BIOGRAPHICAL INFORMATION

Chris Hill
Director – Operations Technology
City Utilities of Springfield, Missouri

Specific Responsibilities

Joined City Utilities in 1988. Responsible for assisting with the development of strategic direction for implementation of technology solutions in the operating areas of City Utilities (Electric, Gas, Water & Telecommunications). Assure that benefits of new technology and processes are realized. Direct related organizational change readiness plans and communication. Assure that both return on investment and key performance indicators, related to new technology, are tracked and achieved. Assist operations areas with process improvements and productivity enhancements.

Past Experience

Most of my professional career has been with City Utilities in a variety of positions. Background is in Information Technology. Held positions in PC support, followed by Network Engineering, then Supervisor of Information Center, and finally as Information Technology Business Consultant. As a Business Consultant, I worked very closely with the various business & operations areas of the company striving to learn their business and helping them to learn more about technology. In essence, I was their liaison to the IT department. Through this I developed many solid relationships at all levels of management and staff. Recognizing that success with technology implementations only comes when the business area(s) affected "own" the projects and are completely bought into the potential benefits, I moved to the operations side of the business. With this new position, the goal is to help generate that "ownership" and work with the various areas to create and implement a ten-year technology plan which will reduce operating costs and improve customer service.

Educational Information

B.S. – Computer Science (minors in Math & Physics), Southwest Missouri State University

Professional Memberships

GITA

LESSONS LEARNED IN BUILDING A FOUNDATION FOR TECHNOLOGY-ENABLED BUSINESS TRANSFORMATION OF UTILITY OPERATIONS

Chris Hill
City Utilities of Springfield, Missouri
301 E. Central
Springfield, Mo. 65802

ABSTRACT

City Utilities has successfully put together a 10-year strategic plan for the operations part of our business. This plan lays out a comprehensive approach to improving business process through investment in new technology such as GIS, GWD, WMS, OMS, etc. and process change. Learning from previous large-scale implementations, we have created a plan that is fully supported by executive management and is driven by business needs rather than technology wants. Our approach considers Executive Vision, Organizational Readiness, an Economic Model, and Key Performance Indicators.

GUIDELINES

As you read through this document you will notice phrases in **large bold letters**. These phrases are the lessons or philosophies that City Utilities (CU) has learned through the years. A lot of our success thus far, in creating a 10-year strategic Operations Technology plan, has come from adhering to the knowledge gleaned from these lessons.

As with any paper written around technology, a lot of acronyms have been used. A glossary of terms is included at the end of the paper for your convenience. Also, to help you compare your company with ours, a few facts about City Utilities is included in Appendix 1.

OUR STORY

In 2001, City Utilities' Information Technology (IT) department was having discussions with our Chief Operating Officer, John Twitty (who became CEO in October 2002), regarding potential new technology that could help improve the operations side of our business. Mr. Twitty was very interested in exploring possible technology solutions that might enable business process improvements, thus reducing our operating costs, as well as improving our customer service. However, both Mr. Twitty and IT recognized that several previous large-scale technology implementations had been viewed quite negatively throughout the company and as a result, the success of those projects suffered.

What we had learned is that **the business side of an organization must own and drive the need for their technology projects**. In the past, CU's IT department had played a major role in owning and driving technology based projects. This was done for various reasons, mainly to control costs and scope. However, we learned that following each project conclusion, the sponsoring business department didn't retain a sufficient level of system ownership, accountability, or responsibility. To paraphrase a common quote: "You can lead a

department to technology, but you can't make them accept it". Something our IT shop is learning is that business departments are interested in business, not technology. We often hear the business talk about technology needs and wants, but if we can get them to delve deeper and explain why they need that technology we'll find it's to solve a business problem, so we are beginning to focus on the business, rather than the technical aspects. It's in this regard that the business side needs to study and understand their business related problems, then come to the conclusion and buy into the fact that a technology tool can enable them to ease their burden. Without this up front part of any technology project, the business cannot "own" the project, it will always be viewed as IT "pushing" technology. IT plays a very important role in any technology project and there must be a solid partnership with the business area, but the business area must own and take responsibility for any project which affects their performance.

With this need recognized, Mr. Twitty made three key strategic moves:

1. He created a new, one-person department called Operations Technology, which resides in the Operations side of the business. The sole focus of this new department is to "own" the future of any new technology in the Operations Area. This is as much perception as reality, but in the end it allows the Operations employees to feel they are better represented and are more apt to accept any resulting change.
2. He then filled that position with a well-respected person from the Operations Area. This is a person who had "been there and done it". Someone who the other Operations employees will listen to. Someone who can challenge the status quo. In this case, Mike Moore, formerly Manager – Electric T & D, was selected for the position: Manager – Operations Technology. Mike has a solid knowledge of Operations business processes, as well as the current technology used throughout Operations. Mike is also willing to work with the IT area to better understand the potential new technology that exists in the world today. This gives IT someone to "sell" their ideas to and gives the Operations employees someone to "trust" (one of their own).
3. Finally, Mr. Twitty created a team of people to lead the charge, with Mike Moore as the team leader. That team of people is called the Operations Technology Steering Committee (OTSC). Lesson learned: **No one person, no matter what their position, can inflict a large amount of difficult change on a group of employees and have them embrace or accept it**. A dynamic person or leader might be able to generate enthusiasm or may have the power to just say, "do it", but changing a large group of people can only truly happen if that group is committed to the change. Those people have to understand the situation and believe in what they are doing. They have to feel a sense of urgency and be willing to "suffer" for a larger cause that they believe in. One leader cannot invoke that on a group. It requires a team of people who represent the larger group and most of all be well respected by that larger group. Each member of that team must be able to communicate with the larger group, solicit input (both good and bad), and keep them informed of what the team is doing. In our case, the OTSC is comprised of key people from each of the areas that will be affected by the new technology we are exploring. Areas represented by the OTSC are Electric T & D, Gas T & D, Water T & D, Customer Engineering & Developer Services, Mapping, Inventory, Finance, and IT.

While it takes a team of respected peer employees to really create significant change, a solid leader <u>can</u> generate the catalyst necessary to invoke the process for change. In our case we have two such leaders: John Twitty, CEO and Bill Burks, COO. Together they recognize a few situations in our company that if ignored will cause significant difficulties and expenditures in

the near future. Lesson learned: **A significant catalyst or cause and a sense of urgency are needed to propel the change needed with new technology**. People won't change just for the sake of change. They won't change just because the CEO tells them to. People, employees, are generally set in their ways. This is particularly true in a municipal utility environment. Utilities in general just don't change very fast or very much. So there has to be a significant reason to get them to commit to the pain and uneasiness that comes with change. There also needs to be a sense of urgency, otherwise the process of change will take too long and the initial vision will be lost. For this paper we're talking about implementing new technology to improve process, thus reducing cost and improving customer service. When new technology is put in place it takes time to change the processes associated with that new technology and ultimately achieve the benefits. Once that process change starts, the "pain" starts and employees quickly want to go back to the way they used to do things. Without a solid cause and a sense of urgency, this type of delay can occur and the anticipated benefits and ROI will be greatly affected or worse the project could be deemed a failure.

As mentioned, our CEO and COO recognized a few significant causes. They also recognized that time is of the essence in dealing with them. This situation has been conveyed continuously throughout the company, to all levels of employees – those directly and indirectly affected. It's important for the entire company to understand why millions of dollars are planned to fund new technology and change. These causes were also the primary directive for the OTSC to put together a long-term plan to address via business process change and technology. Here are the causes that have been outlined:

1) Silos. We have silos of information, silos of processes, silos of people, silos of communication, silos of efficiency, etc…
   a) Throughout the years, as City Utilities has striven for excellence, each individual department has become focused on improving their specific function. As a result, we have well-operated individual departments that don't always work together in the most efficient manner . . . call it a product of evolution. One department can have a slick, efficient process, but it doesn't mesh well with the next department in line to carry the process forward. Thus our overall company business processes can be improved.
   b) Sometimes our individual employees or departments collect information but don't understand how the people we deliver it to use that information. We sometimes receive information but don't always know what to do with it. Thus critical information sharing and communication can be improved.
2) Uncoordinated technology. These days we also have technology situations to deal with. In our silos throughout the Utility, we have many repositories of data and some of this data is being replicated, so time is spent collecting the same data someone else may already have. Time is spent entering the data from our small spreadsheets and databases into the larger systems used by the rest of the company, and in our silos, systems are being developed that should be coordinated at a company level. Some of the technology that the OTSC is looking at was already being introduced to the company, but not with the entire company in mind. If the OTSC did nothing, we would wind up with some form of Geographical Information System (GIS) or Work Management System (WMS), but those systems would not be nearly as effective, and their life span would be comparatively short, without first looking at the business strategy of the entire company.
3) Attrition. We get very dependent on our department "expert," and when that person leaves the Utility, we're at loss as to how to handle certain situations. Additionally, the numbers of employees who will become eligible for retirement over the next 5 years is large; thus we

have significant "brain drain" in our future. This needs to be dealt with proactively else productivity will suffer. Processes, standards, "expert information", etc can all be incorporated into good technology, thus that information is not lost when an employee leaves. It can also give us a good base to build upon and establish more consistency throughout the company.

4) Operating costs. There are many factors that contribute to the cost of operating a utility. Some of these factors are simply not controllable, such as weather or cost of fuel. But some are controllable, such as efficiency of labor and materials used in projects, or optimizing strategies for inspection and maintenance activities. Our operating costs have and continue to steadily rise. Unfortunately, like a lot of utilities, generating additional revenue to compensate for this is difficult. City Utilities has some of the lowest rates in the country and in order to keep it that way we need to focus on lowering costs. Better information from better technology coupled with process change can enable reductions in labor and material costs, while also increasing customer service as a side benefit – a double win (if done correctly).

The following excerpt is taken from our internal Intranet web site. It gives a good idea of what our Operations Technology Steering Committee is all about.

> "So what is the OTSC trying to do? Bring everyone together to work toward elimination of the silos. From beginning to end, we want to examine the various processes that flow throughout the Utility. We want to find the "pain" points of those processes and couple those findings with the strategic vision of our Executive Committee. We will then identify process changes and technology tools to reduce the pain and improve the process. In the end, we are asking two questions of every potential solution: Does it reduce costs? Does it improve customer service? If a solution can't provide either of those, then it probably won't make the list. The OTSC is committed to finding cost-effective solutions to improve our daily business, thus fulfilling the OTSC mission and vision."

Business first, Technology last – Business must drive technology, not visa versa. By now, if it's not obvious, you should see that while technology is a part of solving our problems and improving our future, it's the last piece to the puzzle. We've talked a lot about improving processes, reducing costs, improving customer service, and dealing with normal company issues. We haven't talked a lot about technology. The focus is on business process and business strategy – technology is just a tool or an enabler. If we look at technology too soon in the evaluation of our problems we risk getting caught up in the hype or selecting a system that doesn't completely address the business issues. When this happens, expectations are set incorrectly and we risk losing out on some of the big financial benefits that technology can provide. We must clearly define the current business issues, then determine what needs to change, then and only then look to find what technology exists that can get us where we want to be and not where a vendor wants to take us. As we review the steps that the OTSC has taken to create a 10-year strategic plan, you will see that technology plays a small role.

It is important to point out that some knowledge of existing technology is key. It would be very difficult to plan what you want your business strategy to be without some knowledge of what technology can help it to be – just don't let technology drive your decisions. When the OTSC first came together, the question was asked, "What do you want this company to be in 5 years?" Since our job was to recommend technology solutions, the response was "We don't know – what

can we be?" In other words, we didn't have enough knowledge of the types and capabilities of existing technologies. So we spent about one year going to conferences such as GITA, Distributech, ESRI users group, etc. We visited other utilities. We invited vendors to come in and talk to us about their technology (not sell us, just talk to us). We did all we could to learn as much as possible. Then we came back to the table and asked the same question, "What do we want this company to be in 5 years?" We were then ready to tackle that question, but from a business point of view, knowing what forms of technology existed that could backup whatever vision we created.

Own <u>your</u> business plan. Up to this point we've explored some of the initial steps leading up to taking action. We've put key people in a position to march forward with the creation of a strategic plan. We've partnered with top management to identify and communicate key concerns. The business unit has stepped up to the plate and owns the planning of their future technology and processes. However, we've not been down this road before and yet it's not something new in the world. Rather than reinvent the wheel, we decided to seek out a consulting company that could work with us to speed the process of creating the 10-year plan. This is an important step. We wanted a consultant that matched our philosophy and one that would work <u>with</u> us, not <u>for</u> us. It's important when the consultant is gone that we understand how the plan was created and that it is ours because we created it. We didn't want a consultant that was going to come in gather some info, go away, then come back with the answers. Again acceptance of this plan throughout the company is critical, therefore we needed to take responsibility for what the plan lays out. When the consultant is gone, our team, the OTSC, has to deliver the results. Ten years is a long time. The plan is bound to shift and change. If we "own" the plan, then we can change it as we move forward through time. To this end, we hired a consultant to do just that.

Learn from your past. City Utilities has had a few large scale, high cost technology projects in recent years. Each has had its' share of challenges, but we've learned from them. These lessons have driven us to establish key performance indicators in our current business process so that we can measure our ongoing improvements. In past projects we lacked an ability to measure (and remind ourselves) of the initial problem and therefore could not measure our progress. Given the amount of organizational change, cost and length of time our 10-year plan would take on, we knew we would need this reminder. Our company, like a lot of companies, struggles with understanding the cost and associated benefit of large technology implementations. Our 10-year plan had to be a plan that managers and employees at all levels could believe in. It had to show a realistic and reasonable financial ROI, and clearly explain how that was to be achieved. It had to plan implementation of new technology at a rate our employees would tolerate. It had to fit our long range budget and financial picture. It had to benefit not only the company big picture, but the individual employee also. What a challenge!

Create a plan that incorporates all you have learned.

Together with our consultant, we took all this information and philosophy and put together the key steps to creating a 10-year vision and business plan for our operating areas.

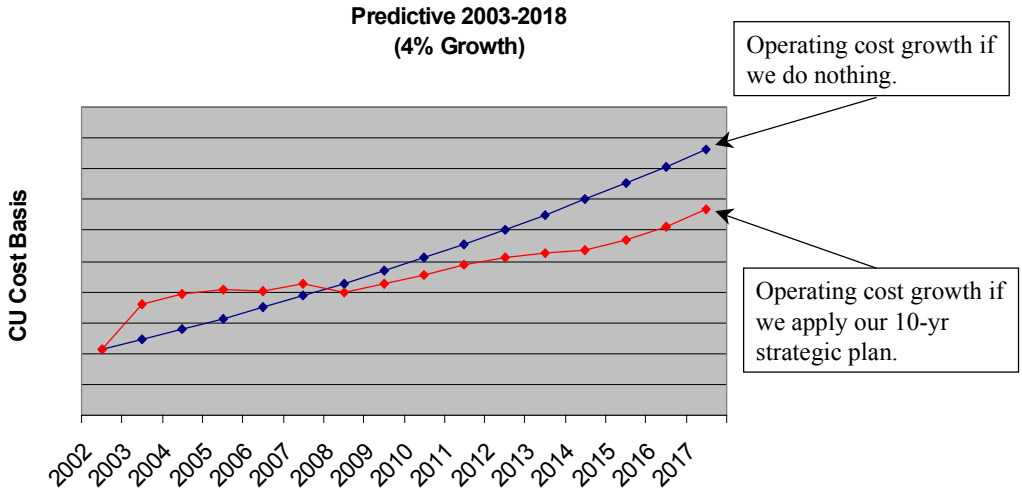
1. <u>Executive Vision</u>. You don't want to create a plan that involves expensive technology and drastic process change, only to find out it isn't aligned with the vision of top management for the future of the company. It will be dead before it even starts. We spent a couple of days with our top executives to hear and understand their vision for CU's future. With this

information, we could be sure that everything we incorporated into our plan would enhance their vision.

2. As-is Assessment. Determine where you stand today. Learn how you do business today. At a high level, we looked at and documented the various processes used throughout the operations area of CU. We documented the current technology used to facilitate those processes. We held workshops to learn what the "pain points" were with those processes. This in itself was very beneficial, as employees from different departments learned a lot about each other's processes.
3. Organizational Readiness Assessment. Learn how accepting your employees are to change. How much change are they will to accept? How fast are they willing to change? What obstacles are there that inhibit their will to change? We performed a survey to learn much of this information. We also used our consultant to hold very confidential, small group sessions to allow people to freely express their opinions and views. We looked for trends in statements to keep some validity to the things people will often say. We shared this information with all levels of management and even back to the employees to show we heard them. This is a powerful tool to help predict the potential success or failure of technology implementation.
4. Key Performance Indicators (KPI). In order to measure success, improvements, or lack of improvement, you must have a baseline. We spent several days sifting through various things we could measure to show success. We looked at the pain points identified in our As-is Assessment and tried to find ways of consistently measuring those with a repeatable process. With this we now have a way of either showing that improvement has been made or recognizing that it has not been made and exploring why that might be. Many times with large scale implementations the improvements are at such a high level that individuals don't readily recognize that improvement. It is critical for morale, during significant change that we are able to show employees that their hard work is paying off.
5. To-be Vision. Once you completely understand your companies' situation, then you can lay out a vision for the future. We took our executive vision, the pain points in our business processes, the willingness for employees to change, and created a vision of a new set of business processes. In some cases we just changed the process. In others we added new technology or changed out old technology to facilitate improved processes. This was not done in a vacuum, but rather we worked with as many people as possible to ensure we weren't dreaming up things that were impossible to achieve.
6. Positive Business Case. At the end of the day it all comes down to money. In the absence of new regulations, laws, or a strong strategic direction, a plan of this nature must show a return on investment that company executives can accept. We took our team of employees, representing all the affected areas of CU, and carefully examined the proposed benefits of each new technology laid out in the To-be Vision. These employees validated those benefits realizing that they would later be given responsibility to ensure that we got those benefits, therefore it made the case much more realistic. We took the cost of our To-be Vision and put that up against the improvements in labor productivity and material savings (i.e. the benefits of new technology) to determine our internal rate of return (IRR). We also laid out all the side benefits that can't be quantified, but didn't take any financial benefit from those. We also looked at the lowest IRR our company was willing to accept and laid that up against what we thought was realistically possible. This gave us a good margin of error to show that even if we couldn't meet what was realistic, the potential for an acceptable return was still there.

Predictive Operations Costs

Increasing costs provide increasing benefits



Effective Communication during the plan creation. We spent a little over six months working through the steps outlined above. We included as many people along the path as possible. We reviewed our findings, assumptions and conclusions with all levels of management as we went. We also explained some of the probable difficulties associated with the specific implementation issue, such as, some areas of the process would suffer during and immediately after the technology implementation. In order to gain support and buy-in for a plan like this, there must be no surprises. If you wait until the "experts" create the final report to share any information, you will get nothing but resistance. However, if you include as many people along the way as possible, report to them your findings as they are compiled, bounce ideas off of them, verify with them any assumptions you are making, and share with them the conclusions you are considering, then the final report shouldn't catch anyone off guard. It will almost be a non-event. If you have truly given people an opportunity to speak their mind during the process of creation, then there will be less resistance to what the report will say.

Be clear on the factors required to successfully implement your plan. With a plan of this magnitude, some assumptions had to be made. As we created our plan, we discovered certain factors that must be incorporated in order for the plan to be successful. We feel certain our plan is realistic and attainable, but we also realized that there are some key things that will stifle the success if not accepted by management prior to starting any actual projects. When we presented our plan to executive management, we didn't pull any punches. We laid it on the line that if they wanted the results the plan showed we could get, then we also needed their support on these key factors:

1. GIS had to come first. This was challenging in that it showed the lowest ROI of all the phases, but yet it needed to be first to enable the later technologies to achieve higher ROIs.
2. New technology must be fully integrated within legacy systems. Integration is expensive and it's easy to get caught up in the benefits of a single technology, but we're after overall process improvement, which involves several technologies.
3. Business process must change to optimize new tools and integration. As this paper has discussed, technology is just a tool. For true benefits to be realized, people must change the way things are done and the way they think about things – technology enables those people to do this, but it isn't automatic or easy.
4. Leadership from key managers is crucial. Executives and Senior Management have to accept this plan, believe in it, and support it throughout the utility. If employees see unity in management and hear their support, then there is less room to reject it.
5. Training, communication, and change management are key. These are all things that take time, commitment and funding, but without them benefits will suffer.

It's important to be up front with all factors related to a plan of this type (or any type). It's our responsibility as owners and creators of the plan to ensure that management is clear on the benefits as well as the challenges.

Create a plan is that is flexible and gives management some comfort in accepting. A plan that is rigid and/or high risk will not set well with managers. As we worked with our management during the process of creating the plan, we listened to their concerns. Their main concerns were with the cost of subsequent projects and the effects of those projects on our employees. We built our plan with some key strategies to address these concerns:

1) The plan was built in self-sustainable phases. Each phase has its own ROI, therefore if funding becomes an issue, we can stop at any phase and still get a return. At a lower level, as we build each project plan, we will also divide into smaller manageable, but self-sustaining pieces. This way management does not have to worry about getting locked into a long-term costly initiative.
2) The benefits promised were validated and accepted by the middle managers who will ultimately be responsible for achieving those benefits. This establishes a solid level of accountability and again gives a level of comfort to executives. It also creates a high level of trust.
3) We adjusted our plan to slow the pace of implementation for a few reasons:
   a) To slow the pace of change on the organization. This extended our payback time, but also ensures a higher probability of success with employee acceptance. Caution should be taken with this type of thinking however – too slow of a pace can be harmful as employees will loose the sense of urgency needed to invoke change.
   b) To lesson the effect on our long-range budget. This makes it more cash flow affordable for the company. Given the difficulty of understanding the importance of technology in a company, thus a negative view of the associated large expense, it's important for us not to allocate too much toward technology related projects, which in turn allows more funding for other projects needed in the company.
   c) To break the plan into smaller more manageable chunks. Long drawn out projects tend to wear employees out. They can also create stress on those employees left to pick up the slack for those dedicated to the project. Breaking up the projects allows us to manage those situations a little better.

Be willing to back up your plan with action. If your plan is truly realistic and attainable, then you should be willing to put tough action in place to back it up. In our case, we were suggesting setting aside millions of dollars in future budget years to implement new technology and improve processes. We were also touting solid tangible benefits in the form of reducing operating costs. In order to show how much we believe in the plan we created, we also put those benefits into our long-range budgeting process. We aligned the business case with our operating budget to make it easier to take the benefits out of our budgets. This helped to establish commitment to the plan and made it very real to those who would be responsible for achieving results. It gave our plan some real teeth and applied some positive pressure to get the benefits we are promising.

The final result is a successful start to a long-term strategy. We have a solid realistic road map for improving our operation business and implementing technology to assist that effort. We have support and buy-in from all of top management. We have the budget in place to move forward. We have been granted the flexibility to communicate and work with employees as needed to ensure their help and acceptance of this change. We have a dedicated team of our best, brightest, and most respected employees to move this plan forward. We have generated enough excitement through our process that people throughout the utility are asking how they can get involved. All this and we haven't even selected the first piece of technology yet. We can't predict the future outcome, but we have definitely done all we can to get things off to a good start.

APPENDIX 1

Company Facts

- City Utilities is a municipally owned utility in Springfield, Missouri. Our responsibility includes:
  - Electric power generation, transmission and distribution (~97,000 customers)
  - Natural Gas acquisition, transmission and distribution (~78,000 customers)
  - Water acquisition, treatment and distribution (~74,000 customers)
  - Telecommunications
  - Operation of the Transit system
- Our service territory is approximately 320 square miles.
- Springfield population 210,000
- City Utilities employees 1000

GLOSSARY OF TERMS

GIS	- Geographical Information System
GWD	- Graphical Work Design
WMS	- Work Management System
OMS	- Outage Management System
CU	- City Utilities
IT	- Information Technology
OTSC	- Operations Technology Steering Committee