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The Long and Winding (and frequently Bumpy) Road to a Highly Successful Client Engagement: A Case Study

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Abstract

In my four years of consulting to management teams within Hewlett-Packard using system dynamics, my colleagues and I led many successful client engagements, but in my experience, none as successful nor as challenging as this one, with one of our youngest yet most successful and rapidly growing businesses. The client and I rate this engagement as highly successful because in the end, in addition to using the model results to guide their strategic decision process that year, the client took on full ownership of the model, its use as an ongoing decision-making resource, and its maintenance. Yet between the smooth and relatively easy sales process, and the incredibly successful result were a myriad of ups and downs. Beginning with a requested destination to model the "system", our client/consultant team trudged through a morass of business complexity and model details, almost became lost without data to guide us, and struggled with team frustration and divergence. With both a visionary General Manager and a pragmatic Controller as the client leads, I was unsure whether we would ever make our way clear of this modeling jungle!

Yet each obstacle in our road brought learning, insight and new engagement processes, to be shared in this paper. As a result, we developed a model to guide a specific but not restrictive strategic decision area, facilitated an understanding within the entire organization of the dynamic complexity of their business without the detail complexity, organized their data in a way that made it useful for them as it had never been before, and built a strong client-consultant team relationship. This last point is confirmed by their enthusiastic recommendation of our consultant team to another highly important and visible business within HP, the key to our success in winning that contract.[1]

[1] I would like to acknowledge the valuable contributions of my consulting team, Adolfo Crespo Marquez of the Escuela Superior de Ingenieros de Sevilla, Spain, and Carol Blancher of Hewlett-Packard Company, and our client partner, who shall remain anonymous, to the development and delivery of the formal modeling and ownership stages of this project. In addition, due to a family tragedy, I could not participate in the final presentation and workshops given to the client organization. Adolfo, Carol and our client partner took full responsibility for these final presentations, and they deserve the credit for their successful outcomes.

Planning the Trip - Destination: Model the System

The General Manager of this Hewlett-Packard (HP) business was a visionary, a man who could see the potential in new ideas and new approaches. System dynamics intrigued him. During our sales meeting, the business problem we discussed was marketshare, “what specific actions can we take to increase marketshare?” It was a fruitful discussion, and we agreed to do a project together. Yet later, when it came time to formalize the problem statement, things began to evolve.

I had several meetings with the management team, attempting to choose an area of focus. Finally, the General Manager said, “Deb, our problem is that no one, not even me, knows how our business works. We have grown so big so fast, that no one has the big picture anymore, and we need you to help us draw it.” Yow, model the system anyone? It doesn’t take an expert system dynamicist to know that “model our business” is too ambiguous a goal. On the other hand, how could they find a focus without this understanding? What better solution than use system dynamics to pull together knowledge of the business from all parts of the organization, and build a big picture view for them? I had to try.

The management team and I agreed to take a team of 15-20 people from the business, including the GM and his staff, through our standard process: 1) develop a high level descriptive model (a causal diagram) of the important business and market dynamics, and then, based on that descriptive model and further research together, 2) develop a formal model. The focus of both steps was to understand their business as it was, how it operated and what variables they could control or influence. The descriptive model was to be used as a first step in building the “big picture” view for them, and as a communication tool for the organization. The formal model was to be used to deepen the understanding of their current business and its dynamics, and as the foundation for action recommendations. The project team agreed that a successful conclusion of the project would include alignment of the organization on the “big picture”, and delivery of a recommendation and action plan for the management team.

The First Leg of the Journey – Map the Terrain (A Descriptive Model)

Over the years the system dynamics community has developed a well-defined process for creating descriptive models. Our consulting team at HP has our own variation on this process, with the words and techniques tailored to fit our company culture. Yet I discovered during this engagement, more strongly than ever before, that my description of the modeling process, with its neat, clearly delineated steps, was not the process the client team and I were experiencing. I thought for a while that my inexperience in leading such a large group through the process was contributing to the problem. I’d had client teams in confusion before, but never like this. I also questioned whether this team had difficulty with ambiguity. But recently, after discussing the formation of mental models with a couple of learning theory specialists, I confirmed my own suspicion that this confusion is a normal part of the process. I discovered the reason my client team and I were not experiencing the process I described was that I had left some key steps out of my description. There need to be a few steps added, each saying something like, “Step 3: Enter a state of confusion here.” This is what happens every time, and where it happens is relatively predictable. For my client team, the time spent in these states was very uncomfortable and seemed to take much longer than it actually did. It helped to relieve their anxiety when I told them it was normal for it to happen, and for them to feel uncomfortable.

Not surprisingly, the goal of "modeling the business" created its own challenges. This is a significant business to HP, and each team member naturally believed his or her department had an important role to play in the business' success. Following the advice I'd received from several experienced system dynamicists, I did everything I could to keep the discussion of dynamics at a high level, to keep it at a level of detail that was necessary and insightful, and above a level of detail that did not add value. Ha. I did everything but pull my hair out right in front of them! Finally, I gave up. I went with the flow. And while it was tough going for a while, with detail complexity creating it's own confusion, I made some great discoveries.

First, we actually make it through, and while it took some time, we did not get stuck. Once the complexity had been modeled, the team learned from their own experience what I had been telling them: it is too difficult to see the important high-level dynamics or to communicate them to anyone with so much detail. So with a little work, simplicity emerged from complexity. From the original, we created a new descriptive model that represented the high-level dynamics, and was to be a valuable communication tool. This successful outcome led to the second discovery.

My experience, with this client team and others, is that team members are committed to the model only after their own work – the stuff they do everyday – is included. Now, it may be completely invisible in the end, removed to create the high-level model, but by then, they know where it is "underneath". They know how their contribution is represented. Then they believe in the model, and take ownership for it. I have not been able to achieve the same result when I keep client teams at a high level, because they don't see how their work fits into the bigger picture.

Unfortunately, in addition to modeling the system, I agreed to another difficult task at the same time. To allow the team to develop the model themselves by teaching them causal loop diagramming and facilitating the model development. This was a big mistake. It added a learning curve dimension to this complex and ambiguous project, and made project completion even more difficult and time consuming.

With all these dimensions, the amount of time it took to complete process steps, and the difficulty with which we completed them, created a lot of tension and frustration for both the client team and me. There were times when I thought the project was running off the road into the weeds. Several times the team revisited the question "why are we doing this?" and fortunately for all of us their answer kept them going.

While this leg of the journey took much too long by anyone's measure, the results were a tremendous success. The team was very pleased with the high-level descriptive model, and what they'd learned about the business along the way. Client team members held communication sessions with the rest of the organization, using the descriptive model to explain the dynamics of their business, and receiving feedback on improvements that could be, and were, made. The model, and the understanding that was gained from creating it, formed the basis of two important improvements for the organization. While creating and then communicating the model, they had developed a common language with which to discuss their business. This improved their communication and increased the speed of their decision-making. Additionally, the model itself was used as a map, a common context for discussion and decisions. Large copies of the diagram were hung in the hallways, and one was hung in the management team's meeting room. People making project or expenditure proposals were asked to show on the diagram how their proposal would influence the business. As a result, people had a richer understanding of their contribution to the business.

<u>The Second Leg of the Journey – Traverse the Terrain (A Formal Model)</u>

When it came time to develop the formal model, we turned the client team into an advisory team and joined forces with one person from the organization (who I'll call "our client partner") to work closely with us to develop the model and exchange information with the advisory team. Additionally, the GM turned leadership of the project over to his Controller. The Controller was a pragmatic man, a man interested in the specifics of our modeling work. He was skeptical of system dynamics, wanting to know how it differed from his finance team's spreadsheet modeling, and whether our model results could be validated. The switch from a visionary personality to a pragmatic personality was tough. It meant rebuilding the joint vision of the project, and using different methods to do so, as a pragmatic person needs different information from a visionary person.

Our most challenging discussions were about data. He was convinced the organization did not have enough quantitative data about their business to develop a model that could produce reliable results. While I didn't know what data they did or did not have, or how accurate it was, it was clear they were already making strategy decisions based on it. I knew that bringing whatever they had together, quantitative and qualitative, was a valuable place to start. But we stalled. This was a stumbling block, one of the big bumps on this winding road. Suspecting this blockage indicated additional, unspoken concerns, my team and I addressed other possible issues in our discussions. While the blockage eventually gave way, I'm not certain what finally set it loose, one particularly persuasive discussion or the sum total of all our discussions.

The Controller finally agreed to move forward after it was promised the management team would not use the model results if he wasn't satisfied with them. While I took a risk that he would veto the results for any number of reasons, I decided it was a risk worth taking. I suspected that once he saw the results, he would be pleased. I was happy it turned out that way.

Our client partner and my consultant team worked hard to gather both the quantitative and qualitative information that existed in the organization. The good news was they had more quantitative data than they thought. A comprehensive customer segmentation study, completed by external consultants the year before, had not been used. An internal study of customer habits was just concluding. And there was more agreement than people had anticipated on their qualitative data. As we gathered data, we developed a single, organized document. While this document was incredibly important for our modeling effort, it also became one of the most valuable deliverables for the organization.

In the data document and formal model we gathered and organized their data into a single logical structure. This made their data more useful for them. We created a new way for them to look at and use the information they had. As a result, they were able to develop an effective market research strategy for the following year: of the long list of items the organization wanted researched, the priorities were clear. As another result, they began to think and speak about their customers differently. They developed new marketing and product development strategies based on a clearer view of their customers. All from a new view of already existing data.

The simulation results had a big impact. Before building the formal model, we insisted on the management team choosing a focus – using the model to support an important decision they had to make. They chose a controversial marketing policy that was under review. The views in the organization on this policy were strong, falling into one of two camps, either 1) it was a critical factor in their business success, or 2) it had no effect on their success and would become a critical factor in their downfall. Not a wishy-washy issue, this one. While we used this issue to guide us in modeling, we also used our knowledge of their business to keep the model broad and flexible enough to be modified and used for future policy evaluations.

The simulations showed a result the management team had never considered, though it will come as no surprise to those familiar with the concepts of dynamic systems. It turns out the marketing policy <u>had</u> been critical to their success in the past, but with the changing state of the market, would no longer bring the same success. In fact, if they continued to invest as they were planning, this policy would cause them to lose lots of money. My team presented these results to the management team immediately after the management team had participated in a particularly heated and unproductive two-hour discussion of the same policy. The management team was mesmerized. Before accepting the results, they wanted some analysis. "Why does that happen that way?" "How did you define this?" "What values do you use for that?" In the end, after seeing that every result led logically back to their data or assumptions, they said, "Why, this is <u>our</u> information, the same information we use everyday!" The "ah ha" hit them like a lightening bolt, and they were ecstatic!

<u>The Last Mile – Find Our Way Home (Organizational Ownership)</u>

A wonderful attribute of this management team was their commitment from the beginning to take ownership of their work and the final model. Our client partner, in addition to working closely with us to develop and validate the formal model, also took ownership of the ongoing use and minor maintenance of the model. The consulting team is a resource to him for updating the model (e.g. with new market information from market research), and enhancing the model for other policy analyses.

When the organization took ownership of the model, we agreed that our now experienced client partner would run all the simulations, and do the analyses. Yet, even if he were to facilitate use of the model, members of the organization needed to understand this new tool available to them, and why they would want to work with him. My consultant team and our client partner agreed that delivering a hands-on workshop that exposed key members of the organization to using the model with facilitation, and the power of its results, would create the necessary pull. These workshops were designed around a single strategy decision. Three teams competed to produce the most profitable decision alternative, each one facilitated by a member of the client/consultant team. The results were overwhelmingly positive. People had fun during the workshop, accomplished something in exploring this particular strategy decision, and discovered how they could use the model and facilitator to evaluate other strategy decisions.

The End of the Road - Client Reviews and Lessons Learned

At the completion of the descriptive model, the first leg in our journey, the feedback from the client organization was positive, with everyone excited about the understanding they'd gained and the discoveries they'd made in their business. The common context and language we'd developed increased the effectiveness of their communication and the speed of their decisions. I learned an important lesson from them about the results of dialogue.

Lesson 1: Don't underestimate the importance of what we in the community often refer to as a "by product" of our work, the development of a common language. Previously I'd only viewed this as a step on the way to the final goal. Yet the value it brought this client organization clarifies its importance as a result in its own right.

The one serious negative comment I received was how long it took to achieve these results. While there are aspects of the work we do that are inherently time consuming (e.g. having the dialogue that develops the common language), I learned several lessons that would reduce the time required for a similar project in the future.

Lesson 2: Separate teaching from working more explicitly, and create an appropriate learning project. While I agree it is important for people to learn systems thinking using a subject that is immediately important to them, this project was far too ambitious for a learning environment. In the future, I would create a learning project with a small, well-defined boundary, and explicitly separate it from the more ambitious project.

Lesson 3: Break projects with potentially long time frames into several smaller projects. The project plan included various milestones along the way, but it was still difficult for the team to measure their progress. Creating smaller projects with more specific time frames and deliverables helps. For example, "developing a common language" could be explicitly called out as a small project, with a glossary or dictionary the deliverable.

Lesson 4: Explicitly define where in the process the client team (and I) will be in a state of confusion, and how we will get ourselves out. Explain why this happens, and describe previous experiences of going through it and making it to the other side. This will prepare client teams for the inevitable. While it won't make the time of confusion any less difficult, it will at least reassure everyone we're on the right track.

Lesson 5: In the beginning, let the complexity come. While many system dynamicists may not agree with this one, to date this has worked for me. Let team members get their daily work onto the table and into the model. After it's all been said, work together to determine what is most valuable. This process creates ownership and understanding that I haven't achieved when keeping models high level from the start.

At the completion of the entire journey, the feedback was only positive. The simulation results had resolved a seemingly irresolvable debate over an important marketing policy. This was an incredible win, saving the management team hours of future discussion and tens of millions of dollars per year. They could not have been happier. The lessons from this portion of the project are focused on the challenges of the data debate.

Lesson 6: Discover and implement ways to discuss and demonstrate the value of system dynamics to pragmatists. I have the techniques for visionaries, but I need to enhance my toolset for pragmatists. Pragmatists need specific examples of past work similar to the work we'll be doing together. They need to see it, touch it, and know how someone else just like them benefited from it.

Lesson 7: Don't underestimate the importance of gathering and organizing the client organization's data. Previously I'd only viewed this as a step on the way to the final goal. Yet the value it brought this client organization clarifies its importance as a result in its own right.

This was the most challenging, and in many ways the most exciting and satisfying project I worked on in my four years of using system dynamics at HP. The goals were ambitious, the process sometimes disconnected from reality, and the team interactions challenging. Yet, in the long run the journey we took together led us to exciting new terrain, for the client organization and me. The client organization credits several improvements in their effectiveness to this project. My consulting practice effectiveness has also improved.

There was one final lesson I learned. After my consulting team did such a splendid job of completing the formal model analysis and presenting the results to the management team, the Controller was heard to say "We'd never have made it this far if Deb hadn't been so persistent." Later, when an important potential client asked for a reference before agreeing to a contract, I referred them to this Controller, and as a result we won the contract quickly.

Lesson 8: Never underestimate the value of a relationship created by experiencing hardship and discovery together.