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Dr. Jarrod Goentzel is the Executive Director of the MIT-Zaragoza International Logistics Program, leading MIT's role in developing novel education, research, and outreach programs through its partnership with the Zaragoza Logistics Center in Zaragoza, Spain.

Please explain how the MIT-Zaragoza program began.



Jarrod Goentzel
MIT-Zaragoza Int'l
Logistics Program

MIT has had a masters of engineering and logistics program since 1998. It is a nine-month full-time masters program. It is aimed at professionals, most who have an average of six-years experience. They look to gain the technical skills that MIT can offer, the innovations and approaches of the new concepts in managing supply chains and we imbed a lot of leadership components in there so that it's not only about solving problems but also teaches the leadership skills to implement the changes. This is important when we get to the LINKS simulation because we are really trying to aim at both the problem solving and the management skills as well as the leadership skills.

Six years ago we set up a partnership with the government in Spain to establish a new research institute called the Zaragoza Research Center. We hired faculty members and built a "start-up university". We established a new masters program that is a sister program to the M-Log program at MIT. The one in Zaragoza we call the Z-Log program. It is a nine-month professional masters program. We also started a PhD program, an executive education program, and extensive research with the faculty members we hired there.

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The Professor's Column

From LINKS SCM To LINKS SOM



Laura Meade
Texas Christian U

The LINKS Supply Chain Management Simulation has been integrated into both the undergraduate and graduate courses in Supply Chain Strategy at TCU for over six years.

The simulation has consistently received tremendous accolades so I decided to venture into another simulation offered through LINKS: the LINKS Services Operations Management Simulation. As part of the Professional MBA program, TCU offers mini courses during the inter-mester break and professors are encouraged to design an interactive course as the contact hours are delivered in an abbreviated time period. Service Operations is not currently listed in the regular repertoire of courses and, having taught operations in the past, I thought this would be a great course to offer.

The course was a success! First of all, the course was capped at 12 students, but as demand grew the cap was lifted and a total of 17 students participated in the simulation.

Having used the LINKS Supply Chain Management Simulation [Extended Edition], I was already familiar with the basics as to how the simulation would run, the comprehensiveness of the manual, the resources available online, the plethora of research reports, and the outstanding support offered by Randy and his team. I was not disappointed. The LINKS Services Operations Management Simulation contains all of the excellent resources offered to instructors as the supply chain management version does.

I admit it did take some concentrated effort on my part to get “up to speed” with the nuances of the LINKS Services Operations Management Simulation. The financial statements are similar. However, the KPIs driving the event are different and the students must focus on decisions relevant in the service industry such as service design, service operations, marketing, forecasting, and IT. Similar to hyperware and metaware in the supply chain management simulation, the service design configuration consists of a seven-character code. Service design elements include service category (household or major accounts), CSR (customer service representative) technical training and service skills training, appointment scheduling, scheduling style, service call duration, and format. Of course, the students also have to decide which research reports they want to purchase to assist them in their decision making.

During an intense three-day session, we completed six runs. As usual, the students were markedly impressed that the simulation could not be “gamed” and how closely it mirrored real life. “The LINKS

Services Operations Management Simulation is a very enjoyable learning tool for MBA students” and “In the big picture, you must focus on what the customer wants and provide it” were some statements given by students.

If you are looking for something new to offer, try the LINKS Services Operations Management Simulation. As with all LINKS experiences, the students walk away knowing they met the challenge and learned something of value!

New LINKS White Paper

A new LINKS white paper has joined the evolving “White Papers” collection on the LINKS website and the “LINKS Papers” collection in the Instructor Resources section of the LINKS website: “Advice To My LINKS Successor”

The full set of LINKS white papers includes:

1. “Best-Practice Teaching With Business Simulations”
2. “Extreme Customization With LINKS Simulations”
3. “Practice Rounds in LINKS Events”
4. “Adding Ethical Dilemmas To LINKS Events”
5. “Individual Performance Assessment in Business Simulations”
6. “Designing Effective LINKS-Based Courses: Required, Recommended, and Optional Elements
7. “Advice To My LINKS Successor”

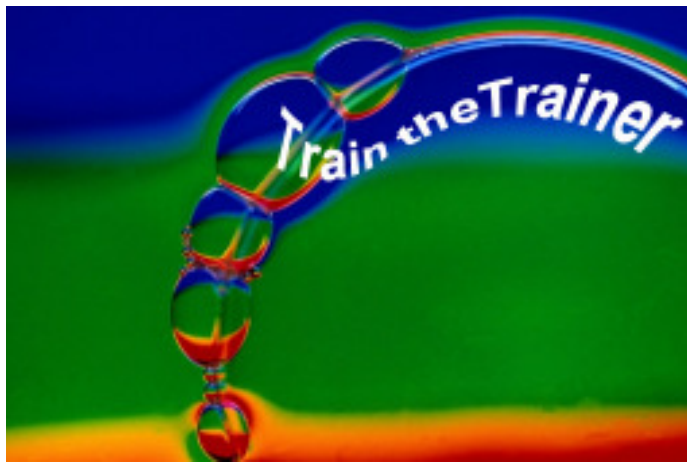
The “LINKS Papers” collection includes articles, presentations, and white papers about the LINKS simulations.

About Forecasting and Forecasting Accuracy

Given the importance of forecasting in running a LINKS business, reading the following article offers a positive return on reading-time investment: J. Scott Armstrong, “The Forecasting Canon: Generalizations To Improve Forecast Accuracy,” ***FORESIGHT: The International Journal of Applied Forecasting***, Volume 1, Issue 1 (June 2005), pp. 29-35.

http://www.forecastingprinciples.com/paperpdf/The_Forecasting_Canon.pdf





LINKS Train-The-Trainer Seminar

March 30-April 1, 2010

LINKS Simulations Immersion Experience

Five Teleconferences and a Four-Round LINKS Simulation Event

Registration is available for the next three-day, intensive-mode Train-The-Trainer distance-learning seminar 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. This intensive-mode seminar format includes 5-6 hours of work per day during the three days of the distance-learning seminar.

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

Details about LINKS Train-The-Trainer seminars may be accessed via these URLs:

- <http://www.LINKS-simulations.com/TTT/EMttt.pdf> [Enterprise Management]
- <http://www.LINKS-simulations.com/TTT/MSttt.pdf> [Marketing]
- <http://www.LINKS-simulations.com/TTT/SMttt.pdf> [Services Marketing]
- <http://www.LINKS-simulations.com/TTT/SCttt.pdf> [Supply Chain Management]

The Professor's Column

Advice To My LINKS Successor



Michael Gallagher
Rivier College

Michael Gallagher was a student in Greg Kivenzor's course at Rivier College. In this course, Michael participated in a team-based LINKS simulation event with the LINKS Enterprise Management Simulation [Enriched Edition]. As part of this course, each student crafted a short "Advice To My LINKS Successor Memo." This is a recommended individual-specific post-simulation assessment writing requirement as part of a team-based LINKS event. This exemplary memorandum follows, for the reading enjoyment and benefit of all future LINKS participants. Thanks to Greg for sharing this memorandum with

the LINKS community and thanks to Michael for his fine work and his willingness to share this memorandum with the LINKS community.



Greg Kivenzor
Rivier College

Welcome to the world of LINKS! Over the next few weeks you are in for a wild ride. If you haven't already read the LINKS manual, then stop reading this and read the manual. In fact, if you haven't already read the manual twice, stop reading this. Over the course of my six weeks with LINKS, I read the manual from front to back no less than three times. Every week I found myself turning to the manual frequently. It's an amazing resource, and one you cannot overlook. Not only does it explain the details of the LINKS environment, it also has some helpful tips. For instance, do you know what your minimum R&D investment should be? No? Then re-read the manual. It's right there. Tips like that are invaluable. Don't miss out!

Now that you have read the manual (at least twice) and have a basic understanding of how LINKS works, let me give you my second piece of advice. You don't know anything. That's right. Don't underestimate the complexity of this game. There are a lot of moving pieces and a lot of unknowns. Just because all your inputs make sense, doesn't mean they're going to work. LINKS customers are just like real customers. Sometimes they buy a lot, sometimes they don't. One minute they like your products, the next minute they don't. Inside LINKS is a real market. Okay, it's simulated, but that doesn't make it any easier to understand. Use your Research Studies, use your manual, and cross your fingers.

Sometimes in LINKS, just like in real life, a little luck goes a long way. That's not to say it's all luck. You need to make your decisions wisely. Just don't get down on yourself if things go badly

for a quarter. It happens. You just have to review your reports, study the research, and make the next move. Don't worry; eventually you'll start to understand it better. Oh, and about those Research Studies, take a good look at the Regional Summary Analysis. It's a great overview of the market. We purchased it every quarter and it always proved helpful.

My next piece of advice is to give LINKS the time it deserves. It's not meant to be easy. You'll learn a lot with LINKS, but it requires patience and plenty of time. If you're not spending a few hours a night pouring over financial reports and research studies, then you're not spending enough time on LINKS. It's a complex game with many parts. Spend time understanding each of the different inputs. Learn how to manage your production and inventory. A 25,000-unit maximum production change might not seem like a big deal, but when your sales start climbing, and you're dipping into emergency production, you're going to wish you managed your production limits a little better. Or how about when your product quality starts tanking and your warranty-related replacement parts costs are skyrocketing? You're going to wish you listened to the manual and kept that \$100,000 minimum R&D spending. I don't need to mention the importance of reading the manual again, right? Spend the time on LINKS and you'll be happy you did.

LINKS provides you with some great resources to assist you along the way. I've already mentioned the manual, but there are also tutorials on the website. Download these tutorials and read through them. I know you'll find them helpful.

Despite all these resources, there are some areas where you'll need to step up and create

your own tools. Spreadsheet and graphs are two of those tools. Numbers can be subtle when they're written on a page. Graphs on the other hand are not subtle. Graphs can really highlight the meaning behind your numbers. Think your sales volume has been fairly steady? Throw the numbers into a graph and see how they look. I bet you'll be surprised. We were. Nothing shows a pricing issue like a line graph of your product sales. Don't use column or bar charts for sales volume. It's too hard to see the changes. Use the line graph. Even subtle changes show up on a line graph. If you're building spreadsheets and using graphs, you can easily see how some changes can affect your numbers. They don't have to be incredibly complex. Even a simple spreadsheet can take the guesswork out of your decision-making.

One piece of LINKS that is a definite unknown is your competitors. Now I know what you're thinking, "How could my competitors be an unknown? They're all I think about." I don't doubt that you're watching the competition, but I bet you're not really thinking about their decisions. What I mean is this: Much like you, your competition is playing LINKS for the first time. They are learning as they go. They are not experts. They are going to make decisions that make perfect sense to them and make zero sense to you. They are also going to miss things that you might think they'll never miss. For instance, let's say your product is doing really well in Region 2. It's clear to you that your sales are strong in that region, because you have a high quality product at a lower price than your competitors. After two strong quarters, you lower your forecasts because you *know* your competition is going to lower their prices to better compete with you. The problem is, they don't lower their prices. And now you've under forecasted and have unfilled orders. See, your

competitors may not be interested in Region 2 because you failed to notice that their product is tailored for Regions 1 and 3. Or maybe they failed to notice that your price was significantly lower, and they were more concerned with your product quality. Now I'm not saying that you shouldn't have lowered your forecasts. That was a good decision based on the information you had. Just understand that there is more to it than that. Your success isn't based solely on your decisions. It's also based on the decisions of your competitors (along with other random stuff). And sometimes, their decisions will be your biggest unknown.

Finally, I have one last piece of advice and that is: Have fun! I know, LINKS is hard and it can be frustrating. The thing is, it's a fun way

to put everything you've learned in your business education to use. You'll never have the power in real life that you have in LINKS. It's an amazing power and you'll see the results of that power very quickly, in just a matter of days. You can make mistakes and learn from them and meanwhile real jobs aren't being lost and real companies aren't going under. It's your own playground. Live a little. Take some risks. Explore all your options. LINKS will reward you nicely or punish you painfully. But in the end, it's just a game. It's a tool to help you learn and better understand how to utilize your skills. You can get a lot out of LINKS if you put a lot into it. And when it's all over, you'll be surprised how much you learned.

Good luck and enjoy the ride!



Alabama Rules!



Congratulations to the University of Alabama football team, national college champions! And congratulations to LINKS user Glenn Richey, a long-time University of Alabama faculty member!





Continued from page 1

We based the curriculum in Zaragoza on the curriculum at MIT. We have been customizing and adapting it according to the abilities of the faculty, so it is changing. Some of the changes we make in Zaragoza we bring back to MIT. We didn't want to just copy MIT, but we built off of MIT's foundation and we get benefits back from the innovations that are happening in Spain. We continue to evolve the curriculum on both sides and share the best benefits and both programs improve as the result.

How did you tie the students together for the LINKS Simulation?

We wanted to have a very close tie between the students in both programs and we also wanted to give the students in each program a chance to study at the other campus. So in January, there is a special period at MIT called IAP, Independent Activities Period. This is a time when most degree programs do not have courses that are required for credit. Instead it is a time when there are a lot of special courses, seminars, and opportunities for travel and internships, etc. for the MIT students. It is basically a month between the fall and the spring semester where we had a chance to do something unique with these two masters programs. We designed what we call our "International Exchange". The students from Zaragoza come to MIT for three weeks, and the students from MIT go to Zaragoza for one week. Basically, the students from both programs are studying together for an entire month.

We have a seminar series we call SKILLS—Supply Chain Leadership and Innovation Series. We bring in executives, vice-presidents of supply chains who come in and talk about innovations in their supply chains and also the leadership skills to implement innovations and how to successfully roll them out in their organizations.

We also do tours of facilities as part of this month-long experience. Everything is focussed on more practical skills—the leadership skills, what executives are doing in their supply chains, tours to see how things are done in practice. It is a very practical approach to see how supply chains are working so the students who have learned the theory in the fall can see it in practice.

This is also where the LINKS simulation comes into play. We call it our "Supply Chain Challenge". The students from MIT, Zaragoza and also we have a third partner program that joined this year for the first time, called the Center for Latin American Logistics Innovation—CLI— which is a certificate program offered to students at top universities in Latin America. Students who are in existing masters programs throughout Latin America can apply to be part of a special course which is offered part of the time in Bogota, Columbia where CLI is located and they spend two weeks at MIT along with the Zaragoza students. There are three groups of students from three different partner centers that are together. We put them together on teams and mix them so that every one of the teams of six have students from all three groups.



This year we had 72 students and we had 12 teams. We divided them into two different industries. Each team may have some students they know but they all have new team-mates that the need to get to know and understand what their capabilities are and how can they effectively work together to win the challenge.

Our program tries to develop both the problem-solving and the supply chain knowledge as well as the leadership skills and working in a team. We are trying to use the simulation for two purposes: to understand and apply the supply chain theory they have learned in the fall, as well as to learn how to work together on teams and develop leadership and teamwork skills.

Are the classes taught in English?

Yes, in Spain, Latin America and here all of the classes are taught in English.

When the students go over to the other country, are they on their own or do they stay with local families?

We have lodging arranged for them. They stay at hotel space that we have for them. The students that study at MIT are from 12 different countries, and in Spain there are students from 20 different countries. Typically we have many countries represented. It is not just students from where the programs are based but it is a very international program in terms of the composition of the class as well.

What is the goal for LINKS to bring to the program?

The objectives are twofold—applying the supply chain theory and analytical skills they developed in the fall and secondly, to develop their leadership and teamwork skills. Each of those is equally important.

It falls exactly midway between the term. We play it over two weeks—they start playing the simulation and have their initial results and have submitted a set of decisions, and then we have a two day workshop on teamwork. There are activities outside of the simulation game but they do it in their teams, so the LINKS teams that are formed go through the teamwork exercises together.

During the workshop, they will submit another set of decisions and after the workshop they submit decisions every day for the next two weeks and we play out to 12 months. We have a class every day and a speaker series is also going on at the same time. During that time, I will occasionally present a stock report, quoting stock prices of the companies. We don't talk a lot about the simulation in the classes because they don't want to share what they are doing. They want to win the game. They keep playing and then we determine the winner and we do a debrief. In the debrief, we talk about the supply chain strategies they used, how they made decisions, what the teamwork dynamics were, how effective their meetings were and how did they plan their meetings? The debrief is dual purposed just like the game is...to review supply chain strategies and review the leadership dynamics.

Teams are randomly assigned, and each team contains students from all the programs, but we also randomly assign their roles. We have a CEO and VP's in five different areas; procurement, production, distribution, marketing & sales, and shared services. They are all appointed. In the past we have tried some different things like firing the CEO halfway through, but right now we are doing it this way. We have considered individual scorecards based on the students results according to the role that they had. We haven't implemented that yet. Right now it is just the teams competing against each other. The winners get a \$50 gift certificate from Amazon.

How long has this program been going on?

We have been doing this for six years and have used LINKS all those years. Students come from different areas of the world, so the global aspect is not new to them. Depending on where they are from, they may have a bias as to which region is the best one to be operating in, which may not be based on data but is based on their own feelings. Sometimes their background will bias their decisions even if it is not backed up by the data. It is good to have a global aspect because most companies that they will work for when they graduate are global companies.

There is a lot of richness to the game, and in some cases given the short period that they play they may not recognize all of the sophistication of the game and capitalize on it. Although some of the teams do take it seriously and develop a mini MRP system or ERP environment where they can put in their forecasts and it create their production plan and link it into their financials. We have had some teams who have done some very sophisticated things in terms of trying to manage the supply chain. In general, most of them are very engaged in the game and enjoy the competitive aspect of it. The students have to write a thesis also in January, and should be working on it during this time period, so I sometimes hear that they spend more time on the game because they get consumed by it.

It's good that they are meeting new students and they get to know each other. Having the fresh blood infuses some energy into the group and helps the competitive nature of the game. They like to have the chance to apply their knowledge. The biggest frustration is that they feel they may not have as much control over the customers based on what it is that makes them want to

buy. Is it product design or marketing spend? They feel that their ability to create demand on the marketplace isn't there and they don't have the model to do that. They aren't sure what is going to make a successful selling product. In the game, they have 9 decision points over 12 days which covers an entire year of the business since the first three months are set up for them and are all equal for the teams.

Has it been the same since you started?

The first year we had a course on international logistics in January and we didn't have a course in Leadership at the time. So I did the simulation game to introduce the global aspect to supply chains. I quickly realized that there was a lot of learning that was happening because of the nature of working on teams and how they made decisions. At the same time, we were hearing from companies that what they wanted in graduates was more than just the problem-solving skill set, that they would expect from MIT. They also wanted people that could have the soft skills to implement the ideas in the company and to lead teams. In the second year, we introduced a lot more on leadership. Students learn about themselves in the fall and during January they are learning how to take the skills they have recognized in themselves and apply it to how one works and how one thinks in a team setting.

One of the things we do halfway through is have a "board meeting". We, a board of two (me, with my co-instructor) sit down with each of the teams and they have to report what their performance has been to the board. Each person from the CEO down has to start out explaining what they have been doing—outlining their strategy and effectiveness. Each VP has to talk about their area and how they are performing. This is another instance where they have to work as a team to communicate their strategy and to be able to address any challenges. Almost every team has some issue or metric they are not performing well on, and we make it hard for them to defend it. We try to shake things up a bit with the board meetings.

How does the travel aspect affect this program?

Travel is an interesting part of the program. Supply chain management is a global profession, so you should understand how things are working in a different part of the world, and how is it different and we also wanted the students to get to know each other better and build a larger network. Having them together is important so we have to travel to do that. I think we do a very good job that one out of the nine months they are studying with their sister program, so it's a significant part of the curriculum.





Reminders

LINKS Passcode Retrieval:

Convenient 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 currently recorded in the LINKS Simulation Database.

E-Mail Address Management:

LINKS instructors submit their students’ e-mail addresses (grouped into teams) as part of the information-set provided to initialize a LINKS industry. Often, these are institutional rather than personal e-mail addresses. Since some participants prefer to use a personal e-mail address rather than an institutional e-mail address for LINKS, it’s possible for participants to update their official e-mail address as recorded in the LINKS Simulation Database.

Participant updates of official e-mail addresses as recorded in the LINKS Simulation Database are possible only after initialization and publication (via e-mail to all team members) of each LINKS firm’s passcode. Using their LINKS firm’s passcode, LINKS participants may change their official LINKS e-mail address after LINKS initialization 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.

Student Payment Timing:

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 your LINKS simulation 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. Before initialization can occur, we do need to receive your game-run schedule and the students’ e-mail addresses (grouped into teams).

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 your LINKS simulation event.

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

As a practical matter, a final warning/reminder will be e-mailed to those students who haven’t paid by the first game run, before implementing the non-discounted price.

LINKS Resources:

- **LINKS Website Resources:** LINKS website (<http://www.LINKS-simulations.com>) links provide convenient access to all LINKS simulation variants, to the LINKS Simulation Database, to passcode-protected instructor resources, and to user interaction contact points such as "Pay For LINKS", "Payment Questions?", and "Retrieve LINKS Passcode"

- **Printed Manuals:** LINKS manuals are freely available for download via the LINKS website. However, some LINKS instructors prefer to have publication-quality printed manuals provided for all of their students, rather than relying on their students to individually download/print the participant's manual from the LINKS website. We're happy to provide this service for LINKS instructors. The all-inclusive additional cost for participant manuals varies from \$18/student to \$28/student depending on the LINKS simulations variant. We normally need three weeks advance notice to arrange for production and shipping (to the instructor) from our on-demand printer.

- **LINKS Instructor Resources Access:** You may access the evolving LINKS Instructor Resources via the LINKS webpage. Contact Randy Chapman (Chapman@LINKS-simulations.com), the LINKS author, to obtain the relevant access parameters (username and passcode).



The LINKS-Simulations Newsletter is a monthly newsletter for current and prospective LINKS instructors and for LINKS friends. Please e-mail questions, comments, suggestions, and other contributions (e.g., LINKS teaching tips) to Winkler@LINKS-simulations.com.



Editor: Cyndy Winkler

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