

# LINKS Spotlight

## The Metamorphosis of LINKS



**Randy Chapman,**  
Founder of  
**LINKS-Simulations**

*Randy Chapman began working on the predecessor to LINKS in the late 70's, well before internet use became commonplace.*

### ***What were you doing at the time that you began developing LINKS?***

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It goes back well before LINKS and then the LINKS story will make sense. In 1979, I was going to teach a Marketing Strategy course at Queen's University replacing a long-time person who was going off on sabbatical. It was a one-year opportunity and I didn't want to teach it as a case course which was the traditional way that these courses were taught. I wanted to create a sophisticated, marketing strategy simulation and that carried on through other places where I was a faculty member. Ultimately it led to the simulation BRANDMAPS published by Prentice-Hall, a leading business-text publisher.

The first edition was around 1985. It went through four subsequent editions with DOS-based software.

The business model was interesting because the software was freely given to the instructor to run and the publisher sold the books to the students. But it meant two things: the author's royalties were fairly small, and there was the question of support--publishers don't have to give support for a text book.

I continued to use it in my teaching at University of Chicago, University of Alberta and Boston University, and got involved in executive education and started to use it there in week-long seminars.

LINKS started when I was doing work for Accenture in the late 90's. I was doing customer relationship management seminars for their young consultants. I was using a smaller version of the BRANDMAPS simulation called BRANDS.

The person I was working with moved from the CRM practice to the supply chain management practice and he asked me if I could create a supply chain management simulation to train their young consultants and also to use with their clients. So in the fall of 1999, LINKS—Supply Chain Management was born.

I built it in a way that the other versions could be included in the same software platform. That just involved hiding some of the supply chain elements and embellishing some of the marketing elements more and getting finer marketing decisions. It also included much more extensive marketing research studies.

Work with Accenture went on into 2003. This included working with clients as well as some distance-learning applications with the simulation. In late 2003, I got all the rights of BRANDMAPS back from Prentice-Hall and was able to go public with LINKS in 2004.

I started to reach out and tried to interest users in both supply chain and marketing versions because it was possible to use the same software platform. The public marketing of LINKS started in 2004, and now seven years later we have nice, steady growth, worldwide usage, and about 200 instructors who use LINKS in one form or another.

LINKS has four different varieties—Enterprise Management, Marketing, Service Management and Supply Chain Management. There are 19 different, specific versions that range from introductory through capstone-type courses in each area.

### ***What changes needed to be made when you changed from a DOS-based program to an internet-based program?***

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That change was huge. As a company, it meant we could maintain it, support it, and run it for instructors as opposed to the old DOS-based universe where the instructor had the software to run themselves. And, quite frankly, good luck if there was a problem because there wasn't an obvious way to get support. That whole industry has changed. In the 90's, simulations were marketed as books through publishers and now they are essentially small dedicated companies, like my own, who provide the simulation and the back-office expertise to run it so the faculty member does not have to worry about that. They just have to worry about working with their students.

In the case of LINKS the web-server acts as an electronic filing cabinet. It allows students to query information like the FAQs, to retrieve results from the last game run, and to input new decisions. In LINKS, the actual game running is on a Windows-based PC. We download the inputs, check them, run it, upload the new results and then email everyone telling them new results are available. All of that takes 20 minutes or so, depending on the number of firms in an industry. It is a totally different business than in the 90's where instructors would work through publishers. Now they work directly with the simulation vendors like LINKS. The simulation is normally a supplement to a course, and instructors still use other materials for their course—textbooks, caseworks, course packs, and custom texts.



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***Switching from the DOS-based to internet-based capabilities must have alleviated a lot of work that the instructors had to do. Did the instructor have to run the program under the DOS-based simulation?***

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Yes, the instructor would have the software on floppy disks, then would run the software to input the new decisions, the students would hand the floppy disks in to the instructor who would then run it, update the new information, and hand the floppy disks back. That cycle probably took a day or so. It might have been a graduate student doing it for the professor, and that raises the issue of “the dog ate my floppy disk” with a read error.

Using the internet, we use a major hosting company to host our website. It has a wonderful 99.8% record of being up, and available 24x7. Students can go in and access it anytime and make changes up until the published game run deadline.

It offloads a lot of administrative work for the instructor. It reduces the instructors risk dramatically because we are there to run it and support it and watch over it. But there are some issues for the instructor dealing with a web environment. The instructor does not control the software so it is a fascinating service business. Students pay their money at the beginning for services rendered downstream. So having a good track-record and enthusiastic instructors who support the simulation with word-of-mouth to their colleagues is a huge thing.

The students normally expect that information will be on the internet. In fact, if you gave them something on an USB drive, (and notice I did not say floppy drive because you can't find those in computers anymore, but an USB drive they would understand), and they would plug it in, but it would seem so foreign compared to the internet.

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***You mention that the instructor does not have control but what has been your experience with instructors who have asked for changes and modifications?***

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There are a huge number of customization possibilities within LINKS to support instructors, such as easing the student into the event at the beginning by de-activating certain web screens so they can't change certain decisions. That allows the student to walk before they run or try out for the Olympics. Other kinds of customization are mid-event things, like adding in a new product, or service, or region, or cost changes. We are able to fit any professor's requirements, with regard to how large a simulation they would like to have, and the sequence of things they would like to have happen.

Another thing is how LINKS evolves. It is very much based on the type of questions that the professor asks—about how things are in LINKS or could things be put in LINKS. That is, by far, the major force of LINKS innovation now—dealing directly with customers. Our business model is a direct distribution method—we get direct feedback ourselves. We are not dealing with a book store staff or publisher's representative to let us know what's going on. Every conversation

I have, and that is probably three conversations a day, by phone or email, is a form of marketing research. It's the things the professors say, the things they don't say—that lead to ideas for streamlining the process.

Here's just one example. Recently, one instructor asked, "Isn't there some way I can get convenient access to all the results in LINKS rather than the instructor web page, which lets the reports be shown?" So, we changed it and now it is there as a zip-file they can download.

Instructors can go to the web site and see all the reports from the games they are running—student reports, instructor's reports, they can see what changes have been made, and activity levels. They do have a full-control panel and it's not like we have the information in a back cave and let no one in.

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### ***What growth have you seen since going to a web-based process?***

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Starting from the small base we had with BRANDMAPS, it was growing at 40% per year and kept that growth for several years. Now that it is a mature business, the growth is more modest—we are looking at about 10% growth over last calendar year.

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### ***Do LINKS students report back on their experience?***

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The students don't report specifically back to us, but almost every instructor uses some sort of course evaluation form because their institution insists on it. We often get the summaries and comments from the students shared via the instructor.

We have a very high repeat-usage rate by instructors which is a strong signal of satisfaction. If the instructors were not happy they would search for alternative ways of teaching.

We do have a benchmarking survey that takes about 10 minutes, if instructors care to use that in their course. It provides an overall assessment of the simulation experience. We now have a fair reservoir of data. It is a value-added service we offer, but not all instructors want to impose another survey on their students if they have to fill out one that is mandatory for their institution. We remind the instructors of its existence about two rounds before it is time to do the survey. The instructor only sees aggregate statistics and no individual comments are revealed. These are just quantitative scales, and there is no space for open-ended comments.

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### ***What are the short-term and long-term goals for LINKS?***

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For the short term, the R&D effort around LINKS is mostly about "usability". Taking what we have and making it more useable. We are constantly working on improving the software so that unusual and special happenings are much more visible to the instructor, instead of being buried in the

results. An e-mail is sent to the instructor after each run when a team does not change any inputs or forecasts, or does not order any research in order to keep the instructor apprised. Probably 90% of our continuing innovation efforts are in making things more visible and usable.

Longer term, we would be looking at dealing with technology changes that are out there. Such as the advancement of Windows, more graphical kinds of interface, decision-support kinds of tools would all be intriguing possibilities.

### ***What do you feel are the features that make you most confident about your product?***

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One is rich content. This is based on very rich, underlying relationships among elements of the business.

In the marketing simulations there is a very sophisticated use of multi channel competition and extensive use of advance research tools to help the participants understand the competitors in the market place.

In the supply chain simulation, there is a very modern view of supply chain management running an inventory pipeline from procurement to manufacturing, distribution, and transportation with postponed production as a significant part of it. Wrapped around that are demand drivers for demand and supply interaction.

The services simulation is the only really large-scale services simulation built in a sophisticated way. It looks at all parts of running a services business.

Enterprise management is a bit different, because there are a lot of business strategy simulations and the focus there is on general managership running SBU's, so profit and loss management is key as opposed to board-level CEO financial structuring of the firm.

Secondly, it is high-touch support. The quality of support that we offer, self-servicing, the extensive FAQs, tutorials, and other web-based resources, and the support that I offer to instructors helping them get started in LINKS, helping them in the early stages and helping them throughout-all are beneficial.