



## One 8-Firm LINKS Industry or Two 4-Firm LINKS Industries?



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### ***When have you used LINKS?***

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I have only used LINKS one time before for an MBA Class and I did it in a 2-day format—a Friday and Saturday. It was very intensive and I used the basic LINKS Supply Chain Management Fundamentals Simulation. The one I am doing currently is the regular form of the LINKS Supply Chain Management Simulation for my undergraduate class. They have eight decision rounds and it runs through the semester. We started it in late September and we finish in late November.

These are two different formats and they both offer different challenges. In both cases, I have the students submit a report a week after the completion of the simulation.

### ***What are those challenges or advantages?***

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In the MBA program—one advantage of a two-day program is that for those two days you do nothing but the simulation. So if you are part-time MBA student working full-time, at least you know that for those two days you are not necessarily responding to issues from the office. This way, you know you will finish at 5 p.m. on Saturday. Most of the students liked this because they knew there was an end in sight and they were finished. It is a very intense experience and everybody is focused. We just go. In fact, I will order in Pizza so they don't even stop for lunch. So there is that benefit. We would also have the option of doing it over two Saturdays. However, from the students I surveyed, more of them liked the two-day format better than splitting the days up because they have to re-learn some things again when they get back into the next session. I like the two-day format for that particular group of people—those who are very busy with work, and family and things like that.

For undergraduate students, it's a totally different perspective. They are in school, and are expected to be in school. So I have LINKS as a supplement to my regular class. Before, every time I have

taught I have had the students do a project. When I had 20 students, you could get five teams that could work on one or two problems that a company was having. Because my class sizes are getting larger, it is harder to find a company willing to host 35 students. Since I had a good experience with LINKS with the MBA course, I decided to try the simulation in a regular-class format. In LINKS, the students are working on it independently of my class. In class, we have just finished inventory, we are in the middle of the transportation module, and coincidentally, they are also making transportation decisions in LINKS. I know there are other faculty where LINKS is the main course, and the lectures build up to understanding LINKS . In this case, I am using LINKS as a supplement and not the actual course per se.

### ***Do the students have enough background knowledge to understand some of the underlying principals?***

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Everybody is starting off on the same level. These are primarily juniors and some seniors. They all have access to the manual and tutorials. The key distinguishing feature of a simulation versus a regular module is that you have to learn by doing. You have to go in there and figure it out. I would be spoiling some of the learning by telling them some strategy. I do try to say that they need to do the tutorials because there is some excellent information that will help them to understand how to read a balance sheet. I don't require them to do it. I do allow some classroom time, particularly after the first decision round for the groups to work on this and go over the results. I view LINKS to be an outside-of-the-classroom project where they can use what they are learning in class.

### ***Are these courses required or elective?***

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The MBA classes are completely elective. Three or four of the 12 students were Supply Chain Majors the others were not. This was an easy way for some students to get some exposure to supply chain management. The undergraduate class however, is a required class for Supply Chain Majors or Minors.

### ***Generally, what do you view as a good size for a LINKS team?***

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Four is the optimum number. I like four. Three is a lot of work. Five could potentially have somebody riding along. In the two-day class, I had one group of three and they ended up winning overall. They really understood the game and made some quick decisions. One person played the role of financial check and the other two brought in ideas. But my preference is always a group of four students.

### ***How do you pick the teams?***

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If you let the students pick teams they often will pick their friends and there is generally less learning because there is too much comfort. In real life, it is generally your boss who is picking various groups and who will work together.

30% of the grade is based on the LINKS performance and report. I decided to make it completely random for the MBA students. I sent an email to the MBA students before the class and said that if any of them felt strongly that they want to work together as a team, to let me know and I will take that into consideration. Well, the three people who ended up winning said they wanted to work together. They had worked together in the past, and took this course together, so those three I put aside.

All the rest were picked at random. I put index cards face down designating a team number and the students had to pick an index card determining the team they belonged to.



With the undergraduate group, I asked everybody to fill out a form listing their interests, strengths, what year they are in, and when they are able to meet. Then I asked for eight people from the class to be captains. So these eight volunteers and I reviewed all of the students' so called 'resumes' and I asked every captain to pick a person for their team based on this information. I started picking from one end, and then at the other end, the eighth person picked twice and went back down the other way. I said "whatever we say in this room doesn't go out of this room." So no one would be embarrassed that they were the last one picked. No one knew what order

they were picked in. The captains could exchange among the teams, and when someone they wanted was picked they might scramble to see who was left. Everyone seemed to know who they wanted at first...then the second round was a bit more difficult. And they really spent more time in the last two picks. I also stipulated that there had to be a gender and grade mix, so if they chose a male the first time, their next pick must be a female, and if they picked a junior, the next pick had to be a senior. I was surprised in watching this process, because I have a general knowledge of the GPA of most of these students because I have had them before and I remember thinking that one of the



strongest students was just not getting picked until the very end. They didn't know they were passing over a very gifted student. If I had been picking the teams, I would have paired this strong student with someone I perceived to be as not as strong and put the two together to balance each other. But then again, who is to say? I think the process was perceived as fair.

***What do you see as the pros and cons regarding larger-sized LINKS industries vs. smaller-sized LINKS industries?***

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In any kind of simulation, when teams are competing with other people in the class, it is always easy to get the people who are doing well to be motivated, really enjoy the simulation and spend

a lot of time doing it. They just get better and better. The exact opposite happens with people who do poorly. They get very de-motivated, don't put as much time in and it keeps on getting worse and worse. So I learned that it is better to have industries of four firms instead of seven or eight firms because if you are one or two places away from first, you think you have a chance. If you were the seventh team, it is psychologically difficult to ever think you can win. It spoils the learning experience, and students think there is nothing wrong with their preparation, 'it has to be the simulation that is lacking, or the faculty for proposing it'. That's one reason why I prefer smaller teams competing in several industries. I do know that the two industries are already diverging, in terms of level of competition. This gives the students a chance to say, "I am only one team away from first place," or "I'm in fourth place but first place isn't that far ahead." This keeps them engaged and that is key. You want them to make this a learning experience.

### ***Do the teams do peer evaluations?***

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Yes, I force the students to give everyone a bonus, but it can't be the same amount. With a \$100,000 bonus it must be distributed so that everyone does not have the same amount. At least one member must have a different number. I have done that to catch those who don't perform or even show up. eThey might get a zero bonus, and then I take marks off their final score.

### ***What's been your past experience with simulations?***

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I really like LINKS and the key is that Randy is there to answer questions. He gives some great ideas on what to do and and points out the extra resources. It is fantastic that you can call him up. He has been very good at calls and emails and getting back to you.