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ABSTRACT

In 1991, a national survey was conducted of institutional research directors at 150 two- and four-year colleges to investigate practitioner perceptions of institutional research effectiveness and productivity. Randomly selected directors of institutional research were mailed a one-page questionnaire, requesting information about institution size and type and the level, composition, and adequacy of institutional research staffing. Major findings, based on an 82% response rate, included the following: (1) four-year public institutions had the largest average staff size at nearly five full-time equivalent (FTE) positions, while four-year private institutions had the smallest average staff size (2.4 FTE) and community colleges fell in between (3 FTE); (2) the highest average ratings of adequacy were given by those directors with staffs of at least 5 FTE; (3) the most frequently cited obstacles to increasing the effectiveness of institutional research were insufficient staff, lack of appreciation of data by top administrators, and lack of an accessible, integrated database; (4) proposed means for increasing office productivity included adding more staff, better mainframe database/access, and better use of personal computer technology; and (5) techniques and tools which increased respondents' effectiveness included PC software, on-line access to mainframe files, and state-of-the-art microcomputer systems. Responses to open-ended questions regarding obstacles, increasing productivity, and techniques and tools are attached. (JMC)

Increasing Institutional Research Effectiveness and Productivity:

— Findings from a National Survey —

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Introduction

Institutional researchers have long struggled with the definition of their profession, or indeed, whether what they do may be considered a profession. From debates on the training and credentials necessary to work in institutional research, including many lengthy discourses via BITNET on how people come into the field, to well-attended conferences and workshops, institutional researchers are constantly striving to assess and improve the state of the profession. The 30th anniversary of the Association for Institutional Research in 1990 brought forth several useful guides to institutional research (Clagett and Huntington, MacDougall and Friedlander, Presley, Saupe) that collectively provide a foundation for understanding the concerns of and approaches to institutional research.

In spite of this growing literature about models for conducting institutional research, using technology to improve office efficiency, and related topics, it is still nearly impossible to engage in conversations with colleagues without hearing about how unique and difficult the field is, and how institutional researchers are overworked and unappreciated. Oddly enough, given our profession, our anecdotal evidence has been backed up by very little systematic collection of data on these issues. How widespread are these feelings of understaffing and alienation? What special obstacles do we face in this profession? How do our colleagues overcome these obstacles? While conceptual frameworks have been proposed for analyzing barriers to information use (for example, McLaughlin and McLaughlin, 1989), and common institutional research problems and solutions have been identified in humorous skits (accompanied by a serious handout—Meredith, 1989), no recent data on the breadth of these concerns about office effectiveness exist. A study of such questions should inform our understanding of institutional research as a profession as it enters the 1990s.

Methodology

To investigate practitioner perceptions of institutional research effectiveness and productivity, a national survey of institutional research directors was conducted. A systematic random sample of directors was drawn from the 1990-91 AIR membership directory. A total of 150 AIR members with a title of director of institutional research or the equivalent was mailed a one-page questionnaire during April 1991.

The questionnaire requested information about institution size and type, and level, composition, and adequacy of institutional research staffing. Three open-ended questions about office effectiveness, productivity, and innovations constituted the heart of the survey. A cover letter briefly described the project, requested the recipients' input, and assured confidentiality. Respondents were not identified in any way on the questionnaire.

Results and Discussion

By the time analysis commenced, 123 responses had been received, 39 from two-year institutions, 60 from four-year public, and 24 from four-year private institutions. Even considering the population, this 82 percent response rate was exceptional, and was considered sufficient for drawing some tentative conclusions about the state of institutional research in 1991.

Staffing Levels

Institutional research staffs ranged in size from 0.5 to 22.25 FTE. Table 1 presents research office staff size by type of institution. Four-year public institutions had the largest average staff size at nearly five FTE, while four-year private institutions had the smallest average staff size at 2.4 FTE. Community colleges fell in between, with an average of three FTE staff.

Total FTE Staffing in Institutional Research by Campus Type

Total IR FTE Staff	Two-Year Colleges (N = 39)	Four-Year Public (N = 60)	Four-Year Private (N = 24)
6 or more	5%	27%	4%
5 - 5.9	13%	17%	13%
4 - 4.9	8%	13%	4%
3 - 3.9	33%	17%	13%
2 - 2.9	18%	15%	8%
1 - 1.9	20%	12%	50%
0 - 0.9	3%	0%	8%
Mean FTE Staff	**3.1**	**4.8**	**2.4**

Table 1

Examining the staffing levels in terms of the campus size, defined by fall credit headcount, resulted in the intuitively appealing finding that larger institutions have larger institutional research staffs. These results are summarized in Table 2. The majority of the small institutions (less than 5,000 students) had less than 2 FTE staff, while the majority of the large institutions (over 15,000 students) had 5 or more FTE.

Total FTE Staffing in Institutional Research by Campus Size

Total IR FTE Staff	Fall Credit Headcount: Less than 5,000 (N = 24)	5,000 to 15,000 (N = 49)	More than 15,000 (N = 48)
6 or more	0%	4%	35%
5 - 5.9	4%	16%	19%
4 - 4.9	0%	10%	15%
3 - 3.9	13%	37%	8%
2 - 2.9	17%	16%	13%
1 - 1.9	54%	16%	10%
0 - 0.9	13%	0%	0%
Mean FTE Staff	**1.7**	**3.3**	**5.4**

Table 2

Respondents were asked to rate the adequacy of the staffing "relative to the job to be done". The rating ranged from 1 to 5, with 1 anchored as "inadequate" and 5 as "fully adequate." It was tempting to suppose that larger staff sizes would result in stronger evaluations of staff adequacy, and the results lent some support to that notion (Table 3). The highest average ratings of adequacy (3.4) were given by those directors with larger staffs (at least 5 FTE). However, only six of the 123 respondents (less than five percent) felt that their staffing was "fully adequate". The overall average rating of staff adequacy was only 2.9 for the sample.

Total FTE Staffing and Mean Rating of Staffing Adequacy
(Five-point Scale)

Total IR FTE Staff	Number	Percent	Mean Adequacy Rating
6 or more	19	15%	3.4
5 - 5.9	18	15%	3.4
4 - 4.9	12	10%	2.8
3 - 3.9	26	21%	3.2
2 - 2.9	18	15%	2.4
1 - 1.9	27	22%	2.2
0 - 0.9	3	2%	3.0
Total	**123**	**100%**	**2.9**

Table 3

The ratings of adequacy varied somewhat by campus type (Table 4) and campus size (Table 5). The lowest mean ratings were given by directors at four-year public institutions and by directors at small campuses.

Rating of Adequacy of IR Staffing by Campus Type

Rating	Two-Year Colleges (N = 39)	Four-Year Public (N = 60)	Four-Year Private (N = 24)
(Fully Adequate)			
5	5%	3%	8%
4	33%	28%	42%
3	18%	18%	17%
2	33%	37%	29%
1	10%	13%	4%
(Inadequate)			
Mean Rating	2.9	2.7	3.2

Table 4

Rating of Adequacy of IR Staffing by Campus Size

Rating	Fall Credit Headcount: Less than 5,000 (N = 24)	5,000 to 15,000 (N = 49)	More than 15,000 (N = 48)
(Fully Adequate)			
5	8%	6%	2%
4	17%	39%	33%
3	17%	12%	23%
2	46%	33%	31%
1	13%	10%	10%
(Inadequate)			
Mean Rating	2.6	3.0	2.9

Table 5

These ratings of staff adequacy suggested some general dissatisfaction on the part of institutional research directors with their ability to do their job, given current staffing levels. (It would of course be valuable to learn how other professionals view the adequacy of their office's staffing.) The remaining survey items shed some light on the contributions of staff size and staff competency to the ratings of adequacy.

Obstacles to Effectiveness

Content analyses were performed on each of the open-ended items, with responses grouped into about 10 categories for each item. The categories defined by two independent raters were very consistent with each other, suggesting fairly unambiguous themes.

The first open-ended item asked "What is the biggest obstacle to increasing the effectiveness of institutional research at your institution—its ability to influence policy or inform decisions?" The most frequent response given was that staff was insufficient (Table 6). This included comments on both the size and the expertise of the research staffs, although the size of the staff was by far the larger concern. This is consistent with several other problems cited, specifically, external reporting demands and lack of time. As one respondent stated it, "...staff just don't crawl out of the data pile often enough."

Obstacles to IR Effectiveness in Influencing Policy Decisions

1.	Insufficient staff	15%
2.	President not a data person	11%
3.	Lack of accessible, integrated database	10%
4.	Organizational structure, lack of access to decision makers	9%
5.	External reporting demands	7%
6.	Lack of time	7%
7.	IR not seen as part of leadership team	6%
8.	Lack of executive planning, issue identification	6%
9.	Campus politics	5%
10.	Insufficient lead time	4%

Table 6

The lack of appreciation of data and research by presidents and institutional leadership was also heavily lamented. One respondent put it succinctly: "The biggest problem is not having people at the top who really want the data and information institutional research can provide." Related to this were problems of organizational structure. Many of the respondents felt that they had little access to the decision makers, and were "left out of the loop." It is difficult to influence policy decisions if you aren't included in discussions of them and you don't see the issues coming until they're upon you.

Productivity Enhancement

When asked for suggestions for how their office could become more productive, a fifth of the respondents said to add more staff (Table 7). This was the most frequent suggestion. Related to this, 10 percent suggested skill training for office staff. The second and third most frequent responses dealt with computer tech-

nology, and included improving the quality of and access to mainframe database systems (cited by 16 percent) and further exploiting personal computer technology (11 percent).

Proposed Means for Increasing IR Office Productivity

1.	Add more staff	21%
2.	Better mainframe database/access	16%
3.	Better use of PC technology	11%
4.	Skill training for IR staff	10%
5.	Early identification of key issues by management	7%
6.	Automation/standardization of routine reports	6%
7.	Better IR office management procedures	6%
8.	Reduce state/federal reporting burden	6%
9.	Increase IR budget	4%
10.	Stop answering external surveys	3%

Table 7

It was somewhat surprising to find that only four percent of the respondents specifically mentioned increasing office budgets as a way to improve productivity, although more popular responses such as adding staff, better computer resources, and professional development and skill training all would entail more resources. Also, considering the complaints commonly heard among colleagues, a percentage higher than three percent might have been expected urging less responsiveness to external surveys (still an amusing finding, given the methodology of this study).

What Works in Institutional Research

The survey asked for specific kinds of "innovations, procedures, techniques or tools" that have helped institutional research professionals improve their effectiveness and productivity. The top five response categories dealt with various aspects of computer technology (Table 8).

What Works: Innovations, Procedures, Techniques, and Tools

1.	PC software	23%
2.	On-line access to mainframe files	18%
3.	State-of-the-art microcomputer systems	16%
4.	Customized databases/automated report generation	15%
5.	PC networks	11%
6.	Factbooks	10%
7.	Crosstraining all IR staff	7%
8.	Statewide IR groups/projects	6%
9.	Longitudinal cohort tracking files	5%
10.	Regular communication with top management	5%

Table 8

Almost a quarter of the respondents cited the usefulness of microcomputer software, either in general or specific packages. Microcomputer systems, as opposed to software specifically, were praised by 16 percent. Eleven percent identified PC networks as beneficial. Clearly, and not surprisingly, employing computer technology—particularly microcomputers—was viewed as the most valuable means for increasing the effectiveness of our profession.

Also consistent with responses to the previous questions, the cross-training of staff in all equipment and software used in the office plus regular communication with the president and top management were identified as of great value.

Other solutions cited included the use of factbooks, involvement in statewide institutional research groups and projects, and the use of longitudinal cohort tracking files. This latter suggestion probably reflects the increasing emphasis on student outcomes assessment.

Summary and Conclusions

This study attempted to elucidate some of the universal problems experienced by institutional research professionals and to identify some of the solutions practitioners have found to be effective in dealing with them.

The great majority of respondents identified serious obstacles to performing their jobs effectively. These problems were often things which were outside of the direct control of the professionals affected. Recurring themes included staffing and workload problems; access to and quality of information systems; access to decision makers and the perceived role of institutional research; and inadequate training of staff.

A few respondents reported good news. For example, in response to the item about obstacles to effectiveness, one person stated, "Are you assuming that IR offices are less than effective? This office is part of the President's staff and has direct impact on policy." However the overwhelming majority of comments, and the many requests for results of the survey, suggest a great concern for the profession by its members.

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OBSTACLES TO IR EFFECTIVENESS IN INFLUENCING POLICY DECISIONS

Four-Year Public Colleges and Universities

Requirement of coordination or production of annual or routine reports due to Board of Governors without human resources to do other activity of IR needed for planning and decision making.

Increase budgeted staff support.

Staff simply not large enough to take on major projects and limited access to decision-making group.

Lack of staff to complete all requests—information we provide usually is effective in influencing outcomes—just inundated with requests.

Low pay for analysts leads to turnover.

No staff!

Time/staff just don't crawl out of the data pile often enough.

The educational and technical skill level of the professional staff. All 3 professionals have only B.A. level training, have been employed in this office for over 20 years and thus learned institutional research "the old way." Have little to no experience in analysis, research methodology, or statistics.

Lack of professional staff coupled with rapidly increasing demands for information. Consequently we spend too much of our staff energy helping to put out institutional brushfires rather than working with the administration to plan ahead. (We do some of this, but not enough).

The (small) size of the staff relative to the current and pending workload.

Staff level.

The biggest problem is not having people at the top who really want the data and information institutional research can provide. The coming of our new chancellor and the impending retirement of a vice chancellor may change that situation.

Change in top administration—bringing new CEO's up-to-speed.

A President who does not see IR as a part of leadership/decision making circles.

President with a non-numerical background—nice guy, but doesn't understand numbers well—doesn't really want to.

A better centralized computing system providing faster access to campus data—by the time we get the data and do the analysis, the issue has changed. Therefore, we try to anticipate issues so that we can effectively impact policy.

Clean data.

Lack of easily accessible integrated data sets.

The organizational structure at the university, the vested interest of faculty in the planning evaluation process, and the extensive number of the external reports that must be filed at the state, regional accrediting agencies, and national level. In addition, the office is inundated with agencies and individuals compiling survey information for profit or professional advancement.

The biggest obstacle to our effectiveness is the lack of communication from senior administrators regarding current and upcoming policy issues.

Organizational location of office—within Administration Division. Sometimes viewed with suspicion by academic areas; they see us as "bean counters" with little to offer substantively other than numbers.

Geography—office is located in a building separate from senior administration. This separation—less informal and formal communications.

Getting data and reports to those who should have it. Too, educating those throughout the institution that data should be examined when formulating policy—instilling research utilization in those who lead and serve on committees.

Too many tasks and responsibilities of which IR is only one and happens to be the one most easily deferred. Our office also handles Federal and State Reporting, production of Factbook, administration of all standardized tests, and logistics of assessment program.

Being a one person office, I'm so busy putting out standard reports and programming that I have little time to even think about policy issues.

The major reporting requirements imposed primarily by our State Coordinating Board present the biggest obstacle because of the amount of resources required to produce, monitor, and counter the analyses produced from these required reports.

Micro-management by state agencies.

Non-IR activities that are given to office take time that could be used to better advantage to allow us to influence policies or inform decisions.

Having enough lead time to accomplish the task—all too often we are pressed to the wall to meet deadlines, consequently, there are times when optimal insight has not had sufficient time to develop.

More time needed to do all analyses that are needed.

Time—the time to do what we want, and enough high tech equipment to support those efforts.

Educating staff and faculty concerning office's capabilities (and limitations).

Ability to influence policy. IR is seen as a staff function, after the fact kind of operation.

The dispersion of data and power among many offices.

Inability of Chancellor to set priorities or accept complex explanations. Therefore staff must treat almost everything as top priority so that no time is available for thorough analysis of the most pressing problems.

Key leaders do not understand IR and the function it should perform. We constantly have to coach and explain information to several key leaders.

Administration is reluctant to do long-range or strategic planning. Data is used for operational decision-making only—to my knowledge.

Lack of executive leadership in identifying the key issues of management concern—they expect IR to answer most any ad hoc question.

Long-time administrators who prefer anecdotes to hard facts.

Ability to survive.

Institutional politics—climate of change, in particular.

Political nature of institutional management.

Politics.

This office has been able to influence policy—and that's because it has responsibilities that go way beyond traditional IR. Traditional IR offices CANNOT be seen simply as technical support offices.

Are you assuming that IR offices are less than effective? This office is part of the President's staff and has direct impact on policy.

Four-Year Private Colleges and Universities

Not having a full-time secretary.

Getting accurate data. No centralized database. Registrar, Financial Aid, etc. "own" their data, have to "beg" for information.

Lack of comprehensive computer system that allows institutional research personnel immediate access to registrar's data, admissions, etc.

Lack of a functional campus-wide database. We recently began implementing a new program, but it will be awhile before I have complete confidence in the data. You know—garbage in - garbage out.

Biggest problem is getting people to look at the data.

Greater knowledge of staff of decision-making process. Greater involvement in this process.

Decentralization. Essentially IR is done at each Faculty and tailored to their needs. My job is to coordinate, collect, maintain and analyze statistics on a university-wide basis. Good data is hard to collect—no incentives for Faculties.

Reporting line is not close enough to top level decision makers.

Routine responsibilities such as IPEDS Reporting and all surveys for external groups and annual Factbook leave little time for proactive research.

Currently performing a number of reporting functions that other offices should be doing.

Time spent on casual external surveys and guidebook surveys.

Getting administrators to properly utilize the function—most only want routine data but our office has to seek them out to see if they have additional needs or anticipate additional data needs. If they could look at the long range implications and needs and not wait until a crisis —that would help!

The potential is not yet fully recognized by the authorities.

Supervisor. Overall lack of vision for what IR should be doing and disagreement about what it is all about.

Presidents, VPs, Deans, etc. who prefer to micro-manage, thereby feeling no need for an "institutional" perspective other than their own.

The willingness of faculty and administrators to seek data and review the information prior to making decisions.

Lack of time to undertake many desirable projects.

Time and money.

For the 'newness' of the operation (14 months) I consider it quite effective. The officers and planning council do not hesitate to make requests and use information in policy related decisions.

The position of Director of Institutional Research was vacant for one year, then abolished for fiscal reasons. The former director was associated with an outgoing president.

Two years ago we changed Presidents, added a Provost (with higher ed. research experience) and a new Academic VP. We have had more influence on policy decisions (especially through the Provost) than any time in the past twenty years I have been involved in institutional research.

Two-Year Colleges

The lack of staffing—this is a one person IR office for a campus of 14,000 students. Lack of integrated computer systems on campus—i.e., not having direct access to student data files.

Top management has absolutely no concept how much time and effort are required to do proper research. Thus both staffing and project lead times are inadequate.

The College created the Institutional Research Position one year ago. Effective institutional research cannot be done with one person.

The lack of a full-time, permanent support staff person is the major obstacle. I must re-train a new student worker every year or so. This lack of stability also limits the kinds of tasks that can be delegated.

Lack of full-time position needed.

Lack of staffing to support the full IR agenda.

The following: lack of funds for research efforts; lack of adequate staff; helping people realize research takes time; funding cutbacks in state.

Due to staffing levels, too much time must be spent meeting reporting requirements without enough left for research.

Lack of adequate staff—increasingly, available staff must devote time to more extensive data demands.

Time, staffing, lack of data administration.

The fact that all of our upper level administrators (deans, V.P.s, and the president) are not "data people." The college does not take advantage of the resources of the IR office anywhere near the degree it could; mainly because upper level administrators don't realize the potential of the office and have troubie relating to data.

The lack of a relational database with dependence on the mainframe database. Present lack of fourth generation language causes dependence on inadequate programming staff. Various aspect of generic research activities are decentralized throughout the college.

Lack of programming on mainframe and connections of PCs to mainframe.

Mainframe (computer center director) reports to Business Manager; I report to the President. Priorities of Business Office do not always match our office.

Access to data that is carefully guarded by database administrators and not being involved with preliminary meetings before I am asked for information.

Insufficient resources to integrate data into information—it's all we can do to keep on top of ongoing data reporting requirements.

The increasing visibility of the office over the past five years has eliminated most of the obstacles. Because IR is often in the President's office, expertise is not easily shared among Academic and Student Services departments.

Well, for approximately one year, we have operated without a vice-president over the division—so access to cabinet level decision making was limited. Secondly, fierce interdivisional competition can impede effectiveness. (leads to lack of information, sharing of, openness, etc.)

Separation of Research from the computer function and the college's database.

The biggest obstacle in the effectiveness realm is the positioning of the office within the organizational structure—reports to the Vice President for Administration. As such, it has little influence on issues such as assessments of outcomes, and on research relating to the instructional process.

Need to change place of the office in the reporting structure and make it directly accountable to the President.

The office is not plugged into the upper administrative line—staff organization. As a result the office not utilized to its potential.

Inability to stay focused on major issues; too many special requests and external reports.

Having more people base their decisions on the information we generate.

It appears that the data are not being used for decision making. Lack of appreciation and understanding of IR data and reports.

IR is a second-class department without status or influence. My classification, as the director and sole employee in this department, is para-professional. I am not informed of outcomes (actions taken) of any research study.

Always lack of timeliness, inappropriate audience, hostility to research issue/policy, inappropriate reporting format (too lengthy, not enough summary and recommendations). We try to overcome these elements, but it is something you cannot relax about.

Under the previous CEO, IR was a high priority and used extensively for policy purposes. Our current CEO has little contact with this office and uses data more often to support already-drawn conclusions. I would say the attitude of the new CEO is the biggest obstacle to maintaining, let alone increasing, the effectiveness of institutional research.

Defensiveness from other offices—pressure to bury or soften "bad news". Refusal to facts in opposition to beliefs or wants.

Turfdom and paranoias (especially among mid-managers). Individuals and units protect their territory and are afraid of information-sharing and planning. Lack of long-range and total institution perspective among mid-managers and staff.

Time to prepare shorter, more effective reports—presentation graphics—data summaries targeted to specific decision issues. We're better at getting the studies done than at getting others to pay attention

to the results. Know-how and tools could be improved, too, but setting aside the necessary time (eg. doing fewer other things) is hardest.

Better translation from technical to lay language, more graphics. Educational level of users about statistical methods for decision-making.

Link planning to budget process. Budget cuts—if position became vacant, cannot fill due to freeze on funds. Loss of state board and data systems.

Identifying data needs for executive decision makers.

I would like to implement a student tracking system to assess retention rates in relation to student goals. I am requesting funds to do so in the next fiscal year.

Sometimes people go off and make decisions without referring to relevant data/info.

Providing in service to professionals regarding use of the information for decisionmaking and planning. We continue to work in providing information in the most clear, and concise manner possible.

PROPOSED MEANS FOR INCREASING IR OFFICE PRODUCTIVITY

Four-Year Public Colleges and Universities

Need for additional personnel and computer equipment.

Another full-time (maybe half-time) systems analyst. I have one now—another would help relieve many of the systems projects.

By replacing one of the support staff technicians with a more experienced professional with research/analytical skills.

Addition of professional level staff.

When we can retain experienced analysts the productivity will improve.

Given the lack of support personnel, professional staff get involved too much in the production aspects of reports and studies—activities which could be handled more appropriately by support personnel.

Increase budgeted staff support.

More help.

If I had more hours in the day? If I had a computer person/analyst who reported to me? If I were not getting older?

By adding one additional full-time person (now one full-time and two half-time people); having available a person well versed in desktop publishing.

Help!

A better centralized computing system providing easier and faster access to campus data. More familiarity with tools we have available—i.e. time to upgrade skills with computers and software packages available.

Better use of information sources—improve retrieval of automated information.

Oftentimes, projects are interrupted, priorities and deadlines changed to be able to respond very quickly to requests from the President and Exec Officers to assist in decision making and policy analysis. Difficult then to get back to other tasks. This problem probably cannot be solved given the environment we're operating in at the present time. One thing that could help is full implementation of our PC network and competent network support from Data Processing.

Changes to mainframe operating systems cause considerable changes to existing programs developed, maintained and executed by office programmers that impact the productivity of the office.

Perhaps by computerizing more reports, but I think I'm about maxed out.

Software tools. System for doing routine elements. Support for printing,preparation of presentations. Collaboration with others. Clean data.

Need to expand PC interfaces with mainframe databases for enhanced retrieval capabilities. By adding staff for this function I could then free other professional staff for more research and analysis.

A faster computer like a 386 or 486.

Drop some of the more clerical or routine data collection. Improve programming (computer) skills.

Newer technology—both our hardware and software are becoming outdated. Also, by actively doing fewer projects, the quality of our work would improve which I would trade over quantity.

We could train our staff to be more adept at using various technical tools and products.

Increased training, including cross-training. Improved team approach. Improved organization of flow and results of projects and activities.

Further training of all personnel to increase productivity.

If the staff had received training in IR functions beforehand, and availability of accurate data.

Identification of key issues with appropriate communication.

Better cooperating, understanding and planning at the executive level could result in significant improvement in productivity.

A more systematic prioritization of our work by those same key leaders.

By computerizing the mundane tasks; i.e., IPEDS and required state reports.

The office currently uses numerous models, standard institutional and state data bases, standard reports to accomplish the objectives of the office. With the advent of institutional effectiveness assessment, it will be necessary to add additional professional staff members to assist in meeting accreditation requirements. This will result in numerous publications that in all probability will not be used by faculty and academic administrators involved in the program enhancement process. Currently, the office uses standardized reports, standard retention studies, and standard state effectiveness assessment criteria to evaluate institutional effectiveness.

Automation of routine reporting. Increase the programming capability of existing staff.

Greater automation of regular activities and reports. Better ad hoc capabilities.

By anticipating the questions that will arise well in advance of when they arise. Keep abreast of national trends that dribble down to the state in a year or so.

We are changing the procedures from data editing and file freezing to analyzing and reporting on data.

More planning and organization.

Better scheduling.

Spend less time on governmental reporting—Federal, state, professional organizations.

Eliminate non-functional reporting to the state and federal levels.

Adequate space be made available. Improved budget for expense of operations.

Not amount—quality and usefulness are measures of productivity.

I wish I knew—mutation?

If workload could be reduced such that time permitted greater accuracy (and check-points), this would reduce necessity for 'proofing' and re-doing projects. If everyone could communicate effectively on all projects and everyone assumed full responsibility for accuracy.

By removing the telephones! In actuality, the IR office is probably operating about as productively as is possible given the nature of our responsibilities. Ad hoc requests are a constant headache, especially those "It's a simple request type."

University adopt TQM, and include IR. Reorganization, along team (incl. gross functional) concept. Develop a significantly higher quantity and quality of data. Stomp out excessive (destructive) politics.

Productivity could be improved if the functions of the office were more precisely defined and agreed upon.

Four-Year Private College and Universities

Having a full-time secretary.

More staff (professional and clerical).

If we added any more staff personnel it would be to handle student assessment which is an area we can't do much in because we don't have the manpower. Right now, there isn't much support from above to do student assessment on a large scale.

More staff.

More interfacing capability with the mainframe. At one time the mainframe system was all that was used. This proved time consuming and created a lot of problems—lack of access, space allocation on the mainframe and programming. Now we have a micro that has helped

the function be more independent but we still lack total access to mainframe data in certain areas.

Increase IR database generated reports (rather than manual spreadsheets).

Better data.

Improvements in the student and faculty databases would enable projects to be completed more swiftly (enhancements and better quality control are needed). Also, faster, more powerful PCs always help tremendously.

Access to more hardware and software to pull data from our university mainframe computer. As it is we are moving in that direction, several functions have been automated in the past few years in IPEDS. Some data correction.

More powerful and speedier computer and printer would help, as would additional personnel.

Our equipment procurement system is very slow. Right now I am waiting for the delivery of an Ethernet card for my Mac. We utilize both Macs and IBM machines in the office.

Better use of technology and tools.

Productivity could improve if mission and goals were clearer. These could then guide total needs. Now we do projects helter-skelter.

Reassignment to appropriate office, the reporting functions now being performed by this office.

Stop answering surveys. We have direct access to the President and all senior management which means the work we do get done is effective and is used.

Some functions, e.g. surveys, should be handled by other administrative units, then IR could spend more time in other areas, such as developing decision support systems and analyzing student persistence and performance.

National standardization of questionncires and survey requests.

It is adequate.

A private office would be nice!

I believe our office to be very productive as it is now supported.

The office location could be changed to allow for greater privacy—currently I'm in an open area with many interruptions.

Improve communication between Director and Vice-President.

Two-Year Colleges

My office is fine—inefficiency of other offices slows our work. Adding a computer technician, to load software and troubleshoot would help. By default, it's part of my job.

More training in analytical methods needs to be given support staff.

The primary way is with more help. A part-time data analyst is requested each year but, so far, no success. It's hard to convince budgeters that it takes time to prepare reports, graphics, etc. We did get better microcomputers and software this year which helps, but no time yet to learn to use them efficiently.

That is something we are constantly working on and I have no pat answers. Our strategy has been to automate as much as possible and make full use of student assistants.

Obviously by adding professional support staff. Many operational functions are minimized because of new strategic initiatives being assigned.

Increase staff size. Complete integration of computer systems so that my PC will be linked to student and staff databases and I can select and create my own data sets.

Computer programmer housed in my area.

Additional clerical/support staff (work study students) to assist in routine/mundane tasks of data collection, i.e. mailing of surveys.

Hire staff or provide student aide to stuff envelopes, enter data, etc.

A permanent, full-time support staff person would help. Our mainframe computer is very limited in the kinds of analyses that can be done easily off of the student record system. A mainframe with a relational database would help.

Increased reliance on research staff to program projects and decrease reliance of college DP area. Research competes for programmer time with all other college areas.

More staff and more money.

More personnel.

Better interface with mainframe to micros and relational databases with SQL on mainframe.

Better computer resources—PC and mainframe.

My secretary says, "How can you improve on perfection"? Seriously, we could benefit from better cooperation from the Data Center in programming the student database.

Conversion of the institution's database to a 4th generation computer language so that it can be accessed without extensive programming.

Our district has been 5 years in converting from one mainframe to another, and has hired 4 different DP consultants to "help" us (all disagreed, to some extent, on the perfect solution). Having a smoothly-functioning MIS environment, with a relational database, would go far toward improving our office's productivity.

Conversion of database to relational with downloading of selected data to PCs. Acquisition of SAS and SQL/QMF on the mainframe and PC.

Improve programming on mainframe and connections of PCs to mainframe.

Automation through computer technology has been the best asset in terms of improving productivity, however, we have just about maximized the benefit.

Integration of administrative data systems into one database. Reduction of some reporting requirements—assignment to other offices/functions. Working smarter and using technology better.

Better education of college about data. Better use of technology.

Reached optimum. If at all, a fast PC and software.

We are currently working in standardizing certain functions and reports within the office.

Utilize management techniques and computer technology.

Better organization (files, policies, procedures). Clear line of communication between Director, Assistant Director, and staff. All staff proficient in latest software.

More requests from decision makers for definitive reports rather than this office trying to guess what the data needs will be.

Office is physically split in two locations—combining staff will increase productivity. Productivity is always improved when the project is directed, initiated by the President and/or critical to policy decisions.

I have only been here one year—I believe a good knowledge of who does what and where to go to get answers is critical—once I learn this productivity will be greatly improved.

This is a tough question because of the phrase "with given resources". Due to budget restrictions, we've tightened and refined our operations to achieve the greatest productivity possible. All staff are now on the verge of serious burnout. To increase productivity further, we need to upgrade at least 2 microcomputer systems and add a part-time data entry support person. Both of these items require additional resources.

Support based funding.

We are considering reassigning some external reporting to Admissions/Registration and we have decided to stop doing non-required external reports, except in a few cases.

Adhering to established time lines. Eliminating nonessential ad hoc requests.

I think we're about as productive as we can get. We work pretty efficiently and everybody generally works hard. We could probably add some bells and whistles to our computer system—but no major needs.

Unfortunately, we are an "off-campus" unit (this is probably unique among your respondents). Productivity—as a result—is adversely affected. Communication suffers, time spent in travel—and overtime—visibility on campus is eroded.

More awareness of administrative decisions.

I doubt that there is much room for further improvement in productivity without increase in personnel. Technology has been used as much as is possible to improve productivity.

WHAT WORKS: INNOVATIONS,PROCEDURES,TECHNIQUES, AND TOOLS

Four-Year Public College and Universities

PC/Mainframe/Workshops/Looping.

Enhanced filing system of documents and greater use of computing and graphics presentations.

I've had to put as many things in computer programs as possible since I'm the only one here.

Nowell Network, Borland Products—Paradox 3.5 and QuattroPro 2.0 make a BIG difference.

Current versions of PC software. Upgrading PCs. Considering contracting with faculty to conduct analyses on specific, well-defined issues; we provide training to them, they supply an additional low-cost person to us.

Computer programs to do all calculations for some of the more complicated salary surveys—e.f., AAUP, OSU. Switched our 5-year trend data from computer printout format to 8½x11 paper—put them in a 3-ring binder—added graphs, charts, maps—now it's a high-demand item.

Certainly the use of the micro/mainframe computers, distributive databases have helped. Also, desktop publishing software has greatly eased the work of formatting reports and other forms of output.

We use SAS and QuattroPro (depending on the project) to analyze information.

On-line data retrieval from academic departments of census data enrollment files and faculty teaching load reports. On-line system includes audits, so auditing procedure greatly reduced in our office. Creating menu driven submission system so analysts can easily submit jobs to run student retention reports, enrollment projections. Eliminates need for programmers to submit these for them. Networking of our PCs and use of a file server to store analytical tables, reports, etc. so that latest version (as well as historical versions) of reports are readily accessible.

On-line with administrative and academic mainframes.

Heavily invested in automation, workstations, etc. Need more time to develop software tools.

Computer hardware and software are being upgraded and training in their use has begun. New projects are replacing old ones.

We are using microcomputers for everything. We have cut our mainframe bill from $17,000 to $4,000.

We have put a lot of resources into computer technology—386/33 machines, Postscript laser printers, LAN, use Windows 3.0 platform and latest Windows products for integration of spreadsheets, graphics and word processing. This technology has allowed us to produce analytic materials more quickly in easy-to-understand formats and reports.

Database technology. PC technology. Software developments for PCs. By utilizing these innovations the IR productivity has increased by a magnitude of 12-15 times in the past 8-10 years.

Within the last two years we have significantly upgraded the computer hardware and software used in the office. The use of RBase as a database manager has had a major impact on productivity. Achieving access to budget and student data normally kept at the system level also has improved the effectiveness of the office.

Our own computing environment. We have Macs on the desktop and a SUN Spacestation as a server.

Use of more personal computer database and spreadsheet routines. We have become extremely efficient in other assigned duties but continue to shortchange IR since it typically is less urgent.

We have been automating the production of key statistical reports (e.g., enrollment summary).

We have created our own PC and mainframe databases (in the absence of an overall MIS) in anticipation of requests.

Turnkey system for converting raw data to report format.

The State University System of Florida has numerous audited data files that are submitted to the State University System Board of Regents Office. The Board of Regents staff maintains historical files which can be used by State University System Board of Regents Office. The Board of Regents staff maintains historical files which can be used by State University institutions and the Board of Regents staff for assessing institutional effectiveness and institutional efficiency. Combining this resource with an outstanding student record system and reporting

stream designed to support the administrative functions of the university we are able to effectively produce information to support the decision-making process. Although this information will support a majority of the institutional effectiveness requirements, I anticipate we will have to use some of the automated techniques for collecting survey information on graduates.

Database files for incoming da ., systemwide research projects for which I provide analysis, heavy use of mainframe...

LAN, QMF, Access+, Easytrieve, internal quality assurance, cultivation of relationships with clients, consolidation of databases, archiving of output from other offices.

Developed an important linkage with campus computer center. Established effective data channels from key sources: academic, financial, facilities, student, etc. Employed PC computing on a wide scale.

Increased standardization of data elements and reports. A computer network in the office. Statewide institutional research meetings.

Factbook. Various databases. Improved coordination with other offices via IRP Advisory Committee.

We are completing a new set of university profiles that will be available in hard copy and also electronic form. Since our office staff will never be large enough to handle a centralized management and planning information system, we're developing a distributive approach to help units do their own program specific research. We have succeeded in seating the Director of Institutional Research and Planning on the Chancellor's Cabinet. This has given us an opportunity to provide better and more timely professional service to the Administration. It also has allowed the office to help coordinate and synthesize planning activities at the institutional level.

Generation of various factbooks and strategic planning manuals using customized databases.

Cross-training so when an individual is sick or on leave, someone else can fill in for them with some semblance of efficiency. On-line access to all major data files of university. Networking to allow moving files to other stations (PCs or printers).

Routinized IPEDS reporting—we succeeded. Train support staff to respond to routine data requests. Train support staff to update Factbook. Concentrate efforts of professional staff on non-routine work. Considering how understaffed my office is we are doing a heck of a good job. Role of secretary changed in our office because the two professional staff compose directly on the PC.

In October 1989, an Assessment Coordinator was employed. She is primarily responsible for collecting, compiling and disseminating assessment activities and results from these activities. She consistently provides information to appropriate department heads regarding national and local assessment instruments available and she conducts an annual inventory of current assessment activities and disseminates the results campus-wide.

Management planning team. Project strategy sessions. Weekly meetings with Senior Administration. Looking into 'TQM'—(total quality management) as a means of encouraging unit member participation/improvement in quality and efficiencies.

Refusing to answer most questionnaires. We are about to convene a technical work group to assess how we can improve planning future course offerings (kind and number) by earlier and better formatted delivery of enrollment data.

By correctly anticipating the trends here by keeping in step with national trends.

User training. Sharing projects and networks so I don't have to re-invent the wheel. Changing role of "secretary".

Pay attention to that which is important. Be pragmatic, balanced, and non-aligned. Protect confidentiality of research proponents.

Course-faculty evaluations, faculty salaries, workload studies, and facilities inventory have been integrated so studies can inter-relate across activities.

We are building an integrated decision support system.

Total Quality Management principles and tools.

Hopefully, project underway to require executives to recognize the growing demand for mandatory reporting and their choice of whether IR to do reporting or information with given resources—with "no decision" a default to reporting. Both missions require more resources.

Use of faculty within advisory group concept. Ties with the Higher Education PhD Program which directs graduate students to the office.

Reorganization of data processing support within the office. Output two comprehensive management information projects which contributed to office credibility.

Introduction of Office Communications Tracking System (Automated).

Eat lunch with the right people and play the political games! Tools and techniques are secondary to keeping on the trail of the hot issues.

Additional computational resources.

Four-Year Private Colleges and Universities

Better use of PC spreadsheet applications.

We finally computerized our operation so that all three of us now have access to all the software including PlanPerfect, WordPerfect, dBaseIII Plus, SPSS-X and access to all the administrative databases (student, financial, etc.)

We are doing more with Lotus 3.0 and our graphics and desktop publishing. Our next move is to get fully functional on a local area network in our office and later connect with other administrative offices.

Everyone has access to their own PC and the mainframe computer.

We switched from sole mainframe to micro-computing; however, since we are a small school with limited funding and personnel, we encounter problems getting programming done when we need to interface with the mainframe again.

Computerization of data in individual offices/departments.

Separate IR database (for cohort tracking and reports).

Have set up a data collection system which all student-related offices use.

Computerized databases and SPSS-X command files. In addition, standardized spreadsheets for production of the annual Factbook, etc.

Installation of LAN for operational use and for limited distribution of our DSS/EIS. Use of academic resources, i.e., use of students and faculty for projects.

We have our own LAN with fibre optics connection to mainframe for easy access to all campus computer files. We have a database with nearly twenty years worth of data and many computer programs that make production runs of key data every semester (both after 3rd week and at end of semester).

Admissions and Enrollment forecasting model. Instructional report. Factbook publication. Retention report. Faculty work load analysis. Department profiles.

I have produced two editions of a 5-year Databook in the 4 years I'm in this office. I've collected computerized databases to keep on file and have written a number of computer programs to produce the information required by state and federal reports.

Produced the college's first Factbook.

Institutional Factbook contains a lot of data that is frequently requested and this serves as a handy reference for routine requests.

Initiated the development of longitudinal census data on tape; obtaining office computer equipment and software; redesigned support staff roles.

But we are entering a new era of information sharing and faculty participation in Planning which places new emphasis on IR communication techniques, meaning more formal reports, presentations, and meetings and more demand for information and research than ever before.

Given the decentralized nature of Harvard, IR works fairly well. If, in the future, the University moved more toward a centralized governance, IR could be a great support in terms of University Planning. As it is, IR is housed in the Budget Office. I work closely with the Director of Budgets and the analysts.

The office has been operational for 14 months. Prior to setting up the shop I visited several IR offices that had been functioning for at least 5 years. This enabled me to design a model for our institution plus gain a greater understanding of the potential pitfalls, etc.

Over the last 3 years, the size of the professional staff has increased from 1 to 4.5 FTE. With the additional staff and associated expertise, the productivity has increased tremendously. Also, the computer resources have improved considerably during this time frame.

It is difficult to respond to this survey as the Director of Institutional Research has also been serving as the Acting Dean of Enrollment for the past two years. Consequently, little institutional research has been undertaken for the past 20 months. That should change when the Director of Institutional Research resumes that position on a full-time basis this summer.

Two-Year Colleges

Appropriate software (statistical). Chairing key committees on planning and evaluation.

We now use SAS and have several databases on PCs. This frees us from being totally dependent upon Data Processing.

Word processing, desktop publishing, enhanced spreadsheets and graphics. Inviting professional staff from other departments to work on specific projects.

Processing of survey results via scanning with analysis via SPSS-X has increased the number of surveys conducted and the population surveyed.

Scanable forms. Good software programs — SPSS/PC+, Harvard Graphics, etc.

Computer mapping, computerized demographic information, mainframe to disk output, canned computer programs, development of state wide data networks, student tracking systems.

Desktop publishing.

Mapping with Atlas Graphics, primarily for student demographics. Enrollment forecasting through SAS ETS. Diagnostic early warning system. PC based student tracking system.

PCs/word processing, SPSS/PC+, scanning equipment/software.

Moving to a multi-tasking environment on the PC and getting a laser printer.

We bought Apple Macintoshes which give us the ability to produce attractive, user-friendly reports.

I successfully lobbied for new microcomputer hardware and purchased software that improved effectiveness and productivity. The breadth of my research skills allowed projects to be done "in-house." I have produced new periodic reports that contain data that are widely used.

Downloading subfiles from the mainframe—the files can be manipulated so much easier on the PC to give more accurate reporting in about half the time of the previous manual processes.

Micro-relational database for SIS. On-line enrollment reports. Integration of college into systems.

Office LAN to share data and software. Availability of new student system with database file structure and improved report writing capability. Office control over running of standardized reports. Have given Research Analysts more authority to make decisions and to address issues themselves. More responsibility goes with it.

Several years ago it became clear to us that nobody was really using our factbook, mainly because it was too big and intimidating. So, we broke it up into roughly 5 or 6 component shorter reports which we distribute throughout the year (Fall Enrollment Report, Academic Year Enrollment Report, etc.) We've found that they are being used much more in this shorter format than was the factbook. In addition, we now issue a one-page enrollment summary two or three weeks after our official state enrollment reporting day (the 20th day of the semester). That way, administrators have access to official enrollment statistics long before the full reports come out (usually at the end of the semester). Of course, having a computer on everyone's desk has certainly enhanced productivity and efficiency.

Procedures manual, institutional factbooks, division-specific factbooks, report typology, log of phone data requests, report check-off list, excellent secretary, QPRO, Harvard Graphics, WordPerfect, Laser printers, forecasting package (@Risk, Smart Forecasts), monthly activity reports, weekly staff meetings.

Reorganized allocated staff positions and developed databook.

Developed Factbook to have ready access to various data. Conduct studies annually (alumni, employer, student satisfaction, etc.) to develop longitudinal database. Keeping same surveys also facilitates SPSS data entry.

Standard student satisfaction and program completer questionnaires that can be administered regularly and results compared across years. The secretary and a work-study do a great deal of the basic data entry, document formatting and layout, etc. Built a reputation over time for good research design and sampling, accuracy, and objectivity. Maintain good relationships with other administrators and with faculty members.

Delegate much of Research operations to clerical staff freeing up professional staff to design and interpret and plan.

Working with other colleges (i.e., environmental scanning consortium). Working with Oregon Employment Division in development of Oregon Automated Student Follow-Up system. Various computer applications.

Implementation of a student tracking system.

Originated a student flow model of institutional research. Designed and implemented a student performance database that enables us to do computerized transcript analysis for any cohort over 20 year period in our district. (and we download this information on request to our 3 colleges for their IR offices' use.) Designed and implemented a student follow-up study that has become a model statewide and nationally. Have designed and implemented an intersegmental and interinstitutional cooperative transfer study, to be published and presented at AIR in May '91. Includes analysis of the preparation, persistence and performance of a 2,000 transfer student cohort over 6 years to graduation at the universities.

Meeting with information/data "users" to determine and help define the information/data they could/would use.

We're very much integrated with many offices at the college and are actively represented on key committees—we attempt to provide excellent service and as a result, have been able to discourage most other offices from doing their own (amateur) surveys and studies--we do a monthly one-page "In the Abstract" that focuses on a research project/findings.

Memo or executive summary "telling the story" why the project was done, basic findings, complications. Decision-makers (formal and informal) are the key initiators or tools to use to make IR relevant (the more they see us as useful for small as well as big projects, the better). Explicitly seeing an IR function as political and service oriented. Good presentation software; all staff able to use all software.

An example of new procedures implemented...Survey research for client departments around campus was done directly by this office in the past. The logistics and reporting is slowly being shifted back to the client departments, with the IR office acting as a consultant (and only doing the analysis).

Strategic plan well organized and implemented.

We are just getting started.

Automation, keeping the reporting on schedule, encouragement of staff.

In the past, we have been able to use consultant (budget lines) for contracting external (private) research organizations to conduct marketing studies and educational needs assessments of considerable value. With budget stringencies, we may not be able to continue this (expansion of our effort). Finding well qualified student aides—(computer competent). And, ability to download mainframe student data files.

We're trying to use more direct routes to get research information and results in the hands of faculty and staff. We've found relying on the usual chain of communication (through department heads) doesn't work effectively. Therefore, we've started a series of Research Briefings (one page descriptions of results) which are mailed directly to all faculty and classified staff. This has generated more interest in our work and greater utilization of results.

Better policies for each office.

A data matrix model which presents survey and evaluation data from a variety of sources in one brief report. An environmental planning model (utilizing a team) tied to strategic planning.

Computerization, of course. Never turn down a request for information/always volunteer to provide information. Plan ahead—determine information that will be asked for and have it ready. Ask other departments for support staff help for coding, stuffing surveys etc.

Simplified reports by using more sophisticated graphics and by using non-technical language in reports. Education of users in modeling and statistical methods.