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ABSTRACT

This study focused on the roles, responsibilities, reporting relationships, and background of senior information managers at universities with Association of Research Libraries (ARL) member libraries, and on their relationships with library directors. Data for the study were collected from preliminary questionnaires distributed to 91 library directors, telephone interviews conducted with a smaller sample of the original respondents, and interviews with senior information managers. Study results include the following observations: (1) the position of senior information manager has been established in one-third of the universities surveyed; (2) the senior information manager tends to report at the same level in the administrative hierarchy as the library or computer center director; (3) senior information managers report a greater degree of responsibility and authority for library automation activities than library directors acknowledge that they have; (4) the most significant area of responsibility and authority of the senior information manager is in academic computer services; and (5) most of the institutions have at least one active university-wide committee for the formulation of policy about information technology and information systems. A 26-item bibliography is provided, and appendices include a listing of the institutions surveyed, an outline of study activities and timeframe, and the study questionnaire. (KM)

FINAL REPORT

To The Council On Library Resources

Washington, D.C.

CLR Grant no. 4019

# The Roles and Responsibilities of the Senior Information Manager at Selected American Universities

by

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## TABLE OF CONTENTS

## I. Introduction

Since World War II, the field of education, including higher education, has seen an increased use of technology not only in the teaching-learning process but also in administrative and support functions. Media centers were established in the fifties and sixties to handle films, video-tapes, television projection and production, and other needs of classroom instructors. Some of these services eventually grew into sizable operations, sometimes under the administrative wing of the library director, sometimes under a separate director and at times, managed through a decentralized academic/departmental structure.

During the nineteen-sixties technological developments in computing emerged as part of the fabric of academic communities. More recently, the eighties saw the advent of yet more technology on campuses such as microcomputers, optic fibers and integrated communications - the "high technology" that handles voice-data-video storage and transmission. At the same time, these once separate technologies became increasingly intertwined in regular operations. This convergence of computing, information and voice-data-video communication into a single planning effort brought a new kind of position into existence - generally called senior information manager or chief information officer or sometimes pejoratively - "the information czar."

The appearance of these new positions into academic organi-

zations has been rapid. According to the Chronicle of Higher Education, there were fewer than twenty such positions in 1984 but over a hundred were predicted within a couple of years (Turner, May, 1984, p. 1). Fleit (1986) reported late in 1985 that she had identified over a hundred institutions which had established such positions. Their responsibilities are very broad and their roles are often ambiguous.

The purpose of this study was to determine which research universities in the United States with research libraries (i.e. ARL libraries) have established a senior information manager position. Specific objectives of the study were to determine the Senior Information Manager's responsibilities, their role in decision-making, reporting relationships and communication with the institution's library director, and to determine the qualifications and background of incumbents.

## II. Literature Review

A framework for studying the senior information manager position was developed by examining the literature in higher education, computer and library science as well as in management and the social sciences. This approach to the literature was taken because of a perceived lack of research in the area.

A commonly voiced opinion in much of the literature of higher education (and in other disciplines) was that future uses of technology in higher education would entail revolutionary changes. This prediction was strongly asserted by the Carnegie Commission (1972, p. 1) and Ashby (1974, p. vii) in the early

seventies. Such predictions continued through to the present (Keller, 1983, p. 19 and Tucker, 1984, p. 2).

A recent study by Gilbert and Green (1986) presented evidence of the dramatic "tech revolution" in higher education. They found that technology was changing the decision-making locus about technology and was placing it in the hands of "politically sensitive 'czars' who combine the ability to manage implementation and academic politics with technological skills." The Gilbert and Green study was one of a handful which were found to be relevant to this project.

While research reports are few, the literature is replete with debate about the convergence of traditional and new information, computing and telecommunications services. Often, in this debate, librarians have expressed concern about the need to maintain their central role in providing information services to the university community (Guskin, Stoffle & Baruth, 1984; Segal & Tyson, 1985). In fact, a recent survey by Flower (1986) which looked at the impact of libraries in the formation of telecommunication policy, revealed that libraries were not instrumental in shaping telecommunications policy on their campuses.

Nevertheless, research librarians, along with other educators and technological leaders, have acknowledged the need to bring change to the organizational structure as a result of technological growth. This notion was widely accepted by educators and technological leaders ( McCredie, 1984; Neff, 1985).

Synnott and Gruber (1981) were probably the first to

describe the need for and nature of the Senior Information Manager's position and called for it to report to the top most position in the organization. Emery (1984) discussed the probability that those historically separate organizational units (computing, libraries, voice/data/ video communications and printing would be merged administratively under one high level executive (p. 19). Penrod (1985) stated that "a policy officer at the senior administrative level was needed to coordinate the implementation and use of information technologies in today's colleges and universities" (p.3).

Roles and responsibilities and reporting relationships for such a high level information manager position appear on the surface to be varied. Advertisement appearing in the first quarter of 1986 in the Chronicle of Higher seemed to point to the Senior Information Manager position as being responsible for all information technologies including administrative computing, academic computing, telecommunications and sometimes, libraries. In many instances, the advertisements indicated a direct reporting relationship to the Presidential level and carried the title of vice-president or equivalent.

Since the position of the senior information manager is currently emerging, these positions have become the subject of speculation about their roles and responsibilities. Fleit (1985) described a vision of the "information czar" as an enabler (p.6). Trauth (1984) defined the position's role as policy maker, coordinator, integrator and as managers of people and information as resources (p. 17).

However, there has been little actual research on the senior information manager. Helen Howard (1974) investigated eight North American universities which had integrated some or all of their information-handling functions at a senior level in an attempt to develop an organizational model for coping with rapid technological change at the institutional level. Of the eight cases studied, two institutions subsequently reverted to more traditional structures after the study was completed. In a later article reporting on the same study, Howard (1980) recommended a "communication" model as a way for universities to manage "future educational objectives, technological change, and service requirements" (p. 77). In effect, Howard recommended the establishment of a position very similar to that of today's Senior Information Manager.

While no ideal model has emerged for information management in universities, Howard's does appear to be seeing a rebirth at present. It is very close to the theoretical one constructed by Synott and Gruber (1980) for the corporate sector. Both assume a highly senior position that plays at least a central coordinating role in shaping policy for the entire organization.

A review of the literature indicated that there is no clear description of the roles and responsibilities of the Senior Information Manager positions which are being established in universities. Furthermore, except for speculation, there are no studies which show how these new positions relate in the organization to other related positions such as computer center and library directors. Therefore this study was done.

## III. Methodology

### 1. Sampling

During the summer of 1986 a brief questionnaire was sent to library directors in 91 institutions (see Appendix A) and a telephone survey was completed in a sub-set of that group to gather descriptive data on the senior information manager position.

In the first phase, preliminary information was collected from ARL (Association of Research Libraries) library directors at 91 institutions about the existence of an information manager position. This group was selected because of an anticipated high response rate. Secondly, library directors were thought to be helpful in getting their institution's Senior Information Manager agreement to participate in a telephone interview. Ninety out of ninety-one library directors replied to the mailed questionnaire.

Thirty out of the 90 respondents indicated their institutions had established a senior information manager position. From this group was selected a smaller sample comprised of twelve AAU institutions. Not all AAU institutions were included since some were excluded from further study because (1) the senior information manager and library director were same person, (2) senior information manager position was vacant, (3) respondents had not indicated consent to be interviewed or to facilitate an introduction to the senior information manager; or (4)

the position was not institution-specific but rather functioned for a state system. At the time that interviews were being conducted one individual was unable to participate, so the final sample was comprise of eleven institutions.

A telephone survey instrument, with structure questions, was developed based on a role study by Jenkins (1973) and pretested on individuals outside of the sample group. Several modifications were make to the questions used in the interview after the pretest.

2. Data Collection

In the mailed questionnaire (see Appendix C) library directors were asked to provide the names, position title, and telephone numbers of the senior information manager and the person to whom they and the senior information manager. Library directors were asked if they would be willing to participate in a telephone survey and to facilitate introductions to their institution's Senior Information Manager to enable an interview with them.

The telephone survey instrument provided for structure questions to elicit information about (1) responsibilities of the senior information managers, (2) their role in decision-making, (3) organizational relationships and communication and (5) qualifications and experience.

A Likert type scale was used to determine the senior information manager's level of responsibility ranging from "no responsibility" to "complete responsibility" in four areas of

information service operations: library automation/computer operations; academic computer services; administrative computer services; and telecommunications/wiring. Respondents were questioned about the level of their responsibility for budget, hardware/software purchases, formulation of policies, formulation of goals, and computer contracts.

A five point Likert type scale was also used to assess the senior information manager's degree of decision-making in the same four areas with the same activities. Possible responses ranged from "does not participate" to "makes final decision."

The third section of the questionnaire covered upward reporting relationships in the university and communication between library directors and senior information managers.

The final set of questions asked about previous employment experience and educational background information of the senior information managers.

All participants were sent definitions and a set of questions in advance of the appointed time for their telephone interview. Library directors were questioned only about the area of library automation, not about the senior information manager's activities in the other three areas (administrative computing, academic computing and telecommunications).

## IV. Data Analysis and Interpretation

The data are reported below in four parts. The first part describes the characteristics of the senior information manager

in American institutions. An examination of responsibilities is given in part two. Part three explores the senior information manager's role in decision-making. The final part details reporting relationships and communication patterns between senior information managers and library directors.

## 1. Background

### a. Title of Position

For the thirty positions reported by 90 respondents, the most common rank titles used were Vice President or Vice Chancellor and the next most prevalent being Associate Vice President/Vice Chancellor, as shown below.

| | |
|---|---|
| Vice President/Vice Chancellor | 10 |
| Associate Vice President/Vice Chancellor | 9 |
| Assistant Vice President/Vice Chancellor | 4 |
| Associate Provost | 4 |
| Vice Provost | 2 |
| Director or other | 2 |

The descriptive parts of position titles tended to include two descriptors to indicate roles or responsibilities - with computing and information systems being the most commonly used. "Computing" was always used in combination with another term.

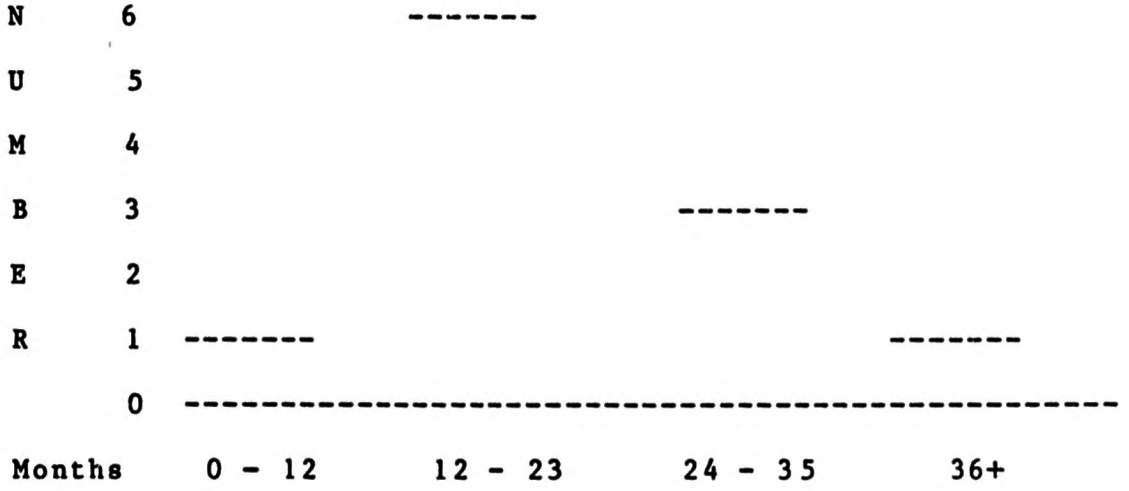
| | |
|---|---|
| Information system(s) | 13 |
| Computing | 13 |
| Information technology | 6 |
| Information services | 4 |

| | |
|---|---|
| Telecommunications | 3 |
| Information resources | 1 |
| Other | 2 |

b. Years in the Position

The eleven Senior Information Managers interviewed had held their present positions on the average for about two years. See Figure 1. This seems to confirm that the position is a new or emerging one since there is little variability in the length of tenure.

Figure 1. Distribution of Length of Time in Present Position for the Senior Information Manager




c. Previous Professional Experience

Since most held newly created positions, Senior Information Managers were questioned about their prior position to see what kinds of experience they brought to their current job.

There appeared to be strong commonality in prior positions held by senior information managers since eight of the eleven had held a position with responsibility for some aspect of computer services or operations. Two came from other areas of university administration.

Seven of the Senior Information Managers held their prior positions in other institutions. An average number of five years had been spent in the previous position.

When asked to compare their present set of responsibilities with those in the last position, five reported the two to be essentially the same, for said they were mostly different and two said they were partly the same.

d.Educational Qualifications

Most (ten) Senior Information Managers had attained the academic level of PhD and one respondent had an MBA degree. The areas of specialization in the highest degree earned varied widely -- Mathematics (2), Computer Science (2), Physics (2), Engineering (2), Business (1), Educational Administration (1) and Political Science (1) -- but clustered in the hard sciences.

In comparing previous experience with area of academic specialization, the study found that most Senior Information Managers came to their present position from a computer environment but their areas of academic specialization was more diverse.

## 2. Responsibilities of the Senior Information Manager

Four major areas of responsibility and eight related

activities were examined. These areas are reported both individually and collectively according to the responses of the Library Director followed by responses of the Senior Information Manager. Data in tables will be collapsed in percentages for a clearer picture of individual responses. This method was chosen because of small sample size. Items also will be reported in an ordered list based on highest mean scores.

Senior Information Managers had either minor or no responsibility for library automation as indicated by both groups. Table ) displays the percentages and ranked order of activities. The two groups differed about the Senior Information Manager's level of responsibilities in "formulation of policies" , "formulation of goals", "major computer equipment hardware/software purchases" and "contract negotiations for initial purchase of equipment." Though the mean scores indicate minor responsibility, an examination of percentages of individual responses showed a significant difference of opinion on the Senior Information Manager's level of responsibilities in the four activities.

Through the use of the t-test, Table 2 indicates a significant difference in agreement only among the respondents regarding "formulation of policies" and formulation of goals."

Library Directors may have reported a much lower level of responsibility for the four activities because of the length of time that they have been involved in the automation of their libraries. It is not unreasonable to assume that because libraries were among the first service areas on campuses to automate, library administrators have a firmly established hold

Table 1: LEVEL OF RESPONSIBILITY FOR LIBRARY AUTOMATION ACCORDING TO LIBRARY DIRECTORS (LD) AND SENIOR INFORMATION MANAGERS (SIM)

N=11

| Area of Responsibility | | Levels of Responsibility None | Minor | Shared | Major | Complete | Mean |
|---|---|---|---|---|---|---|---|
| 1 - Major computer hardware | LD | 9% | 55% | 36% | - | - | 2.27 |
| equipment/software purchases | SIM | 18% | 27% | 46% | 9% | - | 2.45 |
| 2 - Contract negotiation for | | | | | | | |
| initial purchase of hardware | LD | 27% | 46% | 18% | 9% | - | 2.09 |
| and software | SIM | 37% | 18% | 27% | 18% | - | 2.27 |
| 3 - Formulation of long range | LD | 46% | 46% | 9% | - | - | 1.63 |
| goals | SIM | 9% | 27% | 64% | - | - | 2.54 |
| 4 - Formulation of policies | LD | 45% | 55% | - | - | - | 1.54 |
| | SIM | 9% | 27% | 64% | - | - | 2.54 |
| 5 - University capital funds | LD | 55% | 36% | 9% | - | - | 1.54 |
| budget allocations | SIM | 46% | 27% | 18% | 9% | - | 1.90 |
| 6 - University annual operating | LD | 73% | 18% | 9% | - | - | 1.45 |
| budget allocations | SIM | 82% | 18% | - | - | - | 1.18 |
| 7 - Contract administration/ | LD | 73% | 18% | 9% | - | - | 1.45 |
| renewals with computer | SIM | 46% | 36% | 9% | 9% | - | 1.81 |
| vendors | | | | | | | |
| 8 - Budget allocations within | LD | 91% | 9% | | | | 1.09 |
| libraries for automation | SIM | 82% | 18% | | | | 1.18 |

Table 2: ANALYSIS OF DIFFERENCE IN RESPONSES OF LIBRARY DIRECTORS (LD) AND SENIOR INFORMATION MANAGERS (SIM) ABOUT LEVEL OF RESPONSIBILITY FOR LIBRARY AUTOMATION

N=11

| | Library Director | | SIM | | |
|---|---|---|---|---|---|
| Area of Responsibility | Mean | SD | Mean | SD | t |
| 1 - Major computer hardware and software purchases for library automation | 2.27 | 0.64 | 2.45 | 0.93 | -0.61 |
| 2 - Contract negotiations for initial purchase of computer hardware/software | 2.09 | 0.94 | 2.27 | 1.19 | -0.52 |
| 3 - Formulation of long range goals | 1.63 | 0.67 | 2.54 | 0.68 | -2.63* |
| 4 - Formulation of policies about library automation | 1.54 | 0.52 | 2.54 | 0.68 | -3.71** |
| 5 - University capital funds budget allocations | 1.54 | 0.68 | 1.90 | 1.04 | -1.49 |
| 6 - University annual operating budget allocations | 1.45 | 0.93 | 1.45 | 0.68 | 0.00 |
| 7 - Contract administration/ renewals with computer vendors | 1.45 | 0.93 | 1.81 | 0.98 | -0.94 |
| 8 - Budget allocations within libraries for automation vendors | 1.09 | 0.30 | 1.18 | 0.40 | -0.56 |



Note. Significant at *p<.05, two-tailed. **p, < .01, two-tailed.

on responsibility for library automation/computing. Most however, reported that they consult with the Senior Information Manager on an "as needed basis." The Library Directors interviewed had an average length of job tenure of ten years compared with the average of two for the Senior Information Manager. It was clear that a majority of Library Directors saw library automation and related activities to be only their domain.

In the area of academic computer service, Senior Information Managers reported either have major or complete responsibility for all activities with little variation on purchasing of equipment/software, formulation of policies and formulation of long range goals. See Table 3 for details. More variation among individual responses occurred in the mean responses to budgeting activities. Even here, their responsibilities leaned toward major involvement. The high level of responsibility in academic computer services may have been due to the Senior Information Manager's having line responsibility for computer center(s) operations. At 19 of 30 institutions the computer center director reported directly to the Senior Information Manager.

In Table 4 are presented the level of responsibility for administrative computer services. Data show that on the average, responsibilities range from being shared to being at a major level. For "major hardware equipment/software purchases" most have complete responsibility. As noted earlier, eight came to the Senior Information Manager position from a computer science background. This background and the need for technological expertise could account for the strong showing of a high level of

Table 3: LEVEL OF RESPONSIBILITY FOR ACADEMIC COMPUTER SERVICES BY SENIOR INFORMATION MANAGERS
N=11

N=11

| Area of Responsibility | Levels of Responsibility None | Minor | Shared | Major | Complete | Mean |
|---|---|---|---|---|---|---|
| 1 - Major computer hardware equipment/software purchases | - | 9% | - | 18% | 73% | 4.54 |
| 2 - Formulation of policies about academic computer services | - | - | 9% | 36% | 55% | 4.45 |
| 3 - Formulation of long range goals | - | - | 18% | 27% | 55% | 4.36 |
| 4 - Contract negotiation for initial purchase of hardware and software | 9% | 9% | 9% | 27% | 46% | 3.90 |
| 5 - Budget allocations within academic computer services | 27% | - | 9% | - | 64% | 3.72 |
| 6 - Contract administration/ renewals with computer vendors | 9% | 18% | 18% | 9% | 46% | 3.63 |
| 7 - University capital funds budget allocations vendors | - | 19% | 27% | 27% | 27% | 3.63 |
| 8 - University annual operating budget allocations | 9% | 27% | 9% | 18% | 37% | 3.45 |

Table 4: LEVEL OF RESPONSIBILITY FOR ADMINISTRATIVE COMPUTER SERVICES

| Area of Responsibility | Levels of Responsibility None | Minor | Shared | Major | Complete | Mean |
|---|---|---|---|---|---|---|
| 1 - Major computer hardware equipment/software purchases | 18% | 9% | 9% | 9% | 55% | 3.72 |
| 2 - Formulation of policies about administrative computer services | 9% | 9% | 9% | 46% | 27% | 3.72 |
| 3 - Formulation of long range goals | 9% | 9% | 18% | 37% | 27% | 3.63 |
| 4 - University capital funds budget allocations | 9% | 18% | 9% | 37% | 27% | 3.54 |
| 5 - University annual operating budget allocations | 9% | 37% | | 27% | 27% | 3.27 |
| 6 - Budget allocations within administrative computer services | 36% | 9% | 9% | | 46% | 3.09 |
| 7 - Contract negotiations for initial purchase of hardware and software | 27% | 10% | 9% | 27% | 27% | 3.18 |
| 8 - Contract administration/ renewals with computer vendors | 37% | 9% | 9% | 18% | 27% | 2.9 |

responsibility for computer hardware and software purchases.

In the area of telecommunications (Table 5) responsibilities are mostly shared, but the formulation of policies and goals leaning to be a major responsibility for Senior Information Managers.

An initial theory was that the Senior Information Managers would have a high level of responsibility for campus telecommunications. However, the greatest amount of responsibility appeared to be only in institutions where the Senior Information Manager had actual line responsibility for telecommunications.

It is interesting to note however, that the level of responsibility for "formulation of policies" "formulation of goals" and "major computer hardware equipment/software purchases" bordered on being a major responsibility. This finding is in keeping with the highest mean scored activities for academic and administrative computer services.

Consistently, the predominant responsibilities, whether in administrative computing, academic computing, library automation or telecommunications, were formulation of policies, formulation of goals and major computer hardware equipment/software purchases. Budget activities appeared to be a lesser responsibility. This may be due in part to budgeting being a process that requires participation and approval of many and diverse levels within a university.

Variability among individual responses may be attributable to the difference in job activities of line and staff positions. In this study thirteen of thirty positions were in "staff"

Table 5: LEVEL OF RESPONSIBILITY FOR TELECOMMUNICATIONS/WIRING

N=11

| Area of Responsibility | Levels of Responsibility None | Minor | Shared | Major | Complete | Mean |
|---|---|---|---|---|---|---|
| 1 - Formulation of policies about telecommunications | - | 18% | 9% | 37% | 36% | 3.90 |
| 2 - Formulation of long range goals | - | 18% | 27% | 18% | 37% | 3.72 |
| 3 - Major computer hardware equipment/software purchases | 9% | 9% | 27% | 9% | 46% | 3.72 |
| 4 - Budget allocations within unit responsible for telecommunications | 36% | - | 28% | - | 36% | 3.00 |
| 5 - University capital funds budget allocations | 18% | 18% | 18% | 37% | 9% | 3.00 |
| 6 - Contract negotiations for initial purchase of telecommunications equipment | 37% | - | 27% | 9% | 27% | 2.90 |
| 7 - University anual operating budget allocations | 18% | 28% | 9% | 18% | 18% | 2.90 |
| 8 - Contract administration/ renewals with vendors | 37% | 9% | 27% | - | 27% | 2.72 |

positions with the remaining seventeen having line positions. Although not supported clearly by this study, line positions tended to be more involved in operational activities while staff positions were involved more in planning and coordination.

3. Degree of Decision-making

Library Directors and Senior Information Managers responded similarly, according to Table 6, on the Senior Information Manager's role in decision-making in library automation. The Senior Information Manager's involvement fell between "no participation" and "provides advice" on all activities.

Analysis of individual responses showed that Library Directors underestimated the extent of the Senior Information Manager's involvement in "major computer hardware equipment/software purchases", "formulation of policies", "formulation of goals" and "university annual operating budget allocations." On the extent of participation budgeting activity, the estimation of involvement that the Senior Information Manager had differed substantially on the part of the Library Director and the Senior Information Manager.

While Table 7 shows that responses of the two groups were not statistically different when the t-test was applied to the data, this may have been a product of the small sample used in the study.

In looking at the individual responses about academic computer services (Table 8), it is clear that the majority of Senior Information Managers were the final decision makers in

Table 6: DEGREE OF DECISION MAKING IN LIBRARY AUTOMATION ACCORDING TO LIBRARY DIRECTORS (LD) AND SENIOR INFORMATION MANAGERS (SIM)

N=11

| Area of Responsibility | | Degree of Decision-making: Don't Participate | Provide Advice | Member of Committee | Decision on Approval | Final Decision | Mean |
|---|---|---|---|---|---|---|---|
| 1 - Major computer hardware | LD | 9% | 64% | 27% | - | - | 2.18 |
| equipment/software purchases | SIM | 9% | 37% | 36% | - | 18% | 2.81 |
| 2 - Contract negotiation for | | | | | | | |
| initial purchase of hardware | LD | 46% | 27% | 18% | 9% | - | 1.90 |
| and software | SIM | 37% | 27% | 18% | 18% | - | 2.18 |
| 3 - University capital funds | LD | 37% | 36% | 27% | - | - | 1.90 |
| budget allocations | SIM | 37% | 36% | 27% | - | - | 1.90 |
| 4 - Formulation of policies | LD | 36% | 64% | - | - | - | 1.63 |
| about library automation | SIM | 18% | 46% | 36% | - | - | 2.18 |
| 5 - Formulation of long range | LD | 55% | 36% | 9% | - | - | 1.54 |
| goals | SIM | 9% | 55% | 36% | - | - | 2.27 |
| 6 - University annual operating | LD | 64% | 27% | 9% | - | - | 1.45 |
| budget allocations | SIM | 27% | 64% | 9% | - | - | 1.81 |
| 7 - Contract administration/ | LD | 73% | 18% | 9% | - | - | 1.36 |
| renewals with computer | SIM | 55% | 27% | 9% | 9% | - | 1.72 |
| vendors | | | | | | | |
| 8 - Budget allocations within | LD | 73% | 27% | - | - | - | 1.27 |
| libraries for automation | SIM | 73% | 18% | 9% | - | - | 1.36 |

Table 7: ANALYSIS OF DIFFERENCE BETWEEN RESPONSES OF LIBRARY DIRECTORS AND SENIOR INFORMATION MANAGERS ON LEVELS OF DECISION MAKING FOR LIBRARY AUTOMATION

N=11

| | Library Director | | SIM | | |
|---|---|---|---|---|---|
| Area of Responsibility | Mean | SD | Mean | SD | t |
| 1 - Major computer hardware equipment/software purchases for library automation | 2.18 | 0.60 | 2.81 | 1.25 | -1.41 |
| 2 - Contract negotiations for initial purchase of computer hardware and services | 1.90 | 1.04 | 2.18 | 1.16 | -0.64 |
| 3 - University capital funds budget allocations | 1.90 | 0.83 | 1.90 | 0.83 | 0.00 |
| 4 - Formulation of policies about library automation | 1.63 | 0.50 | 2.18 | 0.75 | -1.94 |
| 5 - Formulation of long range goals | 1.54 | 0.68 | 2.27 | 0.64 | -2.19 |
| 6 - University annual operating budget allocations | 1.45 | 0.68 | 1.81 | 0.60 | -1.79 |
| 7 - Contract administration/ renewals with computer vendors | 1.90 | 1.04 | 2.18 | 1.16 | -0.64 |
| 8 - Budget allocations within libraries for automation vendors | 1.27 | 0.46 | 1.36 | 0.67 | -0.32 |

Note. Not significant at *p< .05. **p< .01

Table 8: DEGREE OF DECISION MAKING FOR ACADEMIC COMPUTING SERVICES

N=11

| Area of Responsibility | Degree of Decision-making | | | | | |
|---|---|---|---|---|---|---|
| | Don't Participate | Provide Advice | Member of Committee | Decision on Approval | Final Decision | Mean |
| 1 - Major computer hardware equipment/software purchases | | 9% | 9% | 27% | 55% | 4.27 |
| 2 - Formulation of policies about academic computer services | | 9% | 18% | 18% | 55% | 4.18 |
| 3 - Formulation of long range goals | | 9% | 18% | 27% | 46% | 4.09 |
| 4 - Budget allocations within academic computer services | 18% | 9% | | 9% | 64% | 3.90 |
| 5 - Contract negotiations for initial purchase of computer hardware and services | 18% | 9% | | 18% | 55% | 3.81 |
| 6 - Contract administration/ renewals with computer vendors | 27% | | 9% | | 64% | 3.72 |
| 7 - University annual operating funds budget | 9% | 18% | 18% | 37% | 18% | 3.36 |
| 8 - University capital funds budget allocations | | 27% | 27% | 37% | 9% | 3.27 |

this area. However, the mean score ranged from "member of decision making team" to "decision contingent on approval." Again, this may be caused by the differences between line and staff positions.

In administrative computer services (Table 9), the Senior Information Managers tended to participate in decision-making by committee, with a large proportion making decisions individually but "contingent on approval" or making "final decision."

In the area of telecommunications, while on the average decision -making was done by committee, the individual responses were more diverse. See Table 10.

Since advances in telecommunications are the most recent of the high tech developments to emerge on campuses, the predominance of a decentralized or committee-based decision model is understandable. The data in this study substantiated Flower's study which found that the decentralized decision-making model was prevalent in universities.

Senior Information Managers were queried further on their involvement in telecommunications to determine if there was a relationship between the implementation date for new telecommunications systems and the establishment of their positions. The mean year for the approximate implementation of telecommunications systems was 1983 while the mean year for all Senior Information Managers in their present positions was 1984. Though very close, the sample size was too small to show a clear relationship between these two variables as well as other variables.

Table 9: DEGREE OF DECISION MAKING FOR ADMINISTRATIVE COMPUTER SERVICES

N=11

| Area of Responsibility | Degree of Decision-making | | | | | |
|---|---|---|---|---|---|---|
| | Don't Participate | Provide Advice | Member of Committee | Decision on Approval | Final Decision | Mean |
| 1 - Major computer hardware equipment/software purchases | 9% | 18% | 18% | - | 55% | 3.72 |
| 2 - Formulation of policies about administrative computer services | 9% | 18% | 18% | - | 55% | 3.72 |
| 3 - Formulation of long range goals | - | 18% | 37% | 9% | 36% | 3.63 |
| 4 - Contract negotiations for initial purchase of hardware and services | 27% | 9% | - | 27% | 37% | 3.00 |
| 5 - University capital funds budget allocations | - | 28% | 18% | 27% | 27% | 3.54 |
| 6 - University annual operating funds budget allocations | - | 37% | 9% | 27% | 27% | 3.45 |
| 7 - Budget allocations within administrative computer services | 27% | 27% | - | - | 46% | 3.09 |
| 8 - Contract administration/ renewals with computer vendors | 37% | 9% | 9% | 9% | 36% | 3.00 |

Table 10: DEGREE OF DECISION MAKING FOR TELECOMMUNICATIONS/WIRING

N=11

| Area of Responsibility | Degree of Decision-making | | | | | |
|---|---|---|---|---|---|---|
| | Do not Participate | Provides Advice | Member of Committee | Decision on Approval | Final Decision | Mean |
| 1 - Major computer hardware and software purchases for telecommunications/wiring | 9% | 18% | 27% | - | 46% | 3.54 |
| 2 - Formulation of policies about telecommunications | 9% | 18% | 18% | 18% | 37% | 3.54 |
| 3 - Formulation of long range goals | 9% | 18% | 27% | 9% | 37% | 3.45 |
| 4 - Contract negotiations for initial purchase of telecommunications equipment | 37% | - | 9% | 27% | 27% | 3.09 |
| 5 - Budget allocations within for telecommunications | 27% | 18% | 18% | - | 37% | 3.00 |
| 6 - University capital funds budget allocations | 18% | 9% | 37% | 27% | 9% | 3.00 |
| 7 - University annual operating budget allocations | 18% | 18% | 27% | 28% | 9% | 2.90 |
| 8 - Contract administration/ renewals with telecommunication vendors | 37% | 9% | 27% | - | 27% | 2.72 |

Both Library Directors and Senior Information Managers were asked if their institution had a goal of more integration for information technologies and systems. All of the Library Directors responded " yes" and ten of the Senior Information Managers responded the same. However, responsibility for the integration of information technologies and systems drew mixed interpretations from Library Directors and Senior Information Managers. Eight of the Library Directors felt it was the responsibility of the Senior Information Manager to integrate technologies while all of the Senior Information Managers described this activity as their responsibility. The three dissenting Library Directors felt there were others with roles in the future integration of technology on their campus. Some believed that responsibility should be shared with the Library Director and the director of administrative computer services. One respondent said that "libraries work more closely with the administrative computer services position in areas of library automation and telecommunications because of necessary linkages." Thus, Senior Information Manager's role would be to improve interrelationships between academic computing and libraries for better accessibility to campus information systems. Another respondent commented that "libraries have a great role in the future [integration of technology] because information is our turf." Consensus was that Library Director and Senior Information Manager have a lot to offer, but that any forced mergers would probably create a win/lose situation.

The question about the future goals and responsibility of

the integration of technology would have yielded better information if it had been subdivided into separate questions about (1) integration of voice/data, (2) integration of computing for instruction, administration and research, and (3) integration of office systems. In general most institutions appeared to have a goal of more integration according to their Senior Information Managers.

## 4. Reporting Relationships/Communication

Library Directors and Senior Information Managers at seven of eleven institutions surveyed reported to the same position. Reporting position titles were President/Chancellor, Vice Chancellor/Provost, and Vice President for Academic Affairs. Of the remaining four, three Senior Information Managers reported to a higher level position than the Library Director. Table 11 shows the upward reporting lines and seems to indicate a tendency for the Library Director and the Senior Information Manager to report in different administrative branches of the university. The data in the sample did not support the supposition in the literature that the Senior Information Manager reports at a higher level than library directors; or even that they report to the President of the Institution. In the total group of thirty, eighteen institutions had the two positions reporting to the same person, while eight had the Senior Information Manager reporting to a higher level. Only one instance was found in which the Library Director reported to a level higher than the

one to which the Senior Information Manager reported.

Table 11

Upward Reporting Lines for Library Directors and Senior Information Managers

| Library Director | Position | SIM |
|---|---|---|
| 1 | President | 1 |
| 1 | * Chancellor | 1 |
| | Senior/Executive Vice President | 2 |
| | Senior Vice President for Administration/Finance | 1 |
| 1 | * Vice Chancellor | 1 |
| 6 | * * Provost | 3 |
| 1 | * Vice President for Academic Affairs & Provost | 2 |

Note

* Library Director and Senior Information Manager report to the same position at each institution.

* * Library Director and Senior Information Manager at three institutions report to the same position.

It is worth noting that out of the thirty Senior Information Manager positions identified, there were two who also held either

the title of Library Director or had functional responsibility for library operations.

According to the Senior Information Managers, seven institutions have a university-wide information technology policy committees on which both the Library Director and the Senior Information Manager serve. The role of the committees was mostly advisory and half of them made recommendations to the Senior Information Manager who served as an ex-officio member. Library Directors tended to be either voting or ex-officio members of such committees.

Since there tended not to be direct reporting relationships between the Library Director and the Senior Information Manager, the frequency of communication between the two was queried. At six institutions, both individuals indicated that they met/talked once a month. Four indicated more frequent (weekly) communication and in one instance, communication was reported to be quarterly. Although not asked, many respondents volunteered that they had good and relaxed relationships with each other.

## V. Summary

This descriptive study of the roles, responsibilities, reporting relationships and background of the Senior Information Manager was conducted to provide a snapshot of this position in ARL institutions and to examine the relationship between the Library Director and the Senior Information Manager. While further research is clearly warranted, this document provides a status report of a growing phenomenon in a small number of

universities.

The position of Senior Information Manager was found to have been established in one third of the research universities surveyed. At least seven others were in the process of considering the structure for managing their information systems. The Senior Information Manager tended to report at the same level - or in a minority of instances at a higher level in the administrative hierarchy than the library or computer center directors.

Evolution of this organizational pattern may, as many have predicted, cause some role conflict to appear. While only a small number of Library Directors and Senior Information Managers were included in this study, it was apparent that in the area of library automation, there were differences of opinion about the role and responsibilities of the Senior Information Manager. It is not difficult to envision, as technologies converge, that this difference might lead to some power jockeying and might be resolved by a convergence of management roles.

Senior Information Managers reported a greater degree of responsibility and authority for library automation activities than Library Directors acknowledged them to have. Statistically, the greatest difference in their answers was in the formulation of policies and goals. Library Directors characterized the role of the Senior Information Manager as consultative and advisory at the request of the Library Director. Senior Information Managers reported the same, except in the formulation of policies and goals where they felt that shared responsibility and autho-

rity with the library director and others.

The most significant area of responsibility and authority of the Senior Information Manager was in academic computer services where the Senior Information Manager has major responsibility. The majority of Senior Information Managers were also the primary decision makers about academic computer services. This may have been due to their having line responsibility in academic computer service operations.

On the other hand, administrative computer services and telecommunications were mostly shared functions. In the areas of major computer hardware/software purchases and the formulation of policies and goals, Senior Information Managers had major responsibility. Corresponding to their roles and responsibilities in administrative computer services, Senior Information Managers appeared to have shared decision-making authority with most having final decision-making power over major computer hardware/software purchases and a major role in the formulation of policies and goals for telecommunications services.

In general, the predominant characteristic of all the Senior Information Manager positions studied was their role in the formulation of policies, the formulation of goals, major computer hardware equipment/software purchases and computer contract negotiations. Budgeting activities were consistently lower on the list and tended to activities shared with other individuals in the institution.

Most of the institutions reported having at least one active university-wide committee in the formulation of policy about

information technology and information systems. Their roles tended to be advisory.

Since the role of the Senior Information Manager will continue to evolve as the positions mature and more emerge, the roles and responsibilities that now characterize the position may shift from their present planning/coordinating/consulting ones to more operational ones with line responsibility for campus information systems. If this happens, the organizational structures found in this study will also shift. Further study of the roles, responsibilities and reporting relationships is clearly warranted, not just on the Senior Information Manager, but also on other related roles such as library and computer center directors.

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# APPENDIX A

## Institutions Surveyed

| | | |
|---|---|---|
| Alabama | Arizona | Arizona State |
| Boston | Brigham Young | Brown |
| Calif., Berkeley | Calif., Davis | Calif., Irvine |
| Calif., Los Angeles | Calif., Riverside | Calif., San Diego |
| Calif., Santa Barbara | Case Western Reserve | Chicago |
| Cincinnati | Colorado | Colorado State |
| Columbia | Connecticut | Cornell |
| Dartmouth | Delaware | Duke |
| Emory | Florida | Florida State |
| Georgetown | Georgia | Georgia Inst. Tech. |
| Harvard | Hawaii | Houston |
| Howard | Illinois | Indiana |
| Iowa | Iowa State | Johns Hopkins |
| Kansas | Kentucky | Kent State |
| Louisiana State | Maryland | Massachussetts |
| Mass. Inst. of Tech. | Miami | Michigan |
| Michigan State | Minnesota | Missouri |
| Nebraska | New Mexico | New York |
| North Carolina | North Carolina State | Northwestern |
| Notre Dame | Ohio State | Oregon |
| Pennsylvania | Pennsylvania State | Pittsburgh |
| Princeton | Purdue | Rice |
| Rochester | Rutgers | South Carolina |
| Southern California | Southern Illinois | Stanford |
| SUNY Albany | SUNY Buffalo | SUNY Stony Brook |
| Syracuse | Temple | Tennessee |
| Texas | Texas A & M | Tulane |
| Utah | Vanderbilt | Virginia |
| Virginia Polytech. | Washington | Washington State |
| Washington, St. Louis | Wayne State | Wisconsin |
| Yale | | |

APPENDIX B

## Activities and Time Frame

Following are the project activities and the project schedule. A one-month extension was granted by the Council to accommodate delays in scheduling interviews during the summer months.

| | |
|---|---|
| April 1986 | Review literature |
| April 7-11 | Draft preliminary questionnaire for library directors |
| April 14-16 | Review of questionnaire by selected Pitt faculty |
| April 17-18 | Revise questionnaire |
| April 21-27 | Questionnaire printed |
| May 1 | Preliminary questionnaire mailed |
| May | Design structured interview instrument |
| May 19-June 5 | Follow-up on non respondents |
| | Review of interview instrument by selected Pitt faculty |
| June 1-5 | Pretest questionnaires |
| June 9-12 | Revise instruments |
| June 23-July 11 | Schedule telephone interviews |
| July 14-August 4 | Conduct telephone interviews |
| August 5-August 8 | Code survey results |
| August 11-15 | Computer analysis of data |
| August 18- September 12 | Analyze results |
| September 15-30 | Prepare final report |
| October 1 - 31, 1986 | Mail final report to Council |
| | and to survey respondents |
| November, 1986 | Present paper at EDUCOM Conference |

Appendix C

SENIOR INFORMATION MANAGER STUDY

Please respond to the following questions by circling YES or NO or writing you answer in the space provided. If you have any other comments, please use the other side of the questionnaire.

1. Does your institution have a senior information manager - as defined in my letter?

YES NO ---------> Skip to Q. 10

2. Please supply the following information about the position:
   NAME OF INCUMBENT:_____
   TITLE OF POSITION:_____
   ADDRESS:_____
   _____
   TELEPHONE: (_____)_____

3. What is the title of the position to which the senior information manager reports?

4. Are you, the library director, also the senior information manager?

NO YES---------> Skip to Q. 6

5. What is the title of the position to which the library director reports?

6. Does your institution have a computer center director?

YES NO----------> Skip to Q. 8

7. What is the title of the position to which the computer center director reports?

8. Are you willing to participate in a telephone interview in the second phase of this study?

   YES NO

9. Would you be willing to facilitate an introduction to the senior information manager in your institution for a similar interview?

   YES NO

10. Would you like a summary of the results of this questionnaire?

    YES NO

11. Name of respondent:_____