

USING SOFT DATA TO SUPPLEMENT COST-BENEFIT EVALUATIONS

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The impact or effectiveness of an energy conservation program is most often quantified by collecting energy savings data after the retrofit and using a cost-benefit equation to relate the costs/inputs to savings/outputs. Since energy savings are the basic objective of all our programs, this means of evaluation is fundamental.

Unfortunately, success by these measures may not always be enough to insure program continuation. All programs have organizational, policy and financial characteristics which make the programs more or less marketable to clients and funding sources. Program managers need evaluation tools which identify these characteristics and, if possible, interact them with more quantitative data. Perhaps as important, these characteristics can be valuable for refining program delivery methods.

A Systems Approach

Most of us have encountered systems models for program planning and design. By defining inputs, program process or throughputs, and outputs, one can create a framework for looking at variables which effect program success or failure. In any program, inputs include resources such as funding, staff, one's potential clients and competition which may or may not be vying for the clients' attention. Throughput variables in most of our programs include the types of services offered, the usefulness or convenience of the services, the energy conservation measures chosen and how well these ECMs are installed and utilized. Outputs, or results achieved, are generally defined as actual energy savings per project, savings across a target group and the relation between these savings and program costs. The number of participants who are directly or indirectly affected by the program can also be used to quantify output.

It seems to this author that inputs determine a program's level of effort, throughputs determine a program's efficiency and outputs are a means of measuring effectiveness. Comprehensive evaluation must really consider all of these dimensions to be useful to program managers.

If evaluation is limited to a simple savings/cost analysis, based on what we put in terms of materials, personpower, construction costs etc., versus what we save the client, we have an "objective" model. However, having been involved in this and other accountings, the situation seems a little more complex and not all that objective. For one thing, there are too many ways to "count". Will inflation be 5% or 3%? Should the cost of all personpower be counted, or only that which is paid for by the program? Should the program be valued on the basis of absolute number of dollars saved or on total reduction in energy consumption? How such questions are answered obviously can have a

big impact on documented results. Program managers know that they are maleable and so do our clients and funding sources. Hence I submit that other measures can be as important to them as they are to us for improving or defending programs.

What this implies is that an evaluation of process is a critical aspect of maximizing a program's impact. Hidden in any cost-benefit calculation we may make are process factors. How we go about making energy conservation happen in our clients' facilities— and how they respond to our efforts— may do more for keeping our market viable than our actual savings. In my experience, client needs and motivations are broader than a desire to save energy.

Background

The Center for Neighborhood Technology is nonprofit technical assistance organization whose programs address energy, housing, environmental quality and economic development needs in Chicago's low and moderate income neighborhoods. The Institutional Energy Services department of the Center is a kind of public interest engineering firm, providing energy-related engineering, architectural, training and construction oversight services to social service agencies, schools and religious organizations. For several years, we have administered the Amoco Foundation's Neighborhood Nonprofit Energy Conservation Fund which underwrites technical services and construction costs for eligible organizations. Technical service fees and retrofit costs for other clients are paid for by a mix of public and private sources.

The comprehensiveness of CNT's service delivery system makes it somewhat unique in comparison to other programs around the country. Most institutional programs make provisions for a full scale audit, informal training and post-retrofit performance monitoring. However, in addition to these services, CNT writes specifications for all contractor-installed ECMs, solicits and reviews bids, does payout inspections and provides a written manual and several training sessions to insure client understanding of new equipment or procedures. This means that CNT staff are active participants in each stage of the retrofit process. We believe that this facilitative approach is the main reason that almost all audits have resulted in completed retrofits. Once all measures are installed and training is completed, we monitor changes in energy consumption for a least one year and intervene if results are not meeting audit projections.

Having chosen such a comprehensive service delivery model, CNT's effort or input level is obviously high. To justify it, we feel especially obliged to monitor our own efficiency and effectiveness. Moreover, our clients and our funding sources need to feel that they are getting their money's worth.

Nurturing a Feedback Loop

Informal feedback from clients, though valuable, is difficult to use as a basis for generalizations about program impact or needed design changes. In spring of 1985 a questionnaire was therefore prepared and distributed to our clients. The questionnaire had several sections. One solicited feedback on program effectiveness. (Have your costs gone down... do you think they'll stay down...why). A second section queried clients about process variables— asking them to rank the value of various services and to comment on side

effects that could be linked to the way the program is designed. Finally, clients were asked to rate several attributes of CNT's performance as a service provider and invited to comment on our strengths, weaknesses and/or other ways that we might be helpful.

Though a modest effort, the results of this survey highlight the impact that organizational, policy and financial characteristics have on client satisfaction. Whether people were experiencing high energy savings or not, they cited other reasons for valuing the program. Their comments also "red flagged" some program design features which we had assumed were valued more than they are.

Survey Results:

Not surprisingly, clients highly valued the fact that the program is a source of funding for building improvements. We were surprised to find, however, that specification-writing was the next most valued service—ranking higher than the audit that is the foundation for the entire process. Construction oversight ranked fourth, followed by bid review, staff training and performance monitoring.

Over half the respondents reported that this program was responsible for the identification and resolution of building repair needs and for creating an opportunity to better train staff in the operation of the facility's mechanical systems.

Over half the respondents also reported that involvement in the program had helped to catalyze an internal policy decision about current or future Plans for their facility. Several said the Program had been a catalyst for launching a major rehabilitation project.

Several clients expressed dissatisfaction at the performance of contractors — especially minority contractors— recommended by CNT.

In spite of the fact that we chose attributes which seemed to us to be our weak spots, clients were extremely positive about CNT staff performance.

Conclusion

In CNT's case, our survey results underscore the fact that institutional clients apparently value the program's role in bringing attention to facilities management issues. It may be that our consulting expertise and role modeling vis a vis any construction project is of special value to nonprofits because their staff generally lack experience in this area. Although energy savings is our first priority, its clear that this side effect is an attraction to clients. It is also clear that we must either do a better job of selling those services which received a relatively low ranking or reduce the level of effort (and cost) now associated with them.

An energy conservation program is a product which is sold to clients as a way to reduce (or avoid-increases in) energy costs. If/when energy costs stabilize, the incentives for participating in such programs decreases. Program managers thus need to become increasingly adept at targeting customer concerns and priorities. Programs which require too much in the way of

technical expertise or initiative from clients are especially vulnerable to the disappearance of their market.

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