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# **Library and Computing Merger: Clash of Titans or Golden Opportunity**

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**Abstract:** Many universities are merging knowledge organizations, primarily libraries and computing centers. Discussion typically includes the developing organizational structure, the impact of technology on the organization, and funding implications. One major issue facing these units is the merger of cultures that each brings to the new organization. This cultural merger can either be a clash of titans from which neither emerges intact, or it can be a golden opportunity to incorporate the best of each to produce a different organization with a new cultural value system. This paper describes the merger of a university library and campus computing organization with the best values of each.

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Many universities are merging knowledge organizations, primarily libraries and computing centers. Discussion typically includes the developing organizational structure, the impact of technology on the organization, and funding implications. One major issue facing these units is the merger of cultures that each brings to the new organization. This cultural merger can either be a clash of titans from which neither emerges intact, or it can be a golden opportunity to incorporate the best of each to produce a different organization with a new cultural value system. This paper describes the merger of a university library and campus computing organization, and how they are amalgamating their cultures to create an organization with the best values of each.

#### THE ENVIRONMENT

As Arthur P. Young noted in his introduction to the fall, 1994, issue of *CAUSE/EFFECT*, there is "...inexorable trend that is bringing libraries and information technologists into new and challenging forms of interaction." ' ' reasons for this convergence and/or collaboration are many and have been elaborated upon elsewhere.<sup>2 3 4 5</sup> This paper will not discuss the many articles that have been published elsewhere on the rationale for this developm

As more universities have opted for a closer relationship between libraries and computing organizations, much attention has been paid to the issues of organizational structure and control, funding sources and implications, and organizational benefits that can be derived from such a partnership and/or merger.<sup>6 7 8 9 10 11 12</sup> However, relatively few discussions have included any mention of the cultural values that each group brings to the partnership and how those cultural values can either derail the collaboration/merger or enhance it. This is somewhat odd since, in our experience, this question of professional cultural values is one that can totally derail a new merger/partnership if not handled properly. As Diane Cimbala put it in her 1987 article on the scholarly information center, "...The staffs of existing libraries and computing centers may well resist such a change...". Anyone who has ever been involved in an internal merger within an organization wherein the participants share similar academic backgrounds and values knows that, in the best case scenario, mergers are fraught with conflict and unresolved anger. When such a

merger takes place between two different organizations with different professional values, the merger is in part a major emphasis is not placed on a merger of the value systems of the two groups involved.

It might be argued that accentuating the differences between the two organizations is not well-placed. Some stated that, "...the main objective should now focus on exploiting points of convergence to advance campus information and technology agendas."<sup>4</sup> We would disagree about where the emphasis should be placed in the initial stages of merger. In her 1993 paper, "Creating A Virtual Information Organization: Collaborative Relationships Between Libraries and Computer Centers," Sheila Creth stated that "...the relationship between academic librarians and computer professionals has been one characterized by unease, caution, lack of knowledge and understanding, and occasionally outright mistrust."<sup>5</sup> This description of the relationship is accurate in more instances than probably most of us are willing to acknowledge. At a minimum, if there is a library and a computing organization on campus, and they have a good working relationship, merger of the two organizations leads to a sense of loss for both staffs. What is that loss? Loss of identity with a group who has similar values and experiences perhaps or loss of prestige, power, autonomy or authority.<sup>6</sup>

Are the values of librarians and computing professionals so at odds? What do librarians believe in? What are values they hold dear? The same questions must be asked of computing professionals.

### **THE VALUES OF LIBRARIANS**

For non-librarians, the answer to the question, "Why do people become librarians?" will be answered with, "Because they like to read." While it is true that most librarians like to read, as I hope all educated individuals do, the real answer to that question is that librarians believe in service. To librarians, libraries are not primarily information or knowledge centers, they are service centers. This is absolutely a core value. The most damning thing you can say about a librarian is that he/she is not service-oriented. Librarians who are poor service providers are typically shunted off to back shop operations which have lower status within the profession and, which, as several research studies show, enjoy lower pay. How this service is delivered to the user depends on the user's status (faculty vs. student), the type of academic library (general vs. specialized branch), the level of funding enjoyed, and the expectations of its clients. This has often been a source of conflict between librarians and faculty who see the library primarily as a storehouse of books and periodicals and who want the money spent on these things; and, librarians who see service as their primary business and books and periodicals as one method for delivering service.

A second value of librarianship is that librarians love to work in groups. Most decisions are group decisions, and the decisions are typically reached by consensus rather than by voting. Academic libraries are a perfect reflection of the academic environment in which they operate because they operate typically by committee. Note we say committee, not task force. These groups may be called teams; TQM has been a big hit in libraries since it emphasizes the development of a team ethic. It is very important that everyone in the group agree on the decision. After a decision is made, an individual who goes off and does his/her own thing will be heartily condemned. It is important to adhere to the group's rules. As Creth has put it, "...librarians...experience a process of acculturation which they develop a shared philosophy...they are more likely to act within the boundaries of accepted professional beliefs and behavior, being less likely to act independently."<sup>7</sup>

The ability to work well together and the desire to provide excellent service to its users has led to cooperation between libraries as institutions that is not typically found in other groups.<sup>8</sup> Librarians have recognized for a time that no one institution can hope to contain all the information that their clientele will need--so it developed interlibrary loan--and for a long time, that sharing of materials between libraries was without charge to the user. The desire to cooperate for the greater good led to the development of bibliographic utilities which were initially developed so libraries could share cataloging records, thus cataloging materials faster for their users at a cheaper unit cost. A library which refuses to cooperate with its peer institutions whether they are Ivy League, land-grant or small liberal arts colleges runs the risk of becoming a pariah in its peer group and being deliberately left out of advantageous developments.

Because they have a deeply imbedded value of service and group decision-making, libraries have a very long tradition of user advisory groups. This can be more clearly seen in public libraries where every public library system in the United States has a public library board, sometimes advisory, but often with legislative or regul authority. In academia, almost all college and university libraries have library advisory committees populated primarily by faculty, all of whom have a better idea for running the library than the librarians. And, they are seriously listened to! A university library director who ignores his/her library faculty committee does so at the peril of his/her position.

Another value that is strongly held in the profession of academic librarianship is the value of training users to become self-sufficient. Many librarians believe that the primary function of the academic reference desk is to train the user to use the tools of the library, rather than answering the question asked. This, of course, varies depending on the type of question (How many dimples on a golf ball? will usually elicit a direct answer), the status of the questioner (faculty resist being taught anything, especially when they already know how to use t library), and the amount of time to devote to the teaching/learning opportunity (a line of 7 people waiting for librarian is not conducive to a leisurely explanation of how to use the on-line catalog).

This emphasis has led to the development of bibliographic instruction, which is librarianship's attempt to introduce the library research process into a discipline-based course. For those of you who not librarians, bibliographic instruction is teaching students how to use the library's resources in a particular discipline, such history, while they are enrolled in a history course which requires library usage. Librarians also teach stand-al courses that concentrate solely on teaching good library research practices in a general context. However the instruction is delivered, the goal is to make the library self-sufficient for most library needs.

Another distinguishing characteristic of librarians is the tendency to be perfectionists. They are not only servi oriented; they want to deliver perfect service. A complaint from a user will often cause a flurry of self-examination and self-recrimination. For example, in our special collections area which has been rated world-in its area of specialization, a faculty member may complain that she did not find one book out of 25 she was seeking. The bibliographer will often spend quite some time investigating how we could have missed that one book and try to determine if this one instance is symptomatic of a larger service failure. Librarians will focus the glass half empty, rather than half full any day.

The good side of this perfectionist tendency is that librarianship as a profession has been using professionwide standards for over 100 years. The card catalog looks the same United States-wide because of a decision arour the early 1910s at the Library of Congress to institute a "unit" card. Almost every library in the country, with notable exceptions, followed suit, and thus, almost every library in the country had uniform card catalogs. Wl librarianship introduced computing into its processing and acquisition activities in the mid-1960s, it was total natural and in congruence with its professional values to embrace the standardization of electronic bibliograp records. This made possible the development of on-line systems and bibliographic utilities long before most mainstream computing had begun thinking about standards.

Now, of course, like all good things, librarianship has elevated having a standard to that of the false Golden C Some might argue, to good effect, that standards are impeding the fast delivery of information which is rapidl becoming an expectation of our client base.

A logical extension of the desire for standards (overlying its desire for perfection) is that developments in librarianship have typically involved a long, slow development path. The way in which librarians catalog information is governed by a standard--called the Anglo-American Cataloging Rules. When it was decided th these rules (familarly known as AACR) needed to be updated, the new rule formulations which was handled an oversight committee of the American Library Association, took years to be completed. When AACR2 can out, most librarians were stunned by the radical changes contained it

them; a few librarians were stunned by how conservative the change had been! This is a perfect example of perfectionism, needs for standardization, and a long, slow development path that is characteristic of librarians.

In reviewing the values of librarianship--orientation to service, group-oriented work, a high value and use of cooperation to reach goals, use of groups to advise development, training/teaching, perfectionism, and standardization--one might say that these are attributes of one particular group and that group is women. Librarianship is still, by and large, a profession of predominately females. This is not a point that is usually n in exploring the merging of libraries and computing organizations, but it must be faced if the merger of the tw organizations is to be successful. It is not politically correct to say so in the academic climate of today, but women (and, again, we realize that we are indulging in a generalization that will not hold true for all individ in the profession) bring a set values to a profession that help set the tone for the profession. This tone has led librarians to being considered extremely trust-worthy, but typically, low paid.

#### THE VALUES OF COMPUTING PROFESSIONALS

We now have established the value system of librarianship. What values are important to the university computing profession? Please note that we don't really have a "name" for the computing professional. We call professional staff of the library, librarians, but computing professionals don't really have a moniker. This is significant because it may signify that computing professionals have little in the way of central core educatic and experiential backgrounds.<sup>9</sup> They do not share common professional and academic experiences--don't go through a common molding experience that helps to develop a shared professional philosophy. Computing professionals may appear on the scene with a degree in computer science, but they are just as likely to have degree in telecommunications or engineering or business or physics or philosophy. The end result is that, as computing professionals, we prize individualism and the ability to act independently. While libraries, as we s earlier, tend to act within commonly understood boundaries, computing professionals are much more likely to prize entrepreneurship. If a computing professional disagrees with a currently held view, it just proves he/she visionary.

Since librarians value the ability to work in groups, its leaders tend to be individuals who can bring people together, or, as Isaiah 1:18 said, "Come now and let us reason together." Computing professionals tend to focus on the charismatic leader: strategic, decisive, visionary, entrepreneurial. One author likened the Chief Information Officer (which is the equivalent of the library director) as Rambo of the Information World.<sup>20</sup> It might even be safe to say that the Rambo CIO has more than an touch of ego in his/her decisions and strategies. Because CIO tend to be Rambo-like, they move on fairly frequently--once you get past the initial thrill and hype of constant "war," it's hard to build a long-term relationship with an institution unless the CIO segues to a more managerial model--something very hard to do. As a result, compared to librarianship, there are frequent changes of leader. Coupled with a lack of commonly held academic preparations and experiences, computing organizations tend to be highly volatile and dynamic. This tendency is, of course, exacerbated by the highly evolving nature of technology itself.

Another value of the computing professional is to be oriented to the machine and/or software and not to the end user who uses the box and software. Another way of saying this is to say that computing organizations are very technologically oriented.<sup>21</sup> We think it is fair to say that, while librarians place the emphasis on service to the user, computing professionals put the emphasis on service to the technology. This is understandable since technology is not easy to use (from the end-user perspective) and, as the drive to make it easier for the end-user accelerates, makes the technology even more complex for the computing professional.

Having said this, however, it is hard to imagine being asked in a library meeting, "Just how far do we have to go in helping the user?" We have been asked this question in a computing meeting, and the various responses from computing staff have been vigorously debated and questioned. It is partially, of course, a matter of resources--we really do not have an adequate resource base and the expectations of our clientele are rising. Nevertheless, it has been well-noted by the profession that "...computer people felt

they alone knew best what their clients needed and thus were very non-responsive to the community they should be serving."<sup>22</sup>

One of our computer technicians who follows up on calls to our Help Desk has expressed concern about the arrogance he sometimes sees on the part of the Help Desk staff toward users who call in with problems. Granted some of these problems are really dumb and the caller should exercise a little more responsibility in running their own technology (like making sure it's plugged in), but this is a problem shared by librarians at a reference desk. It denotes more what one author called the priesthood of computing.<sup>23</sup> Since the early days of computing, there has been a struggle in the profession between those who "...were..unalterably opposed to those revolutionaries who wanted to make programming so easy that anyone could do it." <sup>24</sup> This argument sounds strange today, but remnants of the debate linger on in the support often given to the end-user.

The view from the user perspective that computing organizations are typically non-helpful to end users is exacerbated by the fact that three computing staff studying the same problem will have three different solutions to the problem--which each will defend to his/her dying breath. A faculty member from physics recently told us when he has a computing problem he can't solve, he will ask the electrical engineers, the college computing technician, and our help desk and get three different answers. His plaintive question to us was, "...Who do I believe?" The religious wars of computing are virtually unknown in librarianship.

This conflict over the best methodology or technology to accomplish a goal is linked to another value of computing: the conflict over standardization. As one author put it, "...A primary difference is that libraries are struggling to incorporate the computer within their long tradition of consistency, while computer centers struggle to develop some consistency in a climate of constant change."<sup>25</sup> This is easily understood, of course, because the environment in which information technologists have worked has been, to say the least, volatile. This has made it very difficult for the computing profession to develop and maintain standards. In some instances, there has been very little understanding of the need for adherence to standards once the standard has been established. This is partially driven by the entrepreneurial behavior and creativity often exhibited by the computing professional.

Along with the slow development of standardization has been the desire to get developments out on the street quickly with a higher value being shown for speed of delivery and a lower value shown for quality of product. We have literally never received a software upgrade for our on-line catalog vendor without receiving shortly thereafter a patch tape and, usually, several patch tapes. Those of you who are in computing will not find this an extraordinary observation--this kind of thing drives librarians absolutely wild. Librarians as a group usually will deliver a service or product until it has been tested, retested, and verified once again. Here, the computing professional is probably closer to what the end user expects--today, in libraries and in computing organizations: the user wants it now, wants it yesterday, wants it before he/she thought of wanting it!

Computing organizations tend to be very aggressive. The experience that Sharon had the first time that she went to a computing meeting after the merger was eye-opening. The group began to argue fiercely about some issue, talking over one another, yelling out their ideas, and generally had a verbal fistfight. Finally, to get a word in edgewise, Sharon stood up and yelled, "Everybody shut up and listen, I want to say something." The interesting part of this story is that no one resented her for doing that, and, in fact, she gained a measure of credibility because she was willing to engage in the verbal fistfight.

The language that the two groups use to essentially describe the same event is reflective of their two cultures. Computing language tends to be aggressive and war-like. Librarians tend to use words which emphasize harmony and group processes. Examples include: computing uses "end-user,"; librarians use "patron." Computing says "execute routine and terminate processes;" libraries "lend and borrow." Computing "hacks a program;" librarians "search for information." Many more illustrations could be made.

The values of individualism, independence, decisiveness, entrepreneurial, aggression, and being oriented to technology are attributes, in general, of one group and that group is men. Just as librarianship is female-dominated, computing tends to be male-dominated. Again, we acknowledge that **there are women** who are highly independent, decisive, entrepreneurial, and aggressive, but we maintain that these attributes are generally considered to be, rightly or wrongly, masculine. So while libraries are typically passive-aggressive in the way they operate, it can be said that computing organizations tend to be very aggressive or macho in the way in which they operate.

### **MERGING THE TWO CULTURES**

It should go without saying, but we will say it anyway, that, in order for the two organizations to merge, they must first come to know one another and to appreciate the positive values that each brings to the organization. How do you go about doing this? We do not have the definitive answer, and, in point of fact, will probably never have the definitive answer as organizational development is always in a state of change. Nonetheless, we present the following thoughts.

First, name the problem. Four days after the Provost of the university announced the merger of computing and libraries, Sharon held a convocation of both staffs and lined out why she believed this was a positive development for both the library and for the computing organization. She also lined out the problems that she believed needed to be solved before a true merger of cultures could take place. She pointed out that it would not be easy--and would not be fast. Candor is often rare in higher education--it can be a great tool for building credibility because it is so often underutilized.

We both met with the computing staff and carefully defined our individual managerial styles and how we approached problem-solving and personnel management. It is crucial that the managers, whether it be the director or associate director or the department head, be self-reflective enough to know their own management styles and values and communicate them to the staff. The staff don't have to like or agree with them, but they do need to know what they are. Once we had laid out our values, the staff of both the library and computing tested us to see if we walked what we talked.

Next, you must find ways of bringing the staffs together in ways that are structured to be positive. Every librarian who has ever worked with a computing person can tell you how they promise and don't deliver, how it never works completely right, and how they never show up when they say they will. Every computing person can tell you how demanding librarians are, wanting to know every last little detail and how they insist on every "t" being crossed and every "I" being dotted. So, you have to structure opportunities for them to know one another outside the heat of the battle.

In the library, we have had a library-wide coffee hour on the last day of the month for some time. It is the only time we all actually get a chance to see one another and to visit about our lives and our work and award the Employee of the Month award to the selected individual. Each department takes a turn hosting the event--and bringing the food. Librarians love to cook and, typically, the food at these events is outstanding. The food got computing to come, because they love to eat. When their turn came to host the coffee hour, they were terrific because they knew they couldn't compete. We suggested that they play on their strong suit and provide the stereotypical food associated with computing. So, we had pizza and cokes. The library staff loved it! The computing staff felt accepted, especially when one of the computing staff members was selected as Employee of the Month in the first few months after the merger.

We also decided to upgrade the computing infrastructure of the Library which had been wired over a number of years using whatever standard was in place at the time (if indeed a standard existed at the time). We also decided to redesign the network topology of the library. We called upon the computing staff to carry out the work. They began with more than a touch of arrogance. As our resident networking guru told me, "This will be a piece of cake compared to other things we've done." Well, it wasn't a piece of cake. It was challenging and frustrating and required them to think hard about what we were trying to accomplish. In other words, as they began to directly support the library's daily computing activities, they

began to respect the complexity of the library's need to deliver a high volume of information over a network. . conversely, as the library's ability to do good work improved with the new wiring standard and the networking topology, the librarians began to appreciate the value that the computing staff could bring to the tasks before

The librarians brought their strong service orientation to the merger, and this has directly influenced the development of computing services. We have doubled the number of lines coming into the Help Desk, have increased hours that the calls are taken, and have set benchmarks for service provision. While initially skeptical after working some time on the Help Desk, most computing staff developed a better orientation to serving the user. For their part, librarians trained the individuals who staff the Help Desk in interview techniques and que negotiation. We don't wish to imply that this problem has been solved and that the new motto of computing is "Service R Us." This is far from the case. But, the question of service to the end user is being debated and discussed. At a minimum, the question of end-user services is now a topic of keen interest on their part, and they are coming to see that their success or failure as an organization rests upon our ability to meet the needs of our users.

Having said this, we believe that computing can influence librarians not to go into a tail spin every time they complain about service. You know the phrase, women who love too much--well, we have librarians who do it too much. If we truly believe in self-sufficiency for the user, we have to encourage that self-sufficiency.

Has there been any impact upon librarians from the merger? Yes, and the impact actually has been more problematical than it has been for the computing division. Before the merger, the library has its own computing staff--small in numbers but they were "ours." When the campus computing organization was merged with the library, we merged the library computing staff into the overall division. We think it would be fair to say that many librarians feel a sense of loss over this merger within the merger. It would also be fair to say that this sense of loss comes from a loss of control. Can we really trust those computing guys to support our needs?

The perfectionism of librarianship has caused many to have too high a standard for computing support. Coupled with almost classic passiveness in the face of technology has caused one of our computing staff to say that, "librarians sure are a whiny bunch." We would have to agree in this instance. Librarians must take more initiative in the face of new technology, because not only must we use it, we must teach it. We hope to inject some of the aggressiveness, entrepreneurialism, and decisiveness exhibited by computing into the library staff. Computing staff typically exhibit a high level of risk-taking--librarians could use a dose of that.

Having said all this, is it hopeless? Are there no similarities between the two groups that can be used as a foundation for building our new culture? Happy to say there are. One of the wonderful characteristics about the computing culture is their insistence on all users having open access to resources; librarians have been a bulwark in the print world against those who would restrict access to information. This is a value under assault in our society; it may indeed take us both working together to maintain open access to digital, print, and other forms in which information comes these days. We are both involved with information at a meta level; neither really concerned about the bit level or the transaction level. This calls for a different type of management skill than other groups who work with information. And, finally, we have subgroups within the larger group with similar interests and personality characteristics--computing has programmers and librarians have catalogers.

We hope we have shown what the values of librarians and computing professionals are and how they can complement and clash. The truth is we can dwell on our commonality, or we can emphasize our uniqueness. Today, and even more in the future, "...both computing centers and libraries will be faced with challenges which will tax the fiscal and human capacities of both."<sup>26</sup> We will prosper together, whether it is a merger or a collaborative effort, but we will certainly die separately.

1 Arthur P. Young, "Information Technology and Libraries: A Virtual Convergence," *CAUSE/EFFECT*, fall, 19 pp. 5-6, 12.

2 Richard P. West and Richard N. Katz, "Implementing the Vision: A Framework and Agenda for Investing in Academic Computing," *Educom Review*, winter, 1990, pp. 32-38.

3 "The Library and the Computing Center: Convergence or Coexistence?" *Online Libraries and Microcomputing*, April, 1991, pp. 1-4.

4 Patricia Battin, "The Electronic Library--A Vision for the Future," *EDUCOM Bulletin*, summer, 1984, pp. 12-34.

5 C. Lee Jones, "Academic Libraries and Computing: A Time of Change," *EDUCOM Bulletin*, spring, 1995, p. 12.

6 Richard L. Van Horn, "How Significant is Computing for Higher Education?" *EDUCOM Bulletin*, spring, 1995, pp. 6-8.

7 Raymond K. Neff, "Merging Libraries and Computer Centers: Manifest Destiny or Manifestly Deranged?: an Academic Services Perspective," *EDUCOM Bulletin*, winter, 1985, p. 8-12.

8 JOY R. Hughes, "Applying change and organizational theories in a library reorganization", *CAUSE/EFFECT*, winter, 1990, pp. 16-22.

9 Kay Flowers and Andrea Martin, "Enhancing User Services through Collaboration at Rice University," *CAUSE/EFFECT*, fall, 1994, pp. 19-25.

10

11 David C. Weber, "University Libraries and Campus Information Technology Organizations: Who is in Charge Here?" *Journal of Library Administration*, 9(1988), pp. 5-19.

12 Donald J. Waters, "'We Have a Computer': Administrative Issues in the Relations Between Libraries and Campus Computing Organizations," *Journal of Library Administration*, 13(1990), pp. 117-138.

13 Diana J. Cimbala, "The Scholarly Information Center: An Organizational Model," *College and Research Libraries*, September, 1987, p. 395.

14 Arthur P. Young, *op. cit.*, p. 6.

15 Sheila D. Creth, "Creating a Virtual Information Organization: Collaborative Relationships Between Libraries and Computer Centers," *Journal of Library Administration*, 19(1993), pp. 111-132.

16 Kristin McDonough, *Prior Consent: Not-So-Strange Bedfellows Plan Library/Computing Partnerships*. 1992. unpublished paper. (ERIC ED364225)

17 Creth, *Op. Cit.*, p. 120.

18 Pat Molhot, "Libraries and Campus Information: Redrawing the Boundaries," *Academic Computing*, February 1990, pp. 20-21, 42-43. 19 Creth, *Op. Cit.*, p. 120. 20 Carole A. Barone, "Planning and the Changing Role of the CIO in Higher Education," *Information Management Review*, summer, 1989, pp. 23-31. 21 Marilyn J. Martin, "Academic Libraries and Computing Centers: Opportunities for Leadership," *Library Administration and Management*, spring, 1992, p. 79. 22 James M. Rosser and James I. Penrod, "Computing and Libraries: A Partnership Past Due," *CAUSE/EFFECT*, summer, 1990, p.22. 23 Naomi S. Baron, "Priesthood and Pedagogy:

Examining Presuppositions," *EDUCOM Bulletin*, winter, 1985, pp. 13-16. 24 John Backus, "Programming in America in the 1950s--Some Personal Impressions," in *A History of Computing in the Twentieth Century*, edited by N. Metropolis, J. Howlett, and Gian Carlo Rota. New York: Academic Press, pp. 125-135. 25 Martin, *op. cit.*, p. 26. 26 Anne Woodworth, "Computing Centers and Libraries as Cohorts: Exploiting Mutual Strengths," *Journal of Library Administration*, 19(1988), p. 23.