An Assessment of Critical Success Factors

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Critical Success Factor Analysis as a Methodology for MIS Planning

By: Michael E. Shank
Financial Institutions Assurance Corporation
Post Office Drawer 2688
Raleigh, North Carolina

Andrew C. Boynton
Robert W. Zmud
The University of North Carolina
School of Business Administration
Carroll Hall, 012A
Chapel Hill, North Carolina

Abstract

This article addresses the use and benefits of the Critical Success Factor (CSF) methodology in identifying corporate information needs and, subsequently, in developing a corporate information systems plan. The conclusions presented are drawn from an analysis of a CSF study conducted at Financial Institutions Assurance Corporation (FIAC). Interestingly, the initial purpose of this study was to evaluate the firm's existing data processing system in light of intermediate-term corporate objectives. However, the outcome of the CSF study has been a fundamental rethinking of the nature of the corporation, and its impact far surpassed the initial expectations of everyone involved. The case presented here, combined with information drawn from the CSF literature, can provide a number of meaningful insights on the use of the CSF methodology as a procedure for MIS planning and for building support for using information technologies throughout a user population.

Keywords: Critical success factors, MIS planning, planning methodologies, MIS strategic planning

ACM Categories: H.4.0, K.6.4

Introduction

Historically, FIAC's operating posture, in regulating insured financial institutions through field work and cooperative efforts with state authorities and independent auditors, was *reactive* in nature. Through insights gained via the Critical Success Factors (CSF) study, the Corporation has become much more *proactive* in its relationships with member institutions. There has been a rethinking of FIAC's information infrastructure, an MIS Department has been created, and information technology is now regarded as a strategic tool with which to leverage corporate productivity and enhance FIAC's ability to compete in the marketplace. The CSF methodology has also been adopted as a continuing methodology for both departmental and strategic planning.

Corporate History

FIAC is a private deposit insurer created in 1967 pursuant to North Carolina law. The broad statutory purposes of the Corporation are: 1) to insure the deposits of member financial institutions, and 2) to assure the liquidity of its member institutions. More specifically, FIAC must protect the savings of depositors in its insured institutions by seeing that these institutions maintain an adequate net worth and cash flow. As a private deposit insurer, FIAC provides services similar to the services provided by the Federal Deposit Insurance Corporation (FDIC). FIAC competes with federal deposit insurers and other private deposit insurers for financial institutions' business.

FIAC's original base of eleven insured institutions had total savings of $50 million at the end of 1967. At the end of 1983, FIAC insured 65 institutions with total savings in excess of $2.8 billion. Early growth resulted from a lack of competition. When FIAC was created there was no national deposit insurance program for credit unions. Many savings and loan associations chose not to obtain Federal Savings and Loan Insurance Corporation (FSLIC) insurance or would not qualify for such coverage because of their small size or rural markets.

In the early 1970's the National Credit Union Administration (NCUA), a federal agency, was created to insure the deposits of credit unions. As the savings and loan industry grew, more institutions became eligible for FSLIC insurance. And as competition for consumers' deposits increased, financial institutions used federal deposit insurance as a competitive weapon to lure savings from uninsured or FIAC-insured institutions.

FIAC, however, worked with state financial regulators and legislators to reform laws and regulations which restricted the operation of state chartered financial institutions. These new laws and regulations allow FIAC insured, state chartered financial institutions to better serve consumers. Institutions with federal deposit insurance were restricted as to the types of loans they could make and the amount of interest they could pay on savings. These operating advantages contributed to the growth in size and number of FIAC insured institutions. The competitive advantages of state chartered, privately insured institutions was a contributing factor to the federal deregulation of financial institutions in the late 1970's and early 1980's.

The increased powers and rapid growth of FIAC insured institutions placed increasing demands on FIAC's ability to monitor these institutions. Manual analysis gave way to programmable calculators, and finally to an automated financial analysis system run as a monthly batch job on a minicomputer. The relative stability of the environment, the outdated computerized information systems of FIAC's competitors, and the small number of institutions being monitored by FIAC allowed the original computer system to remain in place for several years.

Financial institutions, like many other businesses, were rocked by record high interest rates in the early 1980's. Failures of financial institutions and payouts by deposit insurers occurred in historically high amounts. FIAC was able to withstand these fluctuations without incurring any losses. The corporation is very proud of its record of safety. Neither FIAC, nor any of its insured institutions, have ever had a loss from a deposit related claim. However, the pressures of maintaining this record led FIAC to adopt a very defensive corporate posture.

Deregulation essentially erased most of FIAC's competitive advantages. All institutions, not just those insured by FIAC or other private insurers, could pay market interest rates. All institutions enjoyed broad asset and investment powers. Recognizing the need to regain its marketing edge and bolster its ability to maintain its record of safety, FIAC's Board of Trustees decided in 1983 to pursue a strategy of geographic and institutional diversification in order to spread risk and increase the potential market. A change in its enabling legislation allowed FIAC to offer deposit insurance to any institution eligible for FDIC, FSLIC or NCUA insurance regardless of geographic location. Prior to this change FIAC could only insure credit unions and savings and loan associations in North Carolina. FIAC is now the only private deposit insurer authorized to insure all types of financial institutions (banks, credit unions, savings and loan associations, and others) throughout the United States.

The Corporate Culture and Environment Prior to the CSF Study

FIAC exhibited many of the traits of a small business which has experienced rapid growth. Management decisions were made by the Chief Executive Officer or were centralized in a small group of individuals. These individuals controlled all aspects of the corporation's operations. Planning and operations were approached with a short time horizon. More time was spent dealing with operational problems than anticipating them. The staff had excellent entrepreneurial spirit and was very flexible. Staff members were hard working "athletes" in keeping with the corporation's "lean and mean" culture. Monitoring insured institutions was characterized by a large amount of data gathering and a short analysis period before the data gathering cycle began again. Communication between staff members was informal and infrequent. Higher level managers were generalists with responsibilities in all areas and lower level staff members carried out narrowly defined

functions with little direct knowledge of the Corporation's overall activities.

Analysis of insured institutions required a great deal of work by a small group of individuals who supplemented financial data with large amounts of soft information gathered through industry and regulatory sources, as well as visits to insured institutions. Individuals became responsible for certain institutions by default because of the large amount of undocumented information they personally maintained about those institutions. This necessity to rely on rather intimate client relations became troublesome when the corporation took supervisory action against several insured institutions. The staff contact person, long viewed as a friend of the insured institution, came to be seen as a potential threat, capable of initiating supervisory actions against the institution or its management.

FIAC's original minicomputer system was purchased with the understanding that customized, third party software would be developed over several months and purchased for $10,000. The development actually took 18 months and cost over $40,000. Once installed, the system was maintained during a staff member's "spare time." A standard set of reports was produced on a monthly basis using insured institutions' financial statements and statistical summaries as input. There was no separate corporate budget for data processing.

With the installation of this first computer system, data processing was viewed as a necessary evil to relieve tedious "number crunching" on a monthly basis. The formal processes involved in retrieving and manipulating data were actually seen as dysfunctional by some staff members. Many staff analysts made extensive use of paper spreadsheets and hand held calculators both before and after the installation of this first system.

FIAC's entrepreneurial culture and the maintenance of private data by staff analysts had an adverse impact on initial data processing efforts. Information was viewed by some individuals as a critical source of power they could use to influence decisions. Other staff members argued that this centralized data processing activity was impairing the corporation's flexibility.

The CSF Project

The corporation's defensive posture, combined with a volatile economy, continuing deregulation, and planned corporate expansion led to a proposed review of FIAC's data processing system in 1983. Senior management conceived this as a technical review of system capacity in light of the corporation's expansion plans. Management also hoped to be able to improve the efficiency of the present system by increasing the computer's input, throughput, and output capabilities.

A consultant was hired to review the existing system's capacity and to recommend a plan for enhancing this capacity. The consultant felt that senior management had underrated the potential impact that data processing could have within the corporation. He approached senior management with the concept of critical success factors (CSF's). The CSF concept was intuitively appealing to senior management. Its potential to focus attention on vital organizational issues appeared useful in a number of areas within the corporation.

Capitalizing on the appeal of the CSF method, the consultant then suggested that FIAC adopt an *information resource* approach to the project rather than the initial *information function* approach [3]. An information resource approach to MIS planning uses an organization-wide perspective in addressing the management of a firm's information systems. An information function planning approach deals mainly with the technical activities involved in establishing and managing a firm's information systems.

The consultant educated the corporation's staff on the CSF concept, providing reading materials [4] and answering questions. Each staff member was asked to make a list of personal CSFs and a list of corporate CSFs in preparation for meeting with the consultant.

The consultant and a senior manager interviewed *every* member of the staff at *all* levels of the organization. The interviewee was asked to relate his individual and corporate CSFs. The ultimate purpose of the CSF project (that of information resource planning) was not revealed. The interviewee was not asked to discuss sources of information until he had described all

of his CSFs and related ideas. The consultant and senior manager were careful not to lead the discussion in any direction. Staff members were encouraged to be open and to express their own opinions, not their perception of management's opinions. Nondirective counseling techniques and other measures were used to encourage creativity and free expression [2].

A chart of CSFs was developed by the consultant following the interviews. From this chart, an aggregated list was made for the corporation as a whole. This list grouped trends and eliminated repetitive responses. Similarities and differences within departments were noted. A list of corporate CSFs was then developed from the aggregated list.

A staff retreat was held to examine and discuss corporate, departmental, and individual CSFs. At this retreat, staff and management focused on organizational changes which internal growth and environmental change seemed to demand. By linking information resource planning, organizational redesign, and strategic planning through the CSF focus, information technology became a catalyst to discussions of desirable organizational changes. The corporation had been built on people; the most appropriate use of information technology by FIAC would be to leverage its staff through technology. Through these discussions it became clear that an information system mission directed toward the "efficient" processing of information would not meet FIAC's evolving organizational information needs.

The retreat characterizes the participative nature of the CSF process. This was particularly important at FIAC because of a gap which had arisen between senior management and staff. The methodology made formerly *implicit* corporate goals *explicit*, thus resulting in their specific inclusion in the planning process. Moreover, explicitly stated goals, shared by both staff and management, served to reduce conflict and increase cooperation.

The approach taken, and the results of the staff retreat, provided an excellent structure for the staff's annual strategic planning session. A cross section of the staff reviewed and critiqued the final CSF lists. A prioritized consensus list of CSFs was used to guide the development of a new organizational structure and as a template for the staff's annual planning session agenda. The final CSF list read:

1. Prevent losses through risk management,
2. Increase diversification of the customer base,
3. Increase professional staff productivity, and
4. Enhance the corporations image with the firm's markets and the public.

Meetings were held with staff members, individually and in groups, to develop specific organizational information needs. These needs were used as input into the design of the corporation's new computer-based information system. Subsequent staff discussions were held to review specific hardware/software products and develop an implementation plan for moving to a new corporate information environment.

Figure 1 summarizes the process used in the CSF study. Steps 1 through 10, actual events, are highlighted by the accompanying interpretive remarks.

Corporate Impact

The CSF study has had a profound impact on FIACs use of information technology and its corporate culture. Four distinct impact areas are described: the new information system plan, changes in the corporation's attitude toward data processing, increases in staff productivity, and the adoption of the CSF methodology as a continuing management tool.

The information system plan

The major result of the CSF was the redefinition of the corporation from an *operations-driven deposit insurer* to an *information-driven risk manager*. A three stage approach to redesigning the corporation's information infrastructure reflects this new orientation.

Stage One: Information Processing

First, the corporation's present batch-oriented minicomputer will be replaced with a supermini to serve as a host to personal microcomputer

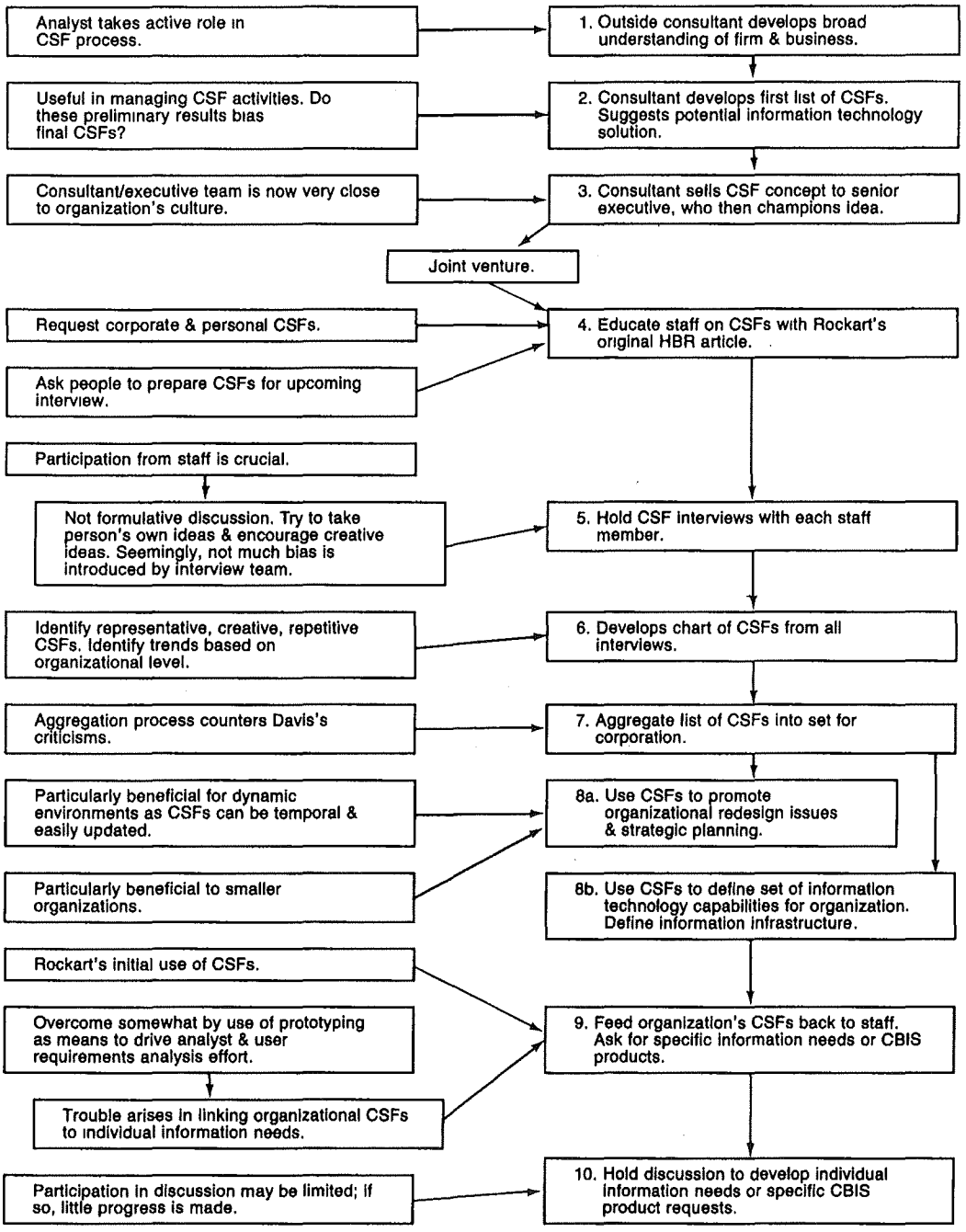

Figure 1. Processes in the CSF Study

workstations. The supermini will maintain a newly designed database that will allow access to information currently stored off-line, unavailable to staff analysts and managers.

The system will provide for the collection and retrieval of both hard and soft data. Information previously gathered in analyst's conversations and stored in their personal files or memories will now be available on-line. The host will also provide access to external databases. This new data will provide quantitative support for decisions which have historically been made based on individual perceptions. Financial analysts will have the ability to download both hard and soft data from the host to personal computers and to manipulate it using spreadsheet, query, and word processing packages.

Applications are currently being prototyped using personal computers and the corporation's present database. Current prototypes include decision support systems intended to reduce the amount of time spent by analysts reviewing standard reports. Time formerly spent using calculators and paper spreadsheets to crunch numbers will be used for information analysis, problem solving, and direct contact with insured institutions.

Stage Two: Office Automation

In the second stage, data processing functions on the supermini will be integrated with an office automation system which includes shared logic word processing, integrated graphics, electronic mail, electronic filing, calendar management, and project tracking. This integration will enhance the efficiency and effectiveness of staff analysts in their efforts to monitor insured institutions. This integrated system will be accessed by field analysts using portable personal computers. This should enhance productivity outside of the office, bolster both intraorganizational and interorganizational communications, and make information resources available to all staff members at all times, regardless of their proximity to the home office. Initial production of prototype reports using graphics, word processing and customized spreadsheets have already enhanced information dissemination internally and with insured institutions.

Stage Three: Future Automation

The third stage will involve developing direct access to the information maintained by insured institutions on their in-house or time sharing systems. It is expected that pioneering such a client relationship within the industry will enhance the technological edge the corporation now holds over its major competitors.

Corporate attitude toward data processing

In the past, data processing was seen as a confining operation which was unable to keep up with the changing environment in which the corporation operated. Management and staff at FIAC now view information technology as a driving force which provides the corporation with a vital competitive edge. Consider the evolution of one senior manager's attitude:

"We don't need a computer."

"What's wrong with the system we've got?"

"When do I get my PC?"

"When will the new database be operational?"

The corporate culture vividly reflects this attitude change. The only nonfinancial industry professional ever hired by the corporation is the new MIS Director. This individual, an MBA with previous MIS work experience, was hired more for his business sense than his technical competence. His position is intimately tied to FIAC's planning process and is expected to influence strategy in the new corporate organization. The new MIS Director oversees the expenditure of 10% of the Corporation's operating budget. These expenditures are projected to be more than equaled by increased revenues from expansion, new information-related customer services, and decreased expenses from better risk management.

The changes in corporate attitude toward information technology were aptly captured in a recent presentation by the CEO to a state legislative study commission. The CEO, once skeptical of the need for a commitment to infor-

mation processing, used a portable computer linked to a wide screen television to present various spreadsheets and graphs on the financial services industry, the economic environment, and FIAC's financials. The CEO has requested that additional computer-based presentations be prepared for meetings with state regulators. The use of computers has added considerably to the effectiveness of presentations like these and has led to FIAC being perceived as a technological leader within the industry.

Staff productivity

Access to databases and decision support systems using personal computers have contributed to increased information availability throughout the Corporation. This has increased the productivity of established staff members, allowed new staff members to become productive more rapidly than in the past, and contributed to the generation of new ideas by staff members at all levels of the Corporation. Management confidence in staff members has consequently increased. This increased confidence, along with an ability to track projects more closely using PC's, has increased the extent to which responsibilities are delegated. This, in turn, will hopefully enhance the Corporation's management development process.

Through the use of personal computers the Corporation has increased its ability to provide significant amounts of analyzed data to insured institutions. This has helped rebuild the intimate relationships which existed prior to the supervisory actions of the early 1980's. At the same time, these rebuilt relationships and the increased availability of information have expanded FIAC's control over insured institutions. The ability to rapidly analyze large amounts of data, calculate peer comparisons, and carry computing power into the field has given staff analysts more confidence and increased the respect that managing officers of insured institutions have for these analysts.

FIAC's confidence in its ability to use the CSF methodology and its enhanced information technology allows the corporation to cope better with uncertainty. The corporation has grown out of its defensive posture. In the past, uncertainty and rapid change were viewed as threats. Now they are seen as opportunities which FIAC can successfully exploit using its information resources. The difficulties of managing risk in an ever-changing and growing market now provide an opportunity for FIAC to outperform other deposit insurers who exhibit a more traditional approach to information systems.

Continued Use of the CSF Methodology

FIAC now uses the CSF methodology in information resource planning, strategic planning, and individual goal setting as part of its performance appraisal and bonus systems. Use of this common methodology has narrowed the gap that previously existed between senior management and other staff members. All staff members have a better idea of the broad goals and activities of the corporation. Additionally, a common focus now exists throughout the organization and serves to align the goals of individuals and departments with the corporation's goals.

Broad conceptual planning and tactical concepts are more easily shared through a common information "map" of the corporation built through the CSF project. Staff members have redefined their jobs around the information processing nature of their tasks and are now more likely to document and disseminate "personal" information in order to increase corporate effectiveness at all levels. Senior managers now concentrate their attention on those areas identified as critical during the project. Concentration on critical areas rather than on less important operational matters has increased management's time horizon by freeing more time for planning, anticipating change, and formulating contingency responses.

Explaining the CSF Project's Results

It is extremely difficult in a case study such as this to identify factors that led to a project's suc-

cess or failure. The corporate context, the personalities involved, and environmental pressures cannot be controlled. Still, the behavioral dynamics that were observed during the CSF project strongly suggest three explanations for the project's success.

First, the CSF methodology is business-driven rather than technology-driven. This allowed a corporation which was not technically-oriented, nor very experienced with computer-based information systems, to commence an MIS planning effort without discussing technology at an early stage. Business strategies and tactics were translated into technological solutions only after consensus was reached regarding both the need to change and the direction for change.

Second, the business strategies and tactics that evolved from the CSF project followed a top-down design process. Once all staff members understood and accepted the organization's CSFs, it became possible to develop departmental and personal CSFs that were consistent with one another and with the organizational-wide CSFs. Once a common organizational map had been built, staff members readily accepted the information map from which the MIS plan was developed.

Third, and most important, the intuitively-appealing nature of the CSF concept prompted a FIAC senior manager to "buy-in" to the project at a very early stage. Without this individual championing of the project, it is unlikely that it would have been as successful. Not only did the senior manager's involvement testify to top managements' support of the project, but his enthusiasm overcame any reluctance on the part of other senior managers to involve themselves in, and otherwise support the project.

While we believe that these planning behaviors were induced through our application of the CSF methodology, similar behaviors might have been induced through the use of other MIS planning methodologies. *The key is not which planning methodology is used but rather the planning behaviors that result.*

It also seems appropriate to mention one problem that arose throughout the project. While the CSF methodology was well-received by FIAC staff members, only the firm's senior managers found the methodology useful in defining their individual reporting needs. A plausible explanation for this is the conceptual nature of CSFs. Lower level managers seemed to have considerable difficulty relating to the broad set of corporate CSFs and defining concrete information measures to represent their individual CSFs. However, the ability of these staff members to use the CSF methodology does seem to be improving over time.

Guidelines for Use in Other Organizations

In some ways FIAC provided a unique opportunity to use the CSF methodology for MIS planning. The changing environment and evolving corporate culture responded well to a method which linked MIS planning with strategic corporate planning. The following guidelines gleaned from this case experience are offered to other organizations considering using the CSF methodology for MIS planning:

1. CSFs are very flexible and may entice some users to be too casual in their application. Casual application may provide false results. CSFs should be used with the precision of a more formal method.
2. The individual managing a CSF study should have a thorough understanding of the organization's business. MIS and the executive suite cannot speak the same language unless they both understand their common business endeavors.
3. It is very helpful to have a member of senior management champion the CSF project. A senior manager can motivate others in the corporation to be more receptive to the project in its early stages.
4. Education of staff members on the CSF method before the actual interview is helpful. A basic understanding of the concept and time to think before the first interview will make those interviews more productive.
5. CSFs should not be linked explicitly to information needs, computer applications, or

anything else concrete during the initial set of interviews. Staff members can be more productive and creative in identifying CSFs if their attention is directed away from current information system realities.

6. We found it helpful to conduct interviews on several levels of the target group. Responses validated one another and led to a broader picture. We believe this led to a higher quality set of organizational CSFs.

Conclusion

The CSF methodology was a major force to corporate-wide MIS planning at FIAC. It provided a clear focus to structure the vital issues which were considered in MIS planning. The CSF methodology proved to be practical and intuitive. It provided a natural link between tactical and strategic planning. Use of the method provided assurance that critical information needs were explicitly addressed in the planning process by relating information resources to those areas of an FIAC's activity which must go well in order for the corporation to succeed. The CSF methodology developed a core of information technology proponents throughout the organization and enhanced the understanding of MIS by management. Finally, this organization-wide CSF study now provides an excellent vehicle for the new MIS Director to align his strategic plans with those of FIAC's top management.

References

[1] Boynton, A.C. and Zmud, R.W. "Critical Success Factors: A Case-Based Assessment," *Sloan Management Review,* Volume 25, Number 4, Summer 1984, pp. 17-27.

[2] Bullen, C.V. and Rockart, J.F. "A Primer on Critical Success Factors," Working Paper No. 69, Center for Information Systems Research, Massachusetts Institute of Technology, Cambridge, Massachusetts, June 1981.

[3] King, W.R. and Zmud, R.W. "Managing Information Systems: Policy Planning, Strategic Planning and Operational Planning," *Proceedings,* Second International Conference on Information Systems, K. Ross (ed.) December 1981, Cambridge, Massachussets, pp. 299-308.

[4] Rockart, J.F. "Chief Executives Define Their Own Data Needs," *Harvard Business Review,* Volume 57, Number 2, March-April 1979, pp. 81-93.

About the Authors

Michael Shank *is Executive Vice President of Financial Institutions Assurance Corporation. FIAC is a Raleigh, North Carolina, based private deposit insurer. Prior to joining FIAC, Mr. Shank was a loan administrator and managed the home office of the State Employees Credit Union. Mr. Shank attended the University of North Carolina at Chapel Hill where he graduated with a B.A. in Philosophy as a Morehead Scholar.*

Andrew C. Boynton *is enrolled in the Ph.D. program at The University of North Carolina at Chapel Hill where he is concentrating in information systems. Mr. Boynton holds the B.S. degree from Boston College and the M.B.A. degree from The University of North Carolina at Chapel Hill. His professional interests include technology diffusion within organizations, organization theory, and information systems management policy and strategic planning. Mr. Boynton is published in the* Sloan Management Review. *He has had experience as a project manager with Commercial Union Insurance Company where he helped organize the company's first information resource center.*

Robert Zmud *is currently Associate Professor, School of Business Administration, University of North Carolina, Chapel Hill, where he teaches and conducts research in the areas of information systems and technology management. His current research interests center around planning, managing, and diffusing organizational information resources. He holds a Ph.D. in Business Administration from the University of Arizona and a M.S. in Management from M.I.T.*