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How The Chicago Manufacturing Center Uses Evaluation in Decision-making

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Introduction

The Chicago Manufacturing Center (CMC) works with manufacturers in the six-county metropolitan area to improve productivity, expand markets and create new jobs. CMC is a member of the NIST/Manufacturing Extension Partnership, a nationwide network of locally-managed centers that work with small and mid-sized to meet the competitive challenges of the global marketplace. Although CMC is an affiliate of the NIST/Manufacturing Extension Partnership the organization is required to raise at least 60 percent of its annual budget from local sources and client fees. Local funding sources include the City of Chicago, the Illinois Department of Commerce and Community Affairs, and major corporations and foundations. CMC has a staff of 40 senior manufacturing professionals backed up by an extensive network of affiliates and subcontractors.

CMC has used evaluation techniques as a source for continuous improvement ideas in three distinct ways. First, evaluation has been used as one component in evaluating partnerships and affiliates. Second, feedback from customer satisfaction surveys has indicated several areas where CMC needed to improve. Finally, CMC is using the NIST/Census project impact data for continuous improvement purposes.

The forum for discussion of evaluation data and analysis within CMC is the Quality Team. The Quality Team is comprised of six individuals who meet on a weekly basis to discuss continuous improvement issues, ideas, and propose solutions. This includes both internal and external activities. Areas that the Quality Team has addressed include: development, implementation and administration of CMC customer satisfaction surveys; developing procedures for populating CMC subcontractor database and evaluating performance; developing and implementing

tools to visually display progress in project development, delivery and satisfaction; and instituting a regular CMC After Hours Social for staff.

Over the last 18 months the Quality Team has reviewed several statistical analyses evaluating certain aspects CMC performance, made subsequent recommendations to improve performance, and followed through with relevant actors within the organization to insure that new procedures and processes in fact get implemented. The team also monitors these changes to make sure they actually do improve performance.

Evaluation of CMC Partners/Affiliates

The first major evaluation-related project undertaken by members of the Quality Team was evaluating the performance of CMC partners from the local economic development community. CMC President at the time perceived the existing arrangement as less than satisfactory and requested a quantitative analysis to see whether or not his hunch was correct. He felt that CMC staff had a significantly higher success rate in turning company visits into either assessments and/or projects. Data collected on who made the initial visit and on assessment and/or project completion allowed for a fair comparison. The success rate was in fact significantly higher for CMC staff than for local economic development staff.

These findings make sense, since one of the main goals of CMC staff when they make a company visit is to determine whether or not the company needs help and, if so, provide technical assistance to address the problems. This is not the case for local economic development organizations. Their primary goal is to assist local firms in solving problems related to government services. These activities are significantly

different from CMC services - for example they usually do not require the company to spend money. In addition, local economic development organizations provide companies with all kinds of information that may help their company, from loan packaging to informing them about relevant seminars. With such different missions and goals, it is easy in hindsight to see that a partnership with local economic development organizations based on CMC funding a person within each organization may not have been the most efficient use of CMC dollars. After some deliberation and negotiation, CMC decided to work with the local economic development agencies on a case by case basis. Activities that CMC agreed to sponsor included breakfast meetings, training, and/or special cluster activities. This cafeteria style partnership has led to closer working relationships between CMC and most of the local economic development groups.

Customer Satisfaction Surveys

CMC implemented a very basic customer satisfaction survey shortly after opening. However, initially, feedback from the surveys was not used for continuous improvement. This changed early in 1996. The customer satisfaction survey was redesigned. The outcome was one survey for assessments and a different one for projects. The initial survey had been administered by an outside telemarketing firm. With the redesign, the decision was made to bring the administration and analysis in-house.

Surveys are now sent out by the Evaluation Manager. When a response is received, the Evaluation Manager gives immediate feedback to the Vice President of Operations who shares the findings with the appropriate program managers. In the event that a company expresses negative comments, the Vice President of Operations

or the appropriate program manager immediately contacts the company (in person if possible) to try and clear up the problem.

Analysis of aggregate survey results has yielded some interesting findings, which in turn have been addressed by CMC Management Team. These findings are described below.

Assessment

A major concern expressed consistently in assessment survey responses was that clients really wanted CMC staff to provide more guidance in helping them set priorities. This concern has led to the addition of a section in the assessment report that prioritizes the recommended projects and includes a cost benefit analysis with each option (where possible).

Projects

Feedback from CMC project survey indicated client dissatisfaction with lack of clarity of project descriptions and goals. This issue has been addressed by requiring project managers to develop a benefits quantification to accompany project proposals (when possible). This tool prompts project managers to discuss project benefits in a way that should also make it easier for the company to quantify impact for the NIST/Census survey. At the same time, a decision was made to remove anticipated benefit questions from CMC customer satisfaction survey. The Quality Team felt that to ask the company to quantify anticipated benefits so soon after the benefit quantification exercise would be duplicative.

NIST/Census Survey: Economic Impact

The NIST/Census survey was first introduced in 1996. CMC first had to submit project information to the Census

Bureau by the middle of February 1996 for survey over the following six months. This process has continued at six month intervals. Only recently has the NIST/Census survey yielded sufficient data points to allow analysis of results. As of October 31, 1997, the Census Bureau has attempted to survey 221 CMC clients.¹ The type of activity clients received was split between assessments (109) and projects (112).

The first important fact to emerge is the high number of companies that the Census has been unable to contact for a variety of reasons (56 or 25 percent of total clients).

Unable To Contact

11	No Knowledgeable Contact
3	Ring but no answer
10	Need to call back
7	Temporarily unavailable
8	Refused to answer
3	Closed
14	Other

The large number of companies for which there was no answer or no knowledgeable contact (14) has led to a review of CMC company database and development of procedures to make sure the database captures any changes in company information. Prior to adopting these new procedures, CMC program managers were not routinely providing company changes to the database administrator. The large number of contacts (17) where the contact was either temporarily unavailable or asked to be called back indicates that NIST should consider implementing a longer term survey follow up process.

¹ See Appendix for summary statistics

Seventy five percent of the clients completed the survey protocol and answered the customer satisfaction question. For this population, the average satisfaction was 4.09, indicating an overall positive level of satisfaction. When asked questions about impact, less than 50 percent (104) of the total customer population claimed that they had made enough changes to comment on impact. CMC Quality Team is currently investigating why the remaining 25 percent (61 clients) were not able to comment.

The 104 clients indicating that they were able to comment on impact can be broken down as follows:

In A Position To Comment On Impact

16	No Impact
27	Qualitative Impact
45	Qualitative and Quantitative
16	Quantitative

The above table indicates that 16 companies claimed that the intervention resulted in no impact (quantitative or qualitative). Activities for the 27 clients indicating only a qualitative impact consist of 10 assessments and 17 projects. Seventy five percent of these projects are of a research, evaluation, or planning nature. Comments from clients claiming qualitative impacts fall into several main categories of improvement: morale, awareness, clarification, communication, and systems of production.

Clients Claiming Economic Impact

	Yes	No
Assessments	22	22
Projects	39	21

Sixty one of the clients indicating that they had made enough changes as a result of assistance to comment on the impact claimed that the intervention had caused an

economic (quantifiable) impact, while 43 claimed there was no economic impact.² This figure is rather startling given that one of CMC goals is to act as a change agent for small and medium sized manufacturing companies. The Quality Team is currently investigating why so many companies are claiming no economic (quantifiable) impact. However, a cursory look at the statistics indicates that of the 43 clients claiming no quantitative impact, 22 received company assessments conducted by a CMC team. It is unlikely that an assessment, in and of itself, leads to an economic impact. The remaining 21 clients for which CMC did projects and who said there was no impact is rather disconcerting at first glance. However, this group had an average satisfaction rating of 4.14, indicating they were relatively happy with CMC services. These two facts can be reconciled if one looks at the type of project falling into this group. At least 14 out of 21 are either evaluation, research or planning projects of one type or another. These types of projects do not lend themselves to quantification. Clients did, however, provide qualitative impact information for 17 of these projects.

Twenty-two of the clients for whom assessments were conducted (50 percent) quantified impacts. The average satisfaction rating for this group was 4.50. The majority of these clients went on to do projects shortly afterward. We believe that they answered the impact questions based on the project rather than the assessment.³ Once this problem was identified, CMC introduced new procedures to minimize any future occurrence. A decision was made not to survey clients upon completion of an assessment if they go on to do a project.

² Economic Impact measured in terms of changes in jobs, sales, inventory, material cost, or labor costs.

³ This opinion is based on interviewing several clients and correlating clients that completed assessments with those that went on to complete projects.

The two activities are now bundled.

Thirty nine clients for whom projects were delivered were able to quantify the impact of the intervention. For this group, the average satisfaction rating was 4.59. Examining the types of projects falling into this category yields interesting, but not surprising, results. Most of the projects tend to involve implementation of one activity or another, including: management practices; process improvement; plant layout; market development; and quality. The most significant factor in determining whether or not the client believed the project had an

impact appears to be project intensity (the number of hours spent on the project). For the entire population, the average number of hours per project is 62. This figure was 56 hours for those projects where the client said there was no impact. However, for those projects where the client said there was an impact, the average number of hours spent was 111 per project - the more intense the project, the greater the likelihood that the client will recognize the impact. In this instance, the number of hours acts as a proxy for cost, as CMC billed out at an hourly rate during the period of analysis.

Companies Able To Quantify Impact

	Impact	Quantify	Range
Sales	17	14	\$20,000 - \$1,500,000
Labor Cost	17	8	\$4,500 - \$9000,000
Material Cost	8	4	\$5,000 - \$10,000
Inventory Cost	8	3	\$50,000 - \$500,000
Jobs Created	25	25	1 - 50
Jobs Retained	8	8	1 - 100

Few conclusions can be made using the data on which type of projects generate particular types of impact. Market development projects tend to lead to sales increases and job creation. Human resource projects tend to cause changes in labor costs. Process improvement projects tend to reduce labor and material costs and lead to changes in employment. Hopefully, over time, the addition of more data points will permit richer analysis in this area.

The NIST/Census survey results have caused several changes in how CMC decides when clients should be surveyed. Clients who have assessments are no longer

surveyed if there is a reasonable possibility that the client will go on to do a project. Assessments are then bundled with projects. Second, research/evaluation type projects are no longer surveyed if additional implementation projects are pursued - in other words, evaluations are bundled with implementation. The major outstanding issue for CMC is to improve the number of clients claiming that CMC services generated an economic impact and the number who are able to quantify this impact. As mentioned above, one strategy already underway is to perform benefits quantification for every project, when possible. One idea currently being debated

within the Quality Team is the appropriateness of including measurables from the survey in staff performance measures.

However, the number of clients unable to quantify impact but able to offer qualitative statements should not be ignored or underestimated. MEP should examine the responses coming back system-wide in this category and determine if additional specific questions could be added to probe for quantitative results. In addition, if MEP staff intend to compare survey results across centers, guidelines on when to survey clients should be issued.

Comparison of CMC and Census/NIST Survey

CMC project survey is administered upon project completion. The NIST/Census survey is administered 9 months after a project is completed. Results obtained from these two surveys for the same companies are significantly different. For example, the CMC survey average satisfaction rating for the 16 companies that completed both surveys was 3.94, compared with an average of 4.46 from the NIST survey. In addition, CMC survey figures for anticipated benefits were much higher in all categories except jobs created. For example, the NIST survey figure for increased sales was only 43 percent of the figure obtained from the CMC survey data. Jobs retained figures in the NIST survey were 48 percent of the CMC total. The job creation figure in both surveys was similar.

These economic impact statistics indicate that information gathered upon project completion is very optimistic and not very reliable, with the exception of job creation which probably happens right away. This analysis will be used to demonstrate to CMC other funding agencies that they should not require reporting of impact at the time a project is completed as numbers are a

highly inflated representation of what actually occurs in reality. These figures may also be an indication that clients have unrealistic expectations of the impact of the project. Again, hopefully the benefit quantification exercise conducted as part of the project proposal will make sure that clients have more realistic expectations.

Appendix

Summary Statistics - NIST Census Survey Chicago Manufacturing Center

Type of Contact	Number	Percent
Eligible to be surveyed	221	100
• Could not be contacted	56	25
• Could not comment on impact	61	28
• Could comment on impact	104	47

Clients surveyed through to October 31, 1997.

Breakdown of Satisfaction Rating and Project Intensity

	Number of clients	Satisfaction rating	Number of Average # hours
All contacted	165	4.09	61
Could not comment on impact	61	3.67	53
Could comment on impact	104	4.34	66
No impact	16	3.81	30
Qualitative impact only	27	4.15	51
Quantifiable impact	61	4.56	82
Quantifiable project	39	4.59	111
Quantifiable assessment	22	4.50	31