial financial analysis, takes about three to four hours of class time spread out over several class periods. I have taken Randy Chapman’s advice and give a quiz on some of the aspects of the simulation. I make this an open-note quiz and distribute the questions a week in advance. My goal is that the students will all know the answers to every question and in looking them up, will learn a lot more. This is my way of making sure they know the “rules of the game” before we start playing and understand the key parts of the manual.

Secondly, I feel it is important that faculty be open to meeting with teams outside of class. Indeed, I think this is where a lot of the real learning takes place as it allows you to challenge your students’ thinking and the rationale for the decisions that they are making in the simulation. I often meet with teams and individuals after class and during office hours to quickly help them with a particular question. You don’t want them frustrated or misinterpreting information when a short conversation can often point them in the right direction. I find that even if a team is doing poorly relative to the competing teams, they will feel OK with this if they can make the connection between their actions and their results (and start thinking about a path to improvement). One of the worst things that can happen is for a student team to start believing, and then convincing the rest of the class, that the simulation is random and lacks real world correspondence. By meeting with teams often during the semester, any issues like these can be sorted through and successfully resolved. That said, there is a fine balance that must be learned through experience regarding how much to tell students and how much to let them discover on their own.

I make it a point to talk about some aspect of the simulation in every class period. Once a week, I review results by showing graphs in class that illustrate team progress on key results such as market share, net income, and revenue. This gets students excited about the simulation and they are anxious to see these results in class. The leading teams get some recognition and those lagging behind become motivated to improve. Other times, I will take 5 minutes to introduce a research report I feel is being underutilized or might be useful in the near future. I also like to spend some time talking about things in the news that relate to the simulation as this can help give the students’ experience some additional context. For example, a company that is thinking about launching a flanking brand into an existing market might illustrate a real world issue that a simulation team is also wrestling with at the time. The key point here is that making the simulation a part of each class period, even if only 5 minutes, will keep the students engaged and thinking about their company.

Finally, and this is very important to a meaningful simulation experience, you must encourage fact-based decision making. In most simulations, teams are responsible for making decisions, but not for justifying those decisions. The real learning in simulations comes from an iterative analysis–decision–results cycle. When done right, students learn from their mistakes and from their successes and are able to gain valuable insight into marketing phenomenon. When done wrong, students guess about what they should be doing in the simulation, they do poorly (or every once in a while guess correctly and do well), and don’t learn much. Encouraging students through your advice, assignments, or even
“threats” to make decisions based upon feedback from the simulation will enhance their experience. One approach to this is to require student teams to hand in a list of their decisions each round with justification about the changes to any decision variables (e.g., why advertising $ went from $X to $Y). My thought would be to do this for the first few rounds until you felt comfortable that their decisions had reasonable logic behind them. Such an assignment would be a more detailed complement to the LINKS After-Action Review form that can be required to be turned in to the instructor following each round.

After the Simulation Ends

Simulations can be played individually, but I feel that more learning takes place in a team setting where students can bounce ideas off of each other and practice using their persuasion skills to convince their teammates that their approach is superior to other alternatives. Of course, this means that students must be held accountable to each other and the professor. I am an advocate for end-of-semester team member evaluations that are structured in such a way that the individual student can ultimately earn more points than the team score (or fewer) based upon his or her actions over the course of the semester. I also believe in Randy’s firing memo approach at the start of the course to get teams started thinking about what it means to be a team member and to set the expectations for team membership from the start. Recently, I have also been administering a mid-semester peer review and self-assessment to proactively head-off team issues that might arise, before they become critical.

Because decision rounds come quickly and there are typically other elements in the course, I find that an end-of-semester presentation is important to allow student teams some time to reflect upon what they have done or perhaps to think about what they would do now that they know what they know. I have used retrospective types of end-of-semester assignments where students reflect on their decisions. But I have also used more forward-looking marketing plan assignments where they assume the role of a new company entering the existing industry. In this forward-looking approach where student teams take the role of a new firm entering the market, I keep the students in the class engaged during the presentations by tasking them with evaluating the other team presentations and at the end playing the role of a venture capitalist by allocating $100 million between at least two teams (not including their own). Teams enjoy competing to see who can raise the most VC money. Both retrospective and forward-looking assignments offer the students an opportunity to reflect on what they have learned over the course of the semester. This is important in simulations as there is not a “list” of subjects covered as one might find in a textbook. As a result, students may need some guidance to help them understand what they have learned through their simulation experience. I find that end-of-semester presentations/reports are helpful in this regard.

All in all, I have enjoyed working with simulations in my marketing courses. I have used them in three different courses so far, and my students always report that they enjoy the experience. However, there are many factors for faculty to consider in their decision to adopt a simulation in their own course. I hope the information I have presented above will be useful in your deliberations.
In standard LINKS usage, an instructor’s class is divided into teams ("firms" in LINKS) that compete against one another within a LINKS industry. This is traditional live direct competition among current-student teams in an instructor’s current course. There are no computer controlled firms in LINKS.

Instructors can include historical LINKS firms as competitors in a current LINKS event.

Competing against historical firms involves a re-play of a pre-existing (historical) LINKS industry with the same setup, market conditions, and within-event instructor-optional switches. In this LINKS re-play, some firms are managed by current-student teams who compete against the historical decisions of other firms within the re-played LINKS industry.

This LINKS innovation will be especially interesting to instructors with smaller classes whose only other viable alternatives would seem to be:

- Use an inert firm, which provides uninteresting competition.
- Use more smaller-sized teams to provide meaningful competition in a LINKS industry. Smaller-sized teams may miss the richness and associated inherent learning opportunities of within-team discussions in larger-sized teams.
- Seek to join forces with another instructor using the same LINKS simulation variant with a similar event schedule in a cross-institution LINKS industry.

In a re-play of a pre-existing (historical) LINKS industry, some firms are composed of current students in an instructor’s course while other firms (and their decision inputs) are drawn from the historical LINKS archives. Instructors can freely mix-and-match current-student teams and historical competitors within a re-play of a pre-existing (historical) LINKS industry. By assigning current-student teams to manage lower-performing historical firms in a re-play, better-performing historical teams provide meaningful and even challenging competition for current-student teams.

Since the current and historical firms are competing in the same LINKS marketplace, they both have to (for current firms) or had to (for historical firms) respond to common underlying market forces such as cost structure, market drivers, and market growth patterns. Thus, such historical firms provide meaningful competition for current-student teams.

For more details (including logistics and practical considerations), please access the LINKS White Paper “Competing Against Historical LiINKS Teams” from which this text is abstracted.

Instructors interested in exploring the option of a LINKS event with their current-student teams competing against historical LINKS teams are invited to contact Randy Chapman, the LINKS author (Chapman@LINKS-simulations.com) for conversation.
I teach three sections of the capstone course in Supply Chain Management at Penn State. Each section has about 25 students split into five LINKS teams. In preparing for the upcoming Fall 2013 semester, I started to really consider motivating my students to put more time into the simulation through participating in the LINKS Global SCM Competition. To make the final decision, I was forced to understand the issues, advantages, disadvantages, and instructional challenges associated with organizing 15 LINKS teams across three course sections into LINKS industries. As far as I could tell, there are three options.

(1) Traditional Within-Section Industries: The benefit of the traditional setup is the ease and familiarity of setup. Each section is easily split into one industry with five teams. Students like the experience of competing within their section as it provides some level of visibility of their competition and creates an easy scenario for the award ceremony at the end of the semester when the final winner is announced. However, students cannot learn from the other teams in their section until the end of the simulation without hurting their own grade. Discussions about strategies in class are extremely limited.

(2) Cross-Section Industries: Instead of creating an industry within each section, I could put teams into industries that cut across sections. With only three sections and 15 teams, students would need to be either in tiny (three team) industries or there would be several teams from each section in each industry. This could help the students discuss strategies with some other teams in their section but would not enable full communication. Class time could not be utilized to discuss the pros and cons of specific strategies without giving away “trade secrets.”
(3) LINKS Global SCM Competition With Teams Spread Across LINKS Global SCM Competition industries: Putting students into the LINKS Global SCM Competition seems to provide the best opportunity for this setup. I can put one team from each section into a global industry so that teams A1 B1 C1 are in global industry 1, A2 B2 C2 are in global industry 2, etc. There are five industries to be aware of and determining the winners for the award ceremony at the end of the semester will be a definite challenge. However, the ability to discuss specific strategies and confront problems that all teams face in a group setting should overcome these challenges. The biggest benefit in this dimension will be the mid-competition “Presidential Review Meetings” where teams discuss the first half of the simulation and received feedback from me. Now, every group can openly discuss their strategy and teams can learn from others teams’ successes and failures.

Historical Benchmarks

How high is “up”? In LINKS, the answer is partly provided by the within-industry benchmarks reported on the first page of each firm’s financial reports. These within-industry benchmarks provide a firm’s current-industry performance “ups” (current-industry minimums, averages, and maximums) on Key Performance Indicators such as Net Income To Revenue % and Forecasting Accuracy %. However, the larger question remains: what’s possible? … what’s the upper limit of performance? The LINKS Historical Benchmarks provide the answer to this broader question.

LINKS Historical Benchmarks are based on the history of all firms since February 1, 2012 for a particular LINKS Simulations variant.

These Historical Benchmarks provide a meaningful cross-industry performance reference for any firm at any point in time in a LINKS event. For example, a firm in a LINKS Supply Chain Management Simulation industry in Month #6 may compare its performance to all past firms in Month #6 of LINKS Supply Chain Management Simulation industries via the Historical Benchmarks.

Note: The Global Top-10 Rankings also provide benchmarks, but the comparison in the Global Top-10 Rankings is to all other firms in all LINKS Simulations variants with a scheduled game run in that calendar week. And, of course, those other firms are using any LINKS Simulations variant (not necessarily your LINKS Simulations variant) and are at various stages in their LINKS events.
The 2013 LINKS Global Services Competition is scheduled for October-November 2013.

The LINKS Supply Chain Management Simulation is used in the LINKS Global SCM Competition.

Highlights of the LINKS Global SCM Competition:
- Cross-Institution 8-Round Supply Chain Management Simulation Competition
- Your Student Teams Compete Against Student Teams From Other Institutions
- Challenges Students in an Intense Team-Based Cross-Institution Competition
- For Students in Academic Degree-Granting Programs Worldwide
- Targeted at Upper-Level Undergraduates and all MBAs

Further details about the October-November 2013 LINKS Global SCM Competition (scheduling, student eligibility, costs, and registration procedure) are accessible via the Global Competition link on the LINKS Simulations website.

Registration signup and payment deadline for the 2013 LINKS Global SCM Competition is September 27, 2013.

Participating in a LINKS Global SCM Competition is an alternative instructional/learning opportunity to the traditional usage of LINKS within a single instructor’s course (i.e., an event with students from a single course conducted according to the course instructor’s preferred scheduling).

Faculty members with questions about the LINKS Global SCM Competition are invited to contact Randy Chapman, the LINKS author (Chapman@LINKS-simulations.com).
The Forecaster Simulation is an engaging, interactive 1-2 hour outside-of-class learning-by-doing tutorial that complements LINKS simulation usage.

- The 5 forecasting problems in the Forecaster Simulation are relevant to a wide range of introductory and elective business strategy, marketing, operations management, services, and supply chain management courses.
- The Forecaster Simulation includes within-simulation debriefing notes for each forecasting problem, accessible after completing each of the forecasting problems.
- Individuals or small teams can work on the Forecaster Simulation, with 2-person teams recommended for teaming’s incremental learning.

Access the Forecaster Simulation via links on the main LINKS Simulations webpage and on each of the specific sub-webpages for LINKS simulations. A link also exists in the variant-specific sub-webpages in the Instructor Resources with a related link to the associated instructor notes for the Forecaster Simulation. The Forecaster Simulation direct URL is:

The Forecaster Simulation is a value-added offering of LINKS Simulations. There’s no cost to using the Forecaster Simulation, but a passcode (e-mailed upon request) is required. A passcode may be requested within the Forecaster Simulation webpage.
Where In The World Is LINKS Simulations?

INKS Simulations exhibits at 10-12 conferences annually to reach out to prospective LINKS instructors and to interact with existing LINKS users.

We’ll be exhibiting at these conferences in the near future:

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<tr>
<td>September 18-20</td>
<td>Marketing Management Association @ New Orleans</td>
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<tr>
<td>October 6-9</td>
<td>INFORMS Annual Conference @ Minneapolis</td>
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<td>October 19-20</td>
<td>CSCMP Educators Conference (SCMEC) @ Denver</td>
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<td>October 30-November 1</td>
<td>Society For Marketing Advances @ Hilton Head</td>
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<td>November 16-19</td>
<td>Decision Sciences Institute @ Baltimore</td>
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If you’re attending any of these conferences, please do stop by our exhibit to chat.

New LINKS

“A few things matter most. Find those things.” - Richard Koch

A new white paper has joined the evolving LINKS White Papers collection: “Instructing Through Price Wars.”

Industry-wide price wars, with associated lack of profitability, in competitive business simulations can be stopped by vigilant instructors who just do not passively accept continuing industry-wide unprofitability and, generally, lack of reasonable profitability.

Good instructor practice in the face of price wars includes initiatives, efforts, and actions before- and after-the-fact.

The approaches detailed in this LINKS White Paper provide practical advice to instructors for coping with price wars when teaching with competitive business simulations such as the LINKS Simulations.
Presidential Review Meetings
Best-Practice Presidential Review Meetings

What?
- Private, pre-scheduled 30-minute meetings with each LINKS team to permit the LINKS instructor to review a team’s LINKS business, to answer team members’ questions, and to sense the progress that teams are making in the simulation. This is one-with-a-few style of teaching/coaching, rather than the one-to-the-masses lecture-hall style of instruction.
- “Private” due to the competitive nature of LINKS.

Why?
- Provides a different kind of powerful teaching/learning opportunity (instructor as coach) at key points during the simulation event.
- Simulates business review meetings with a “boss” or senior management official.

Who?
- Instructor and all members of a single LINKS team.
- Instructor plays multiple roles during a presidential review meeting: “firm president,” instructor, coach, and encouraging/proud/supportive “parent.”

When?
- Re-assigned class time is recommended, with teams not meeting with the instructor using that time for their own private firm deliberations. In most cases, meetings will extend beyond class time, due to the number of firms involved.
- In shorter LINKS event, a single round of review meetings might be held, perhaps just before (or no later than just after) the second decision round. In longer LINKS events, several waves of presidential review meetings might be scheduled with the second round of presidential review meetings occurring at about the mid-point of the simulation event.

Where?
- Private meeting space is required, possibly the regular course classroom for presidential meetings scheduled during class hours.

How?
- Meeting Scheduling
  - Pre-scheduled meetings, normally permitting students to pick their own times from a range of available meeting times.
  - Classroom-hours meeting times might be rotated around all teams, if multiple presidential review meetings waves are held. With a single set of presidential review meetings, classroom-hours meeting times might be randomly assigned.
- Instructor Preparation: Bring printed firm results output to the meeting, to reference during the discussion.
- Meetings Format Options:
  - No Student Prep [Not recommended]: Just discussion and Q&A.
  - Some Student Prep [Recommended]: Team members collaborate and submit (via e-mail) questions/issues to be discussed. Submissions are due at least 12 hours before the scheduled presidential review meeting to permit the LINKS instructor time to review and prepare.
  - Substantial Student Prep [Optional]: SWOT Analysis. Submissions due at least 24 hours before the scheduled presidential review meeting to permit LINKS instructor review and prep.
Some Instructor Questions To Pose During the Meeting:
• What are the largest problems that your firm faces?
• What’s been your best and worst team decision to date?
• Who is the best performing competitor in your industry? Why?
• To customers, what differential advantage does your firm offer compared to competitors?
• How is your firm currently organized (e.g., by function, by region, as a committee of the whole)? Is this organization “best” for the current problems/challenges faced by your firm?

Variations on Private, Single-Team, Scheduled Presidential Review Meetings

• With many industries in very large courses, schedule joint meetings with each firm 1 from all industries meeting with the LINKS instructor simultaneously. Repeat for firm 2, etc. Note that non-competing teams are jointly meeting with the LINKS instructor.

Likely Outcomes Arising From Presidential Review Meetings

For Students:
• Greater emphasis on research study needs going forward.
• More attention to prioritization of issues.
• More focus on the really important issues.
• More systematic attention to division of labor and responsibility assignments.

For Instructors:
• Deep appreciation for team and individual-student progress.
• Ideas for in-class discussion and in-class tutorials, based on common issues and concerns arising across teams.
• Follow-up meeting scheduling for “lost”/“deeply troubled”/“unprepared” teams.
Registration is available for the next five-day, intensive-mode Train-The-Trainer distance-learning seminars for the LINKS simulations. Randy Chapman, the LINKS author, leads these distance-learning events for academic faculty interested in learning more about teaching with LINKS. These intensive-mode seminars include 2-3 hours of work per day during each of the five days of the distance-learning seminars.

LINKS Train-The-Trainer Seminars are offered for the enterprise management, marketing, services, and supply chain management simulation variants.

Current LINKS instructors are invited to pass along this announcement to faculty colleagues and advanced doctoral students who might be interested in learning more about teaching with LINKS.

Experienced LINKS instructors sometimes participate in a LINKS Train-The-Trainer Seminar to refresh their memories of LINKS details just prior to teaching with LINKS or to explore another LINKS simulation variant for a future teaching activity. Such experienced LINKS instructors may elect just to participate in the TTT’s four-round simulation event, ignoring the public teleconferences included in the LINKS TTT program. (PowerPoint decks are e-mailed to all LINKS TTT participants before each teleconference, so such experienced LINKS instructors may freely choose to participate in all, some, or none of the teleconferences as per their availability and interest.)
LINKS Passcode Retrieval: LINKS passcode retrieval for a LINKS participant (student or instructor) is possible via the “Retrieve LINKS Passcode” link on the main LINKS webpage (http://www.LINKS-simulations.com). Executing the “Retrieve LINKS Passcode” operation e-mails the firm’s passcode to the participant’s official e-mail address as recorded in the LINKS Simulation Database.

Student Payment Timing: Student payment with a personal credit card is via the “Pay For LINKS” link on the LINKS webpage.

The published LINKS price (the discounted price) is in effect until the first round of LINKS is complete. Then, the price is increased 25%. This means that we can initialize a LINKS event (and advance LINKS through to its normal starting point) and students can continue to pay at the discounted price until the first scheduled round.

It is not necessary for your students to pay before LINKS begins to have access to the discounted LINKS price. Students must only pay before the first official game run on your game-run schedule to receive the discounted price. Thus, student payments can occur simultaneously with the beginning of a LINKS simulation event. As a practical matter, a final warning/reminder is e-mailed to those students who haven’t paid by the first game run, before implementing the non-discounted price.

E-Mail Address Management: Using their LINKS firm’s passcode, LINKS students may change their official LINKS e-mail address via the “E-Mail Address Management” button in the LINKS Simulation Database. Confirmations of e-mail address changes are e-mailed to the old and new e-mail addresses.

LINKS Instructor Resources: Instructors access LINKS Instructor Resources via the LINKS webpage. Contact Randy Chapman (Chapman@LINKS-simulations.com), the LINKS author, to obtain the username and passcode.