LTV at LTC

How can you change a company? Give people the information they need to make decisions they never thought they could and that changes how they think about the enterprise. The trouble is, any organization will put up a lot of resistance to change.

In 2002 I managed a Life-Time Value (LTV) project at a Large Telecommunications Company (LTC) that did change the enterprise. LTV is an attempt to measure the overall economic impact of each customer to the enterprise over their expected life. Ideally this is concrete numeric data so we can ask "Is this customer worth $300 in new equipment for them if they will stay with us for two more years"?

The LTV project allowed people to think about the business in new ways, the project was embraced by the Chief Marketing Officer, and the project saved $15 million each year in direct marketing costs while adding to the revenue from marketing programs simply by not spending money to retain customers that LTC was losing money on.

There are a lot of articles about how to do LTV calculations. This time I want to talk about all the corporate politics around sheparding the LTV project to success.

An Unusual Start

My involvement in the project started in January 2002. I was managing a modeling / statistical analysis group in the marketing department of LTC. We had a consultant do an initial proof-of-concept and it became my job to fully flesh out the approach and put LTV into production. Already, the project was off to an unusual start. I was simultaneously

1. The primary business owner/ representative.
2. The project manager.
3. The chief analytic designer.
4. The head of implementation.

Usually, these are four different people. I believe the project's success was do in no small part to all four roles being being condensed into one person. Whenever issues came up I could simply make a decision instead of having to a) document the issue b) have meetings on the issue c) discuss possible solutions d) document the final solution e) get written agreement on the change from all parties f) finally implement the solution.

For larger projects it may not be possible to be as concentrated as this, but I do think there needs to be one vision behind the project, someone who understands both the technical aspects and the business aspects of the project. Without one person that has a deep understanding of the different aspects of the project and can share that understanding with the rest of the team, none of the parts of the project will fit together.

Project Approval

The first step of the LTV project was to get IT approval and budgeting. In order to get the project used we needed to get the results loaded into the company data warehouse; in order to get that load we needed IT support. At the time we were also planning on having the LTV production system managed by the IT department; fortunately we wound up running the production system ourselves.

LTC had just instituted a strict resource allocation process for IT projects. Each project had to be justified in terms of return on investment based on financial analysis and passed by a committee of representatives of the various branches of the business. On the face of things this is a very straightforwards process but LTV was almost wrecked here.

The first issue was that customer value was a substantial change from the way LTC thought about customers. LTC had been committed to maintaining all their customers and fighting attrition (customers leaving the company) across the board. The idea that some customers were more valuable than others, and in fact some customers cost LTC more than their were worth, was a foreign concept. Because LTV represented a new way of thinking about the business the LTV project could not be valued in the attrition-based results metrics that were approved for use.

The second issue is that the IT project approving committee was composed of representatives from a broad spectrum of departments in LTC. In theory this was to ensure that the projects that were approved would be useful to the entire company. In practice, projects were decided on by committee members that had no IT experience, no experience in the processes of

other departments, and not enough time to truly research the issues they were being asked to decide on. What happened was that projects got decided by corporate politics: the person reputation of the executive champion.

It was in getting our initial approval that our executive champion (EC) shone. Our EC had a considerable reputation within the company. It terms of making the ROI cutoff, what we did was to figure out the attrition gain necessary to make the cutoff and the EC promised to delivery that gain. We knew that the LTV system wasn't targeted at reducing attrition per se, but we also knew that if the project was at all successful getting approval after the fact would not be an issue.

The long approval process did have a substantial benefit: the series of meetings made most of the company aware of the LTV project.

First, Meetings

Of course once we got approval we didn't start building the system. We started having meetings about building the system.

The first set of planned meetings didn't actually happen, which was a very good thing. Our manager wanted us hold bi-weekly meetings with managers from across the marketing organization. These meetings would have been a disaster.

We didn't know enough about LTV in general and customer behavior at LTC in specific to be able to lead these meetings. We would have had a group of senior managers taking about a project that got at the heart of how LTC did business with no real agenda for these meetings. As I found out in the course of the project, LTC was an information-starved company and very few people had a good idea of the real internal financials of the company. The most likely result of these planned meetings would have been tangential suggestions and demands that would have misdirected the project.

One of the lessons we learned from this project was how important it is to manage the meetings around a project: early meetings should be held with those necessary to get the project done but large meetings with the simply interested should be avoided until the leaders can bring a lot of understanding and direction to the meetings.

The New Economy Consulting Company (NECC)

One lengthly set of meetings that did work out very well as with the New Economy Consulting Company (NECC), a company that started out specializing in Internet marketing but by 2002 had branched out into general customer relationship management consulting.

NECC was leading their own LTV project which ultimately got nowhere but our project was able to use many of their insights.

NECC had realized that LTV comes in four flavors:

(1) Expected Future Value

(2) Total Past Value

(3) Potential Future Value: What would the customer be worth is there was no churn?

(4) Expected Life Value: (1) + (2)

Usually, when we think of LTV we think of just (1). At LTC all four metrics were very useful.

LTC had a very large customer acquisition cost; it often took a year for a customer to pay of their acquisition cost. By tracking a customer's past and future values separately we were able to see the full impact of different acquisition strategies.

LTC's direct marketing concentrated on retention efforts, and the difference between Expected Future Value and Potential Future Value became the natural metric to run attrition campaigns against (i.e., if a customer's EFV was $250, and PFV was $475, then $475 - $250 = $225; if we plan on recovering 10% of the difference between EFV and PFV then for that customer we shouldn't spend more that $22.50 to do so).

The NECC project never got beyond PowerPoint because they had made no plans for implementation. Once the report was complete the project faded away.

Moreover, NECC never really dove into the financials of LTC. What they did was to go around asking people what they thought was important and put together the subjective, narrow opinions. A project like LTV is a rare chance to look at a problem holistically and completely and the chance to bring new understanding to the enterprise as a whole should not be missed.

Difficult Allies: the LTC Finance Group(FG)

A particularly long and difficult set of meetings that we had was with the LTC Finance Group (FG).

These meetings were, of course, difficult. LTV projects by their nature are focused on customers and their value and that makes LTV projects in the Marketing Department's area; but LTV also involves financial impact and financial data and that makes it part of the Finance Department's area. I suspect that if there is an LTV project where Marketing and Finance are not arguing about the details then the project isn't being taken seriously by either department.

The FG was currently managing an LTV-like project and had been for a number of years. What FG did was to look at revenue and cost data and then give profitability data by rate plan. Profitability by rate plan really wasn't that useful to LTC. It gave no understanding of the 'why' behind customer value or how to treat individual customers.

We needed the FG for was to understand the cost metrics associated with customer activity. In particular, our executive sponsor insisted that we have FG's approval for out LTV project. We went to the FG with the question "What is the right formula to calculate customer related costs?" -- and they refused.

Well, they didn't refuse, exactly. What happened after that was a long series of meetings with various financial people, getting one small piece of data from each. Then came time to put all the pieces together and life started getting difficult.

The FG refused to either accept or reject our meeting requests, meaning we could never be sure if a meeting was actually on or not until we made the call. They would also invite themselves to other meetings, so we had to be ready to talk about LTV issues at any time. Our questions got answered obliquely. For instance, when we asked about the best way to handle network minutes the reply was "What would happen if all of our customers leave?"

As it developed, the FG and our group did develop a substantial difference of opinion in how to value customers. It revolved around how to handle capital expenses. The FG was adamant that any customer valuation include capital expense; I felt strongly that the customer LTV should not. I had two reasons. First, no future customer activity could effect capital projects that had already been purchased. LTV should be about customer impacts to LTC, not things that individual customers had little impact on. Second, including capital expenses would mean that 25% of the customers would have negative value; without capital expenses 7% of the customers would be have negative value.

Let me digress here on negative LTV. By and large, in any company there will be some customers that cost more in company resources than they bring in in revenue. One of the best goals of any LTV project is correctly identifying customers of negative value so they can be understood, targeted, addressed, and if necessary 'fired'. It is absolutely natural to take customers with negative LTV and take them out of customer retention programs.

Cutting 7% of the base out of marketing programs at LTC designed to increase retention would have minimal impact on the overall attrition results. Taking 25% of the customer base out of retention marketing programs would have a definite impact on the corporate retention efforts.

LTC lived and died by retention and attrition. If LTV hurt retention then LTV would be quickly and quietly abandoned.

We spent months in rounds of inconclusive meetings with FG, asking again and again about the correct formulation. Suddenly, they agreed with us and we could go forwards. As we found out later, their agreement was by accident. The FG simply misread the formula we were laying out and thought it included capital expenses. By the time the FG realized they had made a mistake the LTV system was already in production and going forwards.

There is a bit of an irony here. If the FG had simply worked with us and given us their cost formula we would have taken it uncritically and not done the research to discover the issues around capital expenses.

Despite our differences the two groups did come to an understanding and became allies on many issues. Both groups wanted to move LTC from gross revenue to sustainable profit. We both realized that two areas that LTC had ignored, off-net expenses[1] and bad debt

1 When an LTC customer had to use competitor's equipment LTC had to pay the competitor for usage of equipment off the LTC network. Not only did we have to pay, but we had to pay

expenses, were critical to profitability.

The LTC Information Technology (IT) Department

During this same time we were going through a long series of meetings with the LTC IT department. The motto of the LTC-IT was "we will give you anything you want, just tell us what columns you need in your flat file". For instance, the LTC-IT project documentation had extensive sections for listing data elements extracted and the databases they were extracted from – but only a minimal project memo section to describe what to do with those data elements. A project that didn't involve extracting data into a file was almost impossible to describe using the IT project documentation.

The LTC-IT department and my group had a very contentious relationship from the start. For instance, the LTC-IT was maintaining a marketing data warehouse, but they refused to allow marketing employees to access the data warehouse. We had to fill out data requests that a small group of data pullers would fulfill. Quite quickly my group found a back door into our own data warehouse simply to do our jobs.

The organizational interface between LTC-IT and the rest of the company was a Project Management Office – the PMO. PMOs were in theory supposed to have neither an understanding of the business nor an understanding of technical details but were supposed to facilitate communication between the business and technical side. In practice, because the PMOs wrote the project documents before technical IT got involved they ended up making critical technical design decisions and setting business objectives.

The LTV project was going to be unique for LTC. Employees in the marketing department were going to be developing formulas and code for the IT department to implement instead of giving the IT department high-level business concepts for design and implementation. The project manager (PM) and I spent a number of months working out the details of the interaction between our departments. When the project got to upper PMO management it was soundly rejected. According to the PMO office the LTC-IT did not have the technical competence to support model implementation and that the Marketing Department would have to supply the technical expertise to implement the LTV models.

I was overjoyed at this news. It meant minimal contact with the LTC-IT and PMO and that I could have direct oversight over the most critical matters.

The next issue we had to resolve with the LTC-IT department was where to run the LTV system. If we were going to be putting scores into the data warehouse, the LTV-IT insisted that the code be run on a server (not a problem). They also pointed out that instead of getting our own server it made a lot more sense to share a server with another department (again, not a problem). The LTV-IT found a server for us – with 275MB available disk space. Now we have a problem. Considering the potential impact of the LTV project 275MB was fairly ridiculous. Fortunately, we were able to design a trimmed-down process that fit in 275MB.

This was where wearing multiple hats on the project became very handy. A design group that was separate from implementation would have made sure that the design was complete enough and robust enough to cover all contingencies, and it would have been a lot larger that 275MB. Because design and implementation were the same we knew exactly where to cut corners.

Alarms and Diversions: The New Media Department (NMD)

In LTC, we had a department dedicated to exploring new technologies and new media applications. The technology to really make NMD's projects really go wasn't slated to go live until the year after the LTV project, but they were still very interested in the LTV project. Their interest culminated in a meeting that nearly ended the LTV project.

NMD had segmented the customer base, and had identified the segment they wanted to market to. NMD was horrified that one of their potential customers might get a poor score, and so perhaps not get the best possible service. Never mind the equal possibility that their potential customers might get good scores and receive preferential treatment – NMD was terrified at the possibility of anything bad possibly happening to their potential base. The most vivid quote of the meeting was "We have to stop this!"

our competition.

If NMD really tried to stop the LTV project, I am fairly sure that we could have overcome their resistance but I'm certain that if the meeting ended there we would have a lot of unnecessary turmoil. What I did was I put back on my Project Designer hat and let NMD specify a value formula just for them that would identify the customers NMD most wanted. This approach was successful because I was able to promise right then and there that NMD could design the formula the way NMD wanted and that it would be published along with the other LTV scores.

In a typical project situation there would have been an initial meeting with NMD, their concerns would have been taken back the the larger group, possible solutions discussed, project forms filled out and signed off on, and all this over a course of several weeks. During these weeks NMD would have solidified their position and the LTV project would have been threatened by a protracted political fight that would weaken the project at best and conceivably stop the project all together.

Building the LTV System

Building the LTV system took a small team approximately two months out of a year spent on the project, from building the lifetime models to coding the formulas to finally building a system of monthly HTML reports. Ironically actually building the LTV project was the simplest part of the whole project.

After the Rollout: Education and Explanations

When the LTV project was rolled out and data was being published I immediately found myself with two new tasks: educating the company about the LTV project and explaining why particular customers got negative value.

I anticipate that education will be part of any analytic project. The most important decision we made about education was to explain everything. There was no part of the LTV system that we did not discuss and even give specific parameters for. Explaining everything allowed people to understand the LTV system.

What really made people accept the LTV system was being able to answer why particular customers had negative scores. In particular we got a number of calls from Customer Care. LTV had been integrated into the Customer Care system and it effected what kind of equipment offers could be made to customers. The Customer Care department needed to know why some high-revenue customers were getting low or negative value.

We were able to answer questions like this easily and convincingly. As it turned out, the usual reason high revenue customers had negative LTV was because they hadn't actually paid their bill in a number of months. Being able to answer these questions went a long way to establishing our credibility.

The International Consulting Company (ICC)

At the same time as our project was going going an International Consulting Company was brought in to do pretty much an identical project, Lifetime Value for customers. We were able to work fairly closely together and our projects wound up being very similar. The ICC team was very valuable to us in that ICC was working with the CMO directly and so our project was able to gain tremendous credibility through association and to some degree confusion with the ICC project.

ICC and our group had slightly different methodologies; ours was adopted because we had resources to deploy the results in the data warehouse and the ICC didn't.

The Large Activity-Based Costing (ABC) Project

During and after the LTV project, there was yet a fourth value-based project at LTC. The Finance department brought in a large consulting company to design a database for activity-based costing to help LTC get a handle on their operational expenses. The goal was to build an ABC database where a manager could look at expenses, drill down into the specific line items, and then drill into the company and customer activity that was causing those expenses and so have a clear grasp of the actions needed to manage expenses.

The project started out by having the consultants come in and have roughly a year of large meetings on what should go into the system. This was done without considering implementation issues. At then end of the meetings a large and detailed specification was

developed, which was then handed off to the LTC IT department. The LTC IT department estimated that implementation would cost several million dollars and the project was killed right then and there.

In many respects, the ABC project was the antithesis of the LTV project.

1. Instead of identifying a group within the company to build the project, an outside consultant was brought in to run the project. This meant that the understanding that comes from doing a project like this left LTC with the consultants.
2. There was a complete disconnect between the design and implementation teams. This meant that implementation issues were not considered during the design, and that the design could not be modified later to take implementation factors into consideration.
3. Instead of a small group working to understand the business, ABC had large meetings to poll people on their issues. This meant that every possible issue was included in the project design. Because the design was simply thrown over a fence to implementation there wasn't any negotiation over project scope to achieve what was reasonable.

What Can We Learn from LTV at LTC?

Design Rules

In software it's all about the implementation – actually writing the code. In business intelligence projects actually doing the implementation isn't that big a deal. There are lots of packages to make implementation easy compared to writing software from scratch. What that means is that business intelligence projects are all about the design, and the design team needs to be in control and actively involved in all stages of the project.

Build Understanding Within the Organization

Projects that change an organization demand that the project group build a substantial understanding of that the business is, what it could be, and how the project can help the business get there. That understanding needs to stay withing the organization after the project is officially complete. There is a vast difference between the understanding that comes from seeing a presentation on a project and the understanding that comes from actually doing the work.

Projects that are important to the company need to be living, evolving things and that means that the detailed understanding of the project needs to stay accessible to the organization. With LTV, as soon as it came out people wanted additional work and we could do it because we knew the nuts and bolts.

Tell Everything

In a project like this the team gains a great deal of understanding about how the business works and there is always the temptation to keep that understanding within the team. The argument I have heard is that by keeping all the details hidden then the team will maintain control over the results of the project. What I've seen actually happen is that when a team tries to keep secrets others just don't believe them.

In the LTV project we made the decision to explain every detail to anybody who asked. The result was that people had a great deal of faith in what we produced. Even if people disagreed with the decisions that we made in the project, they understood and could respect the decisions.

Build Complete Teams

Typically projects are done by assembling cross-functional teams from different areas, each person with a narrow responsibility. This is a very efficient way of handling day-to-day business but an ineffective way of getting business-changing projects done. This is especially true is the project is going to be going on for a while.

The key to our success was having a complete team that could handle all phases of the project. There was no point in the project that we threw the project over the wall to another team, or caught something that another team was throwing at us. When we were working with other teams we established working relationships with them and brought those teams into the project. Every member on the LTV team could speak to all aspects of the project and have meaningful input into all aspects of the project.

Let me give an example of what can happen with fragmented, siloed teams. I was working on updating a project that had been launched several years before. There was one team that extracted the data from a datamart, another that took the data and loaded it into a staging area, and a third team that loaded the data from the staging area into the application. I asked the question “who can guarantee that the data in the application is right”? Thunderous silence. No one could guarantee that the final data was right, or even that their step was correct; all they could promise was that their scripts had run without obvious error.

If I had to give a name to this approach I'd call it the “A-Team” approach: complete functional teams that understand each other's areas.

It's About Understanding

Ultimately, success is about understanding. Build

teams that will take the time to understand the business and all parts of the project, where every member of the team understands all parts of the projects as a whole, share this understanding in full with anybody who wants to learn, and carry this detailed understanding forward in the enterprise.