

# The Professor's Column



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**A**s I have noted in the LINKS Newsletter before, I enjoy trying out different scenarios within the context of LINKS. First, it creates a true differential between classes that seemingly prohibits students from sharing information across semesters. I repeat to students in every section both at the beginning and end of each semester that every LINKS simulation experience is different because of the customizations that I build into each LINKS industry. I believe firmly that this helps to secure the integrity of the LINKS experience each and every semester. But secondly, it makes each semester unique and fun for me as I try out new scenarios within LINKS. Whether it is using Twitter as a simulated news source, customizing my own preferred alpha-beta levels and their drift rates, or, as in this past semester, setting up a ghost firm that will ultimately be sold to another student firm, it's my opinion that LINKS is the most user friendly simulation on the market capable of creating the most life-like experiences for students. This past semester was no different. I approached Randy Chapman a few weeks before the start of my industry at James Madison University and stated that I wanted to try a scenario where I allowed a benchmark "ghost" firm to be created at initialization. As Randy and I discussed this possibility, I realized that I had a host of options of what I could do with this firm.

First, I could leave it as an unmodified firm throughout the course to allow students to benchmark against. While I could do this indefinitely, I chose to only deploy this scenario for the first few game runs before revealing the ghost firm's true fate. It was an intriguing part of the experiment. During the first few weeks, the students would benchmark their own results against the ghost firm to see if their decisions were strategically paying off. What an eye-opening, introspective experience it was to see



the ghost firm being more profitable than their own firm. It made them dive head first into the results and marketing research to find out why this was occurring. They emerged to realize that these results were really about short-term versus long-term strategies. They learned that their own short-term investments caused them to be less profitable than the ghost firm, but that those investments should soon turn into profitability that far surpassed the ghost firm (as long as they were managing those strategies correctly). Once this was realized, then I could move onto the next part of my master plan, the corporate buyout stage.

Once revenues for the student firms in the industry started to surpass the ghost firm on a quarterly basis, I had a couple of options that could be possible for the ghost firm. First, I wanted to test the cohesiveness of each of my student groups. Therefore, I offered up the opportunity for individuals to leave their current firms to go be a part of a new competing firm, the ghost firm. I posted “job openings” for the ghost firm, providing job descriptions for each available position within that firm. I set restrictions on who could be hired for the job. For example, I stated that any person could apply for these job openings, but that only one to two people would be hired from any current student firm. This was to prevent any one student firm from having only one or two group members total. Additionally, as the Chairperson (professor), I would be the one making the hiring decisions so each interested candidate had to have a “job interview” with me before they would be hired. They specifically had to indicate during the interview which job position they were applying for (CEO, etc.), why they wanted to leave their current firm, and what strategies did they want to pursue within this new firm. While I did conduct a couple of interviews, there was not enough interest from enough students across the firms to establish a new student firm. While this strategy failed to produce a new student firm, I do not consider this to be a failed exercise. This actually demonstrated, for the most part, that my team building exercises at the beginning of the LINKS experience did actually work to create cohesive groups.



Next, I turned my approach toward a corporate buyout, meaning that I put the ghost firm up for sale. Hence, the purchasing firm would have access to all of the ghost firm’s assets and liabilities. For any firm that was looking to expand its role across the brevity of regions and channels, the purchasing firm would have access to the ghost firm’s Hyperware and Metaware products, manufacturing capacity, and service centers. However, this access would not come without a steep price. After carefully considering the current revenues of the ghost firm, along with its assets, liabilities, and strategic advantage, I set the minimum bidding price for this firm at \$24.5 Million. Upon establishing the rules for an auction for this firm that was to be held in three days time, I allowed the firms to start discussing the advantages and disadvantages of this opportunity. Each firm was required to conduct a cost-benefit analysis given the ghost firm’s current P&L statements. Specifically, they were asked to consider the gaps in the marketplace that these potential new products could fill and whether or not the additional net income from these products would not only pay off the purchasing loan but provide substantially more income to justify the risks. Finally, students were informed that the purchase of this company would take place



through a local bank (Huggins First National Bank – fictitious, of course) at which time they were required to pay off the loan within five quarters time (5Q because I wanted it paid off before the last quarter of results) and at a 6.5% interest rate on the unpaid balance. Immediately, students started to calculate this as somewhere between \$4M - \$6M dollars worth of additional fixed costs per quarter. Hence, I had my initial mockers and scorners, but I also had a couple of very interested firms that asked good questions. I replied to the groups as a whole to do their analysis before they mock and cast away this possibility. After the three days passed, I conducted a silent auction to sell off the ghost firm. (Note, the advantages and disadvantages of a silent auction versus a live auction could be debated; but theoretically, I didn't want the possible increased bid that could be driven from a live auction to be so substantial that a firm could not recover. With the silent auction, a student firm had come to a reasonable number that this amount is what I would be willing to pay, and then bid no more.) Across five student firms, I was handed two bids of zero dollars each, one bid at the minimum of \$24.5M, one bid of \$32M, and the winning bid of \$41M. This was somewhat of a shock to me because I had been informed by the winning firm's CEO before class that she would only offer \$36M. To even her own firm's surprise, the last minute anxiety about losing this opportunity caused her to raise her bid an additional \$5M (even though it wasn't necessary, but she didn't know that). Therefore, the deal was sealed at \$41 Million. Firm 3 (now referred to as Firm 3/6 from this point forward when discussing them collectively) just gambled in a big way, relying on and hoping that their strategic gap analysis would pay off in the long run.

However, this was just the start of my additional duties regarding this customization. I realized before I started this process, that if the ghost firm was sold to a student firm, I now had some quarterly duties of my own, which went well above and beyond the standard reporting and discussion of results. I not only had to track the principle and interest payments of Firm 3/6, but I had to recalculate the Industry KPI's as well. First, as it relates to the loan payment of Firm 3/6. Since Firm 3/6 now had to pay off \$41M in five quarters, their minimum quarterly payment was set at \$8.2M. They were required to pay this in "consulting fees" across either Firm 3 or Firm 6 (they had access to passwords for both firms now) or a collection of both. Additionally, I allowed Firm 3/6 to pay extra principle on the loan each quarter if they so desired; however, they could not pay more than the total cash on hand (from the LINKS Balance Sheet) across both firms. If their total cash on hand across both firms was less than the minimum \$8.2M, then they had to pay \$8.2M in consulting fees but they would have to use the LINKS loans system to take out additional loans on the amount to cover the minimum loan principle. However, if they had \$10.0M in cash between both firms, then they limited to only paying an additional \$1.8M in principle for that quarter. Obviously, it was advantageous to pay down as much as possible to reduce the entire interest expense over the life of the loan, but they had to deduce that for themselves. I kept up with their payments each quarter in Excel, and informed



them what the total payments would be with interest each quarter. They would then email back whether they wanted pay the minimum or if they wanted to pay extra principle, should the cash on hand in their balance sheets across both firms allow.

As for my administrative duties, they did not end at just keeping track of the loan payments for Firm 3/6; I also had to recalculate the KPI's and balanced scorecards each quarter. This was actually the most cumbersome part of the exercise. No longer could KPI's and the balanced scorecard be calculated across six firms (five student firms and one ghost firm), but actual KPI's should be calculated across only five firms now, since Firm 3 now owned the ghost firm (Firm 6). For example, while it was given that Firm 3/6 would probably win market share because of the two new products, they actually would lose points on Net Income to Revenue because of the increased fixed cost associated with their loan payments. Hence, to be fair to each student firm, it was an absolute requirement that I recalculate Firm 3/6's KPIs every quarter. However, I had to manually calculate that myself, since LINKS is not configured to do this for me. Therefore, I had to go back and set up an excel spreadsheet where I could plug in each quarter's results for Firm 3 and Firm 6 to create real KPI measures for the combined firms. Finally, I had to compare those KPI's for Firm 3/6 against all of the other student firms to create a correct benchmark scorecard. This required several hours of initial investment to create the entire worksheet (not to mention figuring out how LINKS calculates all of the KPI's from both this quarter's and last quarter's results); but once this step was complete, then my duties just included a quarter by quarter copying and pasting of results data to calculate all of this information. I then posted new results and KPI scorecards quarter by quarter on a bulletin board outside of my office. This required the students to come up and examine these results with the naked eye (which provided me an opportunity more face time to ask more questions of the firms). I know what you are saying: "Wow, this was a lot of additional work, right?" To be honest, yes, but fortunately for you, I have done all of the leg work. As I told Randy before crafting this article, I am willing to share these calculations and spreadsheets with you the reader should you want to try this specific customization in your class.



But what if none of the student firms would have purchased the ghost firm, then what? Well, I could have let the firm continue to operate as a ghost firm and nothing would have really changed from the initialization. However, my gut tells me that will just never happen. Inevitably, correct application of the gap analysis demonstrates that the purchasing firm is going to have a decided advantage over the other firms. With two additional products, the purchasing firm can tailor their products to the shifting alpha-beta levels to the extent that they can become a differentiator in every single market. Without purchasing these additional products, it is impossible to do this within the framework of LINKS (especially if you customize the initialization to make it impossible). My guess is that every LINKS industry has at least one "get'er done" firm that will purchase the ghost firm. And as the experience was for my class, by just two quarters later, I had multiple firms within our industry realizing that they had let an invaluable opportunity pass them by. So, if I have not foreshadowed the final results already, let me tell you how it transpired.



At Q8, when the corporate buyout was proposed to each student firm, Firm 3 was currently in 5<sup>th</sup> place overall with a total net income of \$26.5M (range of competitors included \$18.9M to \$36.7M) and a stock price of \$116.77 (range of competitors included \$63.35 – \$201.79) per share. However, they were the most efficient operating firm of all with a balance scorecard grade of 86.9 (range of competitors included 83.1-86.4). The problem was that Firm 3 had selected very specific niche markets with lower overall sales. They were profitable in those markets, but compared to most of the other firms, they had fewer overall sales with little room to grow. Since LINKS is all about “Profitable Market Share,” meaning it takes both to win the race, Firm 3 realized they must expand. Unlike Firm 1, who was in the exact same “boat” (or strategic mindset), Firm 3 realized this was their opportunity and they could not afford to miss it. The CEO refused to get outbid thereby prompting her additional \$5M increase on the firm bid, as previously mentioned. But with the purchase of Firm 6, Firm 3/6 took an immediate hit, losing a combined \$6.5M in Q9. Not only did they have a substantial loan payment of over \$10M (including the interest expense), but they reconfigured both of Firm 6’s products to initialize their strategic plan. But losses were short-lived because by Q10, Firm 3/6 was back in the black. They earned a combined \$4.2M in that quarter even while paying off their loan minimum for that quarter. With positive profits while covering their loan expenses, competing student firms started to realize that when the loan was paid off, Firm 3/6 would have significant net incomes. The other firms were starting to worry, as they should have been. In Q11, Firm 3/6 had saved up enough cash on hand over the last two quarters to pay off the final \$24.6M of their loan. Over the next three quarters, Firm 3/6 built their cumulative net income to \$92.2M (not including the \$44.8M in loan and interest payments paid) and a \$312.12 stock price. This is an increase of \$65.7M in net income and \$101.03 per share in stock price over just six quarters (in a 14-quarter game run scenario). The next closest competitor, Firm 1, finished 2<sup>nd</sup> with \$63.9M in cumulative net income, a \$217.80 stock price, and a bittersweet taste in their mouth knowing they had bid zero dollars on Firm 6 in Q8. Oh, the regret!



Overall, this was by far the most fun and pedagogically stimulating semester that I have ever experienced as a college professor. Yes, it took some added work on my part, but in reflection, it was well worth every bit of the time. Likewise, my evaluations seem to indicate that the students enjoyed (maybe rather respected) the experience as much as I. I received the best student evaluations that I have ever received in any single section since beginning as a college professor. Once again, I can’t thank LINKS and Randy enough for the pedagogy that is LINKS. I challenge you to try this customization in your class, especially knowing that I am willing to share my experience (and spreadsheets) with you whenever you may need it.