

Evaluating Information Center Effectiveness: A Case Study

J. ELLIS BLANTON
UNIVERSITY OF SOUTH FLORIDA

ABSTRACT

For most IS executives, the management of end-user computing represents one of the most significant problems they currently face. Many firms are turning to Information Centers (ICs) as a mechanism for educating end users and coordinating their computing activities. The primary objective of this case study was to examine a project undertaken by the IS management at General Telephone of Florida (GTFL) to measure the effectiveness of its Information Center (IC) by using the Critical Success Factor (CSF) methodology proposed by Leitheiser and Wetherbe. Two hundred end users were asked to rank 18 CSFs by importance to IC success and rate how well each CSF was achieved. One hundred and forty usable questionnaires were returned and analyzed to determine the relative ranking and achievement rating of CSFs for IC success at GTFL. Based on results of the survey, action is being taken by IS management to improve the effectiveness of the IC. In addition, the CSF methodology was evaluated and found to be relatively easy to implement and very useful.

INTRODUCTION

For most IS executives, the management of end-user computing represents one of the most significant problems (and opportunities) they currently face [2]. On the positive side, end users are now developing numerous applications that formerly required the attention of IS professionals. With widespread availability of personal computers, managers and professionals have begun to develop systems that they have needed — but could not obtain through traditional channels. And, with growing backlogs facing most IS organizations, this “off-load” of work can be very positive.

On the dark side, however, it is clear that users do not have professional IS experience and they often develop systems that are inappropriate for the technology selected [4]. In addition, because many such systems are designed “at the keyboard” they sometimes don’t really satisfy the user’s requirements — this ultimately creating more work for the already overburdened IS organization. Many IS executives also believe that users waste considerable time and money “reinventing” much of the knowledge that already resides within IS.

In response, many firms are turning to Information Centers (ICs) as a mechanism for educating end users and coordinating their computing activities. The fundamental reason for establishing such organizations is to help users develop their own applications subject to the practices of good data processing hygiene. Initially these organizations were small groups of programmers/analysts who helped us-

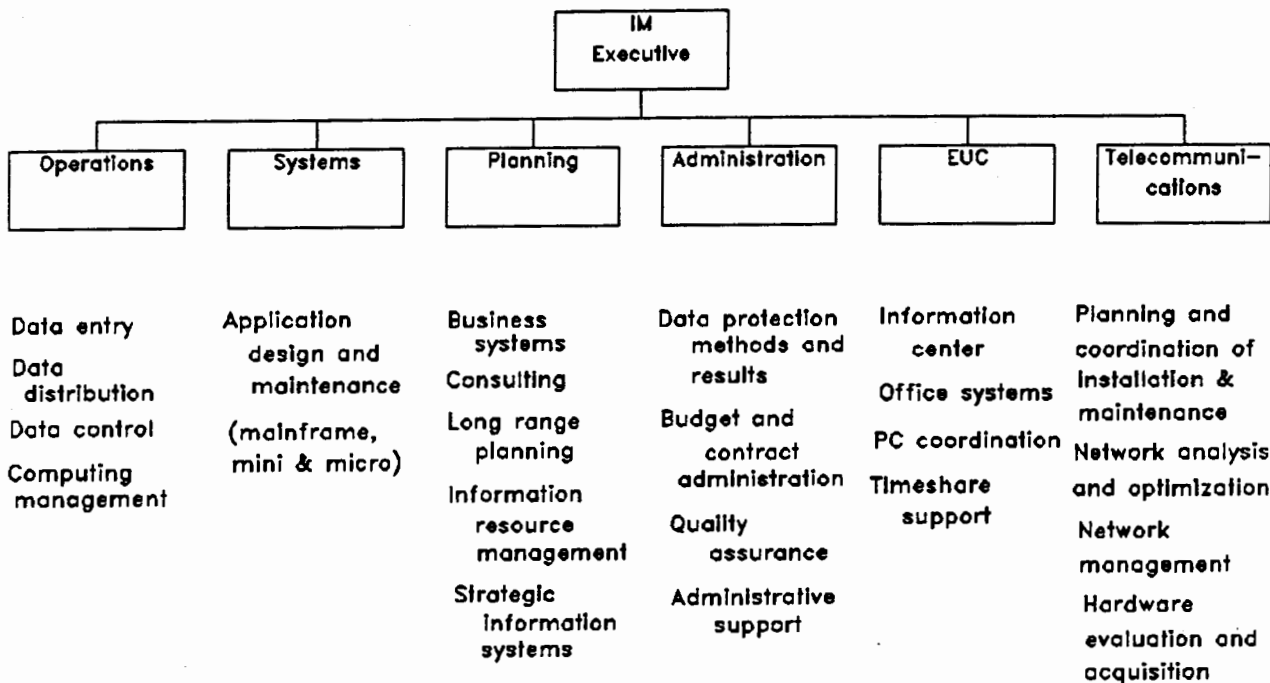
ers purchase equipment, access data bases, generate reports, etc. With end-user computing growing 60 to 90 percent per year [5], however, it has become increasingly important to evaluate IC performance. If, as Benjamin [1] suggests, end-user computing will account for 75 percent of the typical IS budget in 1990, then measures of IC effectiveness may well equate with effectiveness of the entire IS function.

The primary objective of this case study was to examine a project undertaken by IS management at General Telephone of Florida (GTFL) to measure the effectiveness of its IC. The methodology used for the project was one proposed by Leitheiser and Wetherbe [3]. A description of GTFL and its IC follows. Next, Leitheiser and Wetherbe’s methodology is explained in more detail. The project is then described including data collection and analysis. And finally, the benefits and problems identified with Leitheiser and Wetherbe’s methodology are presented.

GENERAL TELEPHONE OF FLORIDA

General Telephone of Florida (GTFL) is one of seven telephone companies under the umbrella of GTE Corporation. GTFL provides local telephone service, access to long distance service and other communication services including: mobile radio, digital data systems, devices for the deaf, private branch exchanges, video conferencing and closed circuit television systems. The principle markets served are the residential and commercial customers within a franchised area that includes most of west-central Florida. GTFL has

Figure 1
GTFL MIS Department Organization



more than 10,000 employees and annual revenues of more than \$1 billion.

Deregulation of the telecommunications industry and the subsequent break up of AT&T transformed the once controlled industry into a dynamic industry with many new entrants competing with the older established companies. GTFL has responded to this competition by adopting state-of-the-art information and communication technology for improved decision making.

The MIS Department is located in downtown Tampa, Florida, and comprises 216 employees divided into six divisions (see Figure 1). The End-User Computing Division is responsible for establishing guidelines, standards, and resources for facilitating and controlling end-user computing. An IC was established in 1981 to interface with users and to deliver required services.

GTFL was the first GTE telephone company to open a formal IC. Since that time, numerous other companies throughout GTE have used the GTFL IC as a model. Six full-time specialists assist users with their business information needs by providing personalized and group support both on-site (in the end user's work place) and at the IC facility. To date, more than 400 non-data processing professionals have used IC services such as equipment and software evaluation, technical support, and workshops in application development

and data management. The IC supports information services in both microcomputer and mainframe environments. Software currently available on mainframe include: SAS, RAMIS II, and GDDM. Software for microcomputers include: Lotus 1-2-3, Symphony, Crosstalk, dBase III/IV, and Samna.

GTFL's IC supports a large population of end users with a variety of information needs. Information concerning new products, current and potential markets, competitors, and organizational performance is very important to GTFL managers. As such, the IC plays a vital role in the decision making performance of the managers and in the corporation's overall success. This role is primarily accomplished in three ways. First, data sets are created and refreshed periodically for financial and accounting personnel to analyze using appropriate microcomputer software. Second, operations personnel have on-line access to operating data for analysis of telephone-oriented services. Third, periodic management reports are created in both batch mode and on-line query to assist in assessing the demand for other services provided by GTFL.

LEITHEISER AND WETHERBE'S METHODOLOGY

As stated earlier, the methodology used was one proposed by Leitheiser and Wetherbe [3]. Based on interviews

Table 1
CSF Ranking and Ratings — by Ranking
(Most Important to End Users)

Critical Success Factor	Rank	Rating
1 Provide needed services in a timely way	5.4	2.8
2 Develop a competent staff	6.1	3.6
3 Select & support "right" software packages	6.5	3.4
4 Do effective end-user training	6.8	3.1
5 Quickly respond to development requests	6.9	2.6
6 Maintain good system performance	7.9	3.8
7 Deliver solutions in a cost effective way	8.4	3.0
8 Good communication with end-user departments	8.6	3.2
9 Know users' business and problems	8.6	2.9
10 Manage user expectations	9.4	2.8
11 Monitor & coordinate end-user development	9.8	2.8
12 Clearly define IC's mission	10.4	2.8
13 Obtain support of top management	10.7	3.3
14 Create a comfortable atmosphere for users	11.3	3.7
15 Effectively promote IC's services	11.8	3.1
16 Organizational acceptance of IC concept	12.9	3.2
17 Provide service to distributed sites	13.2	2.5
18 Successfully implement electronic mail	16.8	2.2

Table 2
CSF Ranking and Ratings — by Ratings
(Least Successfully Achieved)

Critical Success Factor	Rank	Rating
1 Successfully implement electronic mail	16.8	2.2
2 Provide service to distributed sites	13.2	2.5
3 Quickly respond to development requests	6.9	2.5
4 Provide needed services in a timely way	5.4	2.8
5 Monitor & coordinate end-user development	9.8	2.8
6 Manage user expectations	9.4	2.8
7 Clearly define IC's mission	10.4	2.8
8 Know users' business and problems	8.5	2.9
9 Deliver solutions in a cost effective way	8.4	3.0
10 Do effective end-user training	6.8	3.1
11 Effectively promote IC's services	11.8	3.1
12 Good communication with end-user departments	8.6	3.2
13 Organizational acceptance of IC concept	12.9	3.2
14 Obtain support of top management	10.7	3.3
15 Select & support "right" software packages	6.5	3.4
16 Develop a competent staff	6.1	3.6
17 Create a comfortable atmosphere for users	11.3	3.7
18 Maintain a good system performance	7.9	3.8

with 27 IC managers, they developed separate lists of 17 IC successes and 17 IC problems. Using these as a basis, each IC manager then identified the three or four factors which were essential for IC success. Analysis of these factors revealed 18 Critical Success Factors (CSFs) for IC success.

Leitheiser and Wetherbe then proposed a methodology for measuring the overall effectiveness of an IC that would determine the relative importance of each CSF and the extent to which they would be achieved. The methodology involves three steps. First, end users are asked to rank the CSFs in order of importance to the success of the IC. The same end users are then asked to rate on a 5-point Likert scale how well each CSF is achieved. Second, the individual rankings are combined to create an overall ranking of each CSF. The ratings are also combined to derive an overall perspective of

how well each CSF is achieved. Third, the results are reviewed by IC managers and end users — areas for improvement are identified, and objectives for effective management of the IC are established.

THE PROJECT — DATA COLLECTION AND ANALYSIS

The project was conducted in two phases. The first phase involved distributing CSF questionnaires to 200 end users and determining the relative ranking and successful achievement rating of each CSF. End users were requested to: (a) rank, starting with "1" as "most important," a list of CSFs in the order of their importance to the effectiveness of the IC, and (b) rate, on a 5-point Likert scale with "1"

indicating low success and "5" indicating high success, each CSF in terms of how successful they felt it was achieved. The individual ranking and ratings were combined and together provided an indication of which CSFs were more important to the end users and how successful the IC was in achieving them.

Table 3
Categorized CSFs

-
- I. CSFs with a satisfactory achievement rating
1. Develop a competent staff
 2. Do effective end-user training
 3. Effectively promote IC's services
 4. Create a comfortable atmosphere for users
 5. Gain organizational acceptance of IC concept
 6. Obtain support of top management
 7. Maintain good system performance
 8. Deliver solutions in a cost effective way
 9. Select and support the "right" software packages
 10. Establish good communication with end-user departments
- II. CSFs with an unsatisfactory achievement rating (<3.0)
1. Successfully implement electronic mail
 2. Provide service to distributed sites
 3. Quickly respond to development requests
 4. Provide needed services in a timely manner
 5. Monitor and coordinate end-user development
 6. Manage user expectations
 7. Clearly define IC's mission
 8. Know users' businesses and problems
-

A total of 140 usable questionnaires were returned giving a return rate of about 70 percent. The results of the ranking and achievement ratings of the CSFs are illustrated in Table 1 and Table 2. In Table 1, the CSFs are listed starting with the lowest average ranking (most important CSF to end users). No additional CSFs were added to the list by end users. In Table 2, the CSFs are listed starting with the lowest average rating (least successfully achieved).

The second phase consisted of a meeting with IC personnel and the vice president of Information Management to discuss results of the study. During this meeting, the relative ranking and achievement ratings of each CSF were discussed in detail. Each CSF with less than a 3.0 achievement rating, the midpoint of the Likert scale, was determined to have an unsatisfactory level of successful achievement (see Table 3). Using this information and the relative importance ranking, the management at GTFL is currently reviewing the services provided by the IC and will make resource adjustments that they feel will result in a more effective IC.

CONCLUSIONS

The methodology was found to be relatively easy to implement and evaluate. The CSFs covered all of the issues that GTFL users felt were important. And, most important of all, the managers at GTFL felt that the study identified several areas that required improvement.

A follow-up meeting was held with IC managers and interested end users to discuss the project and its results. During this meeting, the following specific benefits and problems with Leitheiser and Wetherbe's methodology were identified:

Benefits

1. Forced end users and IC personnel to think about CSFs.
2. Provided feedback concerning end users' feelings regarding services provided.
3. Provided useful information concerning allocation of resources.

Problems

1. Interpreting meaning of some CSFs.
2. Mentally juggling 18 CFS.
3. Little variance on rating scale.

Overall, both the IC managers and the end users felt that the methodology successfully characterized the IC at GTFL. To the extent that GTFL is representative of other firms where information processing is critical to overall success, this study might be used as a comparison with other firms. Now that this evaluation methodology has been shown to be successful, and a benchmark at GTFL has been established, further work to determine how and why CSFs for ICs vary from firm to firm should be conducted.

REFERENCES

- [1] Benjamin, R., "Information Technology in the 1990s: a Long Range Planning Scenario," *MIS Quarterly*, Volume 6, Number 2, 1982, pp.11-31.
- [2] Dickson, G., Leitheiser, R., Nechis, M., and Wetherbe, J., "Key Information Systems Issues for the 1980s," *MIS Quarterly*, Volume 8, Number 3, pp.135-148.
- [3] Leitheiser, R. and Wetherbe, J., "The Successful Information Center: What Does it Take?" *Communications of the ACM*, March 1985, pp.56-65.
- [4] Pyburn, P., "Managing Personal Computer Use: The Role of Corporate Management Systems," *Journal of Management Information Systems*, Volume 3, Number 2, 1986-87, pp.49-70.
- [5] Rockart, J. and Flannery, L., "The Management of End-User Computing," *Communications of the ACM*, October 1983, pp.776-784.

ABOUT THE AUTHOR

J. Ellis Blanton is an Assistant Professor of MIS in the College of Business Administration at the University of South Florida. He received his Ph.D. in Management Information Systems from the University of Georgia in 1987 and has published articles in banking and MIS journals, and has presented papers at national professional conferences. His primary research interest is the effective management of information technology in organizations.