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Technological Innovation in Financial Aid Offices in Public Colleges and Universities

by
Rita F. Shelley

The author analyzes current computer capabilities and investigates technological innovation in the aid office. She bases her research on a national survey of financial aid directors.

Increasingly complex regulations and demanding paperwork requirements (Aid Officers, 1986; Brooks, 1986; Wilson, 1986; Wright, 1982), coupled with school pressure to compete for student enrollment (Garland, 1985; Morrell, 1986), place intense demands on the financial aid office. In these circumstances, technology, while not a panacea (Brown, 1981; Kroll, 1984; Technology, 1986), is critical to effectiveness (Carroll, 1975; Danziger & Kraemer, 1985; McCord, 1986). However, the financial aid area has been slower to computerize than other college support areas (St. John, 1985). Seemingly, colleges that wish to remain competitive and deliver useful programs will encourage innovative approaches. That is, they will adapt by solving information management problems with technological tools that are a departure from methods used in their particular setting. The factors that contribute to this type of innovation in financial aid offices are the focus of this study.

Since innovation is context specific (Brown, 1981; Rogers, 1983), what is innovative in one setting is standard procedure in another. Therefore, technological changes reported by aid directors varied in sophistication depending on the financial aid office's technological environment. Smaller and more manual institutions often computerized with microcomputers unless they hooked into a state network. These schools initiated or expanded word processing or used spreadsheets to meet their needs. One very small school in Washington used spreadsheets for budgets, eliminating manual work sheets. Schools with more advanced technology frequently developed or modified in-house programs. One respondent downloaded computer tapes from the Veteran's Administration to a database system, then merged this information with appropriate letters on the word processor. Some of the more automated schools used personal computers to supplement their mainframe environment for functions, like debt counseling, not handled as effectively on the mainframe. Future research might explore the value and cost effectiveness of such innovations. As public colleges were selected to limit the population, the characteristics of private colleges may vary from the data presented.

METHOD

Preparation of the survey

An opinion survey of a national sample of financial aid directors in public schools was developed to determine current computer capabilities and links between the tendency to innovate and factors in the environment. The final survey, which had been pretested, required that all respondents answer the first set of questions. Only those who had technological innovations between July 1, 1985 and June 30, 1987

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Institutional attitude toward innovation
This was measured by the question, “My institution strongly encourages innovation and change.”

Management style
The researcher asked two questions, “I always take staff advice into consideration when making a decision,” and “The activities of most people in the financial aid office are almost always determined by rules and job descriptions.”

RESULTS
Results were considered statistically significant with a .15 Pearson's coefficient of correlation.

Hypotheses
1. Larger institutions are more likely to report innovation in the past two years.
   A Pearson's $r$ between size and occurrence of innovation measured this hypothesis. Although the correlation is not strong ($r = .17$), this study confirms the relationship between institution size and innovation (Rogers, 1983).
2. Four year institutions are more likely to report innovation in the past two years.
   A Pearson's $r$ showed no statistical significance between 2- and 4- year schools and the occurrence of innovation.
3. Institutions with more advanced prevailing technological environments are more likely to report innovation in the past two years.
   1) Work stations per FTE staff. A Pearson's $r$ was performed between number of work stations per FTE staff and occurrence of innovation. Hardware was not a predictor of innovation as neither work stations per FTE staff, nor PC's per FTE staff, were related to innovation with any statistical significance.
   2) Computer abilities. A mean ability index was computed for each school. A Pearson's $r$ (.29) was then performed between the index and the occurrence of innovation.
   3) Tasks computerized. A mean score was developed for each school. A Pearson's $r$ (.26) was performed between the score and the occurrence of innovation.
   4) Office level of technological use. Again a Pearson's $r$ (.38) was done between this factor and the occurrence of innovation.
   Technological innovation was correlated in rank order with (a) level of technological use, (b) computer capabilities of the office, and (c) computerization of tasks.
4. Those respondents who most strongly indicate a positive attitude at their institution toward innovation are most likely to report innovation in the past two years.
   This was measured by performing a Pearson's $r$ on the response to the statement, “My institution strongly encourages innovation and change,” and the occurrence of innovation in the past two years ($r = .20$). Encouragement of innovation rated before size in predicting innovation. In another section of the survey, aid administrators rated encouragement most frequently as the reason innovation occurs. Institutional encouragement, then, is a critical factor in innovation. These results confirm the works of other researchers (Kraemer and King, 1986; Dimock, 1986; Freedman, 1987).
5. Those who report the most participation and flexibility in management style are most likely to report innovation in the past two years.
   A Pearson's $r$ between innovation and response to, “I always take staff advice into consideration when making a decision,” and “The activities of most people in the financial aid office are almost always determined by rules and job descriptions” found no correlation with either question. A very high percentage, 91.8%, of respondents agreed they always consider staff advice. Perhaps respondents felt com-
Table 2

FREQUENCY DISTRIBUTION
TASKS COMPUTERIZED TO GREAT EXTENT

<table>
<thead>
<tr>
<th>Task</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Tracking</td>
<td>41.7</td>
</tr>
<tr>
<td>Missing Information</td>
<td>35.6</td>
</tr>
<tr>
<td>Verification</td>
<td>20.8</td>
</tr>
<tr>
<td>Budget Calculation</td>
<td>36.6</td>
</tr>
<tr>
<td>Need Analysis</td>
<td>42.4</td>
</tr>
<tr>
<td>Awarding/Packaging</td>
<td>32.5</td>
</tr>
<tr>
<td>Award Letter Notification</td>
<td>63.1</td>
</tr>
<tr>
<td>Fund Management</td>
<td>39.6</td>
</tr>
<tr>
<td>Disbursement</td>
<td>51</td>
</tr>
<tr>
<td>GSL Certification</td>
<td>13.1</td>
</tr>
<tr>
<td>Loan Collection</td>
<td>16.8</td>
</tr>
<tr>
<td>Report/Stat Analysis</td>
<td>30.6</td>
</tr>
<tr>
<td>Financial Aid Trans</td>
<td>15.3</td>
</tr>
<tr>
<td>Satisfact Progress</td>
<td>32.4</td>
</tr>
<tr>
<td>Fisap</td>
<td>38.3</td>
</tr>
<tr>
<td>State Awards</td>
<td>21.9</td>
</tr>
<tr>
<td>Pell Exchange w Ed</td>
<td>18.4</td>
</tr>
<tr>
<td>Staff Training</td>
<td>3.9</td>
</tr>
<tr>
<td>Publications</td>
<td>3.6</td>
</tr>
</tbody>
</table>

Frequency distributions in Table 2 reveal tasks computerized to a great extent are with greatest frequency (a) award letter notification (63.1%), (b) disbursement (51%), (c) need analysis (42.4%), and (d) document tracking (41.7%).
tion, budget calculation, awarding/packaging and state awards were *not-at-all computerized*. Although 84.2% of schools had financial aid systems, examination of the *tasks computerized not-at-all* in Table 3 indicates there are financial aid computer systems in operation which are not fully implemented or which still do not perform many of the tasks associated with financial aid administration.

**Responsibility for innovation**

Of those whose institutions were innovative, the following was true of the individuals primarily responsible for innovation: (a) 73.7% were members of the financial aid office staff during implementation, (b) 57.4% had previous background or training in technology, and (c) 39.7% felt that technological skills were a factor in hiring. The person primarily responsible for the innovation (a) received training during work hours in 63.7% of the cases, and (b) only 19.4% received institutional rewards for implementation (for example, salary increases, bonuses, or public recognition).

**Occurrence of innovation**

Sixty-six per cent of respondents said they introduced innovations into their information management systems between July 1, 1985, and June 30, 1987. The time period was specified so respondents would use a consistent time frame and focus on particulars. While directors described their innovations, the researcher neither categorized the projects statistically nor judged whether the projects were truly innovative. If the respondent said his or her office innovated, it was counted. However, innovators were asked to respond on a scale of 1 to 4, from *Not-at-all to Great extent*, to four follow-up questions: (a) 53.2% believed the new technology a change from past practices to a great extent; (b) 40.6% said either they or a staff member presented the innovation or trained others outside their institution; (c) 60.6% said the innovation was marketable. (Respondents may have included marketability of commercial software, making the affirmative response high); (d) over half said other offices implemented the same innovation after hearing about what their office did. The range and sophistication of projects varied, as expected, from very moderate use of technology to very advanced.

**Reasons for innovation**

Table 4 shows aid administrators' reasons for the occurrence of innovation. They checked the reasons listed on the survey and wrote in others:

1. “Prevailing institutional philosophy that encourages innovation” was the most frequent reason picked (42.9%) for why innovation occurs in the respondent's office. This finding coincides with the work of many observers of innovation (Kraemer and King, 1986; Dimock, 1986; Freedman, 1987), and with this study's findings.

2. Necessity was volunteered frequently in the *other* category as a reason for technological innovation:
   - Absolutely necessary to function. Rapid growth/no new staff.

3. Also frequently volunteered in the *other* category was personal or staff motivation:
   - The desire to go out and beg, borrow or steal any soft/hardware we can get and learn to use to improve the system.

4. Others noted how hard they had to fight to get what they needed:
   - Extensive lobbying efforts.
   - Tantrums of the Financial Aid Officer.

5. Others referred to their good relationship with the data center as helpful in innovating.
Table 5
FREQUENCY DISTRIBUTION
Respondents' Perception of Major Obstacles to Innovation

<table>
<thead>
<tr>
<th>Obstacle</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate Funding</td>
<td>73.0</td>
</tr>
<tr>
<td>Lack of Know Staff</td>
<td>33.8</td>
</tr>
<tr>
<td>Lack of Training</td>
<td>37.1</td>
</tr>
<tr>
<td>Lack of Time</td>
<td>60.0</td>
</tr>
<tr>
<td>Discourage Innovate</td>
<td>8.6</td>
</tr>
</tbody>
</table>

Table 6
FREQUENCY DISTRIBUTION

<table>
<thead>
<tr>
<th>Perception of Technological Utilization</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>23.7</td>
</tr>
<tr>
<td>Medium</td>
<td>29.0</td>
</tr>
<tr>
<td>High</td>
<td>30.4</td>
</tr>
<tr>
<td>Very High</td>
<td>16.9</td>
</tr>
</tbody>
</table>
Are some handled more effectively manually? Are there thresholds, relative to size of applicant pool, where manual processing may be more cost effective than greater computerization? Which variables should be considered in deciding areas likely to be the most cost effective targets for innovation?

6. Can priorities for computerization be developed for aid offices with differing technology, size of enrollment, complexity of programs and volume of aid administered?

SUMMARY

While many tasks are done manually, information technology in financial aid is changing rapidly. Sixty-six per cent of respondents in this national survey said their offices innovated in information management between July 1, 1985 and June 30, 1987. The majority of innovators believed the innovation had been a great change from former practices. Members of the aid office who had previous background in the technology were most frequently responsible for the innovation. Associated in rank order with innovation were: (a) level of aid office technological utilization, (b) computer capabilities, (c) tasks computerized, (d) institutional encouragement of innovation, and (e) institution size. Size was also closely tied to the first three factors.

Respondents selected philosophy that encourages innovation most frequently as the reason innovation occurs, with technologically knowledgeable personnel a close second. Funding was the most frequent obstacle to innovation and over half the respondents selected lack of time as a major obstacle.\(^1\)

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