
A principled approach to selecting an automated library system

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Abstract

Nothing can guarantee that an automated system selection process will be successful, but adherence to a set of common-sense principles can help in securing a successful outcome. The focus of the process has to be on the long term and must take account of the institutional context into which the system will fit. With the shift towards user empowerment, the involvement of users in the selection process is increasingly critical. The components of the selection process can be envisioned and combined in many different ways. The process used by the Purdue University Libraries serves to illustrate one way the process can play itself out.

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Introduction

Libraries have been selecting automated systems long enough now for a number of traditions to have developed around the process. Most of these traditions are helpful and appropriate, although Thompson (1985) has shown how every step in the standard selection process can go wrong. The nature of automated library systems is changing, however, as is their place in the overall structure of libraries. Also, libraries themselves continue to evolve to meet the needs of modern information seekers. This dual transformation puts a different spin on the system selection and implementation process than was seen as few as five years ago.

One reason the literature contains so much information about how to structure system selection is that the process must be attuned to the special needs and features of the individual library. In this article, I attempt to take a step back from the specifics of the process and look at some principles that can guide you through the creation of an appropriate process for your library. Too much focus on the specifics tends to cloud the wider context in which these processes must fit and confuses more than illuminates the process. Fixing the principles firmly in one's mind while developing a selection process can make the process stronger.

At the same time, some basic components to any selection process must be included in order to make an informed decision. The needs of your library will guide you in how to include the various components into your own selection process. Each library can structure a process that weaves the various components together in a distinctive pattern to achieve the desired result. Some libraries might join multiple components together to form one step in the process. Other libraries might create several different steps that collectively constitute one of the components. Again, it is best to take a look at the components generally, rather than copying another institution's process wholesale.

The Purdue University Libraries recently went through a system selection process, resulting in migration to a new system. The process used at Purdue was different than any we had seen elsewhere, although it shared many aspects of other processes described in the literature. The similarities and differences among various

processes can help throw into relief the basic elements of all well-structured processes. After a discussion of the principles and components of a system selection process, the Purdue process will be used to illustrate the application of these elements, as well as to add to the record a description of another successful process.

Principles for system selection

Following three simple principles throughout the selection and migration process can help assure a successful outcome:

- (1) Focus on the institutional context.
- (2) Choose long-term over short-term benefits.
- (3) Involve staff and users throughout the process.

Focus on the institutional context

Most libraries approach the selection of a new system as a process in itself. Once they have determined to purchase (or at least to investigate purchasing) a new system, the process takes on a life of its own. The group charged with the selection does its work and that work is completed when a new system is selected or implemented. Libraries are sometimes surprised to find that when the new system is in place, they experience organizational or structural change, brought about by the introduction of this new element into their midst (Crowe and Light, 1994).

I would argue that the system selection process should be a part of a larger, on-going process of organizational change that manifests itself in many ways throughout the library and often through the larger institution of which the library is a part. The transformation of the institution should serve as the backdrop and context in which all decisions regarding a new system are made. Focusing on the system selection process without taking into account the larger context might result in a functioning system, but is likely to result in a general failure of the system to meet the needs of the institution as a whole. With this approach, even the status quo tends to suffer, as the charge is only to select and implement a system, not to achieve some broader desired goal, and the new system may not support the status quo as well as the old.

The focus must be on the final outcome but it is essential to understand exactly what outcome is desired. The timely implementation of a

functioning system is, of course, one component of success. Current library automation systems, however, are like one vertebra in the backbone of a vibrant information delivery organism. Because of this, true success in selecting and implementing a library automation system is demonstrated by the complete integration of the new system into an organizational structure and environment prepared for and attuned to its particular features and approach. This has a great deal more to do with changing the organization than it does with bringing up the system.

Libraries' practices and policies are mostly developed to help patrons get the most information from the resources that were available. When the available resources change, as with first-time automation or migration to a new system, policies and practices should be reviewed to see if they continue to provide the best means of helping patrons. Also, such policies and practices are decided in terms of how much time, effort and resources are needed to follow them, i.e. their overall cost. When the underlying system or structure changes, the costs may change radically, even if the policies themselves remain the best way to help library users. An organization that is automating or changing systems must review time-honored practices in order to determine if they remain cost-effective. Schwarz (1985) points out how many such practices linger long after their usefulness is past. If practices or policies need to be changed, careful planning must go into developing the least painful process for a smooth transition to a new way of doing things. Some of these might change when the new system is implemented, but some might be more effectively adjusted either before or after the new system implementation, in order to lessen the stress on the staff.

Choose long-term over short-term benefits

Throughout the selection process, you should maintain focus on the long-term, rather than on the short-term. General wisdom concerning the expected life span of computer systems in general and library systems in particular says that the system should be replaced after four to seven years. However, in most cases, the ideal life cycle for systems is extended by budgetary or other concerns, often for years beyond the recommended time. In other words, you can expect to be using the new system you purchase

for quite a few years. All else being equal, it is desirable to choose the system that best meets the needs of your library now. It is clear, however, that it is more to your advantage to choose the system that seems most likely to continue to evolve and develop at a reasonable pace in the directions most suited for your library.

At the same time, it is unlikely that your library will continue to use the same system forever. The data in the system represents a much greater investment than the software through which you access it. It is tempting to minimize the pain of the normally chaotic and painful transition period by taking shortcuts and making compromises with your normal quality standards for cataloging, acquisitions, serials check-in or other processes. Such compromises are not at all in your best interests, even if they successfully reduce the stress of the system migration.

At many points in the process of system selection and migration, there seem to be no really good options available. There might be delays that force you to choose between using an inadequate system or postponing your implementation schedule. Perhaps you compare two or three finalist systems and discover that none of them does what you want. You may find yourself forced to choose between clunky and time-consuming manual processes and clunky and time-consuming automated processes. You may discover that some innovative and customer-focused service that you have recently initiated cannot be supported by a new system. It is hard to accept that some desirable process is impossible with the new system. The library has to give up a share of control over its own future and put it in the hands of the vendor (Schwarz, 1985). There are steps you can take to avoid some of the worst effects of these problems, but you cannot expect to miss them altogether.

When problems arise, it is essential to keep your focus on the long term. You are developing a long-term association with your vendor of choice, and your life will be easier if you can work with the vendor as a partner, rather than as an adversary (Matthews, 1995). Focus on solutions rather than penalties. In addition to considering the long term, you need to accept the realities of your situation and move from there. Once something has gone wrong, that becomes the new reality. You can't go back in time and make it not happen. If a system does not support a feature

you want, you can't make it appear by magic. You need to figure out where you can go from where you are and move in that direction. Railing about your miserable fate, or trading accusations with your vendor may make you feel better, but it will not solve your problem. When the dust settles, you'll still be in the same state you were in before you started. Better to bite your tongue and start looking for where to go next.

Involve staff and users throughout the process

In the early days of automation, systems were fairly uncomplicated, even when they were difficult to install or use. They generally handled a single function, and there was little, if any, interaction between disparate systems. One person could be responsible for the care and maintenance of a system and for any tuning or customization that might be required. As systems evolved, the various stand-alone systems that had been created were brought together in order to lessen the need for maintaining duplicate data, and to share more broadly the benefits of automation to a wider audience. This meant an increasing complexity in the systems and a corresponding increase in the difficulty of maintaining and customizing them. The systems available today span virtually the entire range of operation of a library, from technical services to circulation to reference to interlibrary loan. This has made the number of possible combinations of settings so large that no one person can understand and take care of them all.

The solution for handling this complexity has been to push the responsibility for some of the customization out to the user. To some extent, the look and feel of the system is controlled directly on the user's workstation. Much more than before, the end-user of the system is a full partner in the successful implementation of the system. To ignore this fact is to invite an unsuccessful outcome to the implementation process. The users themselves, particularly library staff members, must be fully included in the process from start to finish so that they will respond well to taking on their part of the responsibility for making the system operate properly. With the client/server systems now on the market, all staff members, and often library patrons, are partners to some degree in the automation process. They may have one or more clients installed on their

workstations, and they may be responsible for some customization of the system for their own use. Even some data files might be stored, at least temporarily, on users' workstations. Clearly, the users have an increased responsibility for caring for their part of the automated system.

Selection of a new generation system is a complex and tricky process, and is by no means guaranteed of success. Careful planning and coordination of the selection and migration process, as well as a constant focus on communication among all parties, can help to insure a happy outcome. But the new generation library systems are very different in feel and focus. Migration to one of them is more than just a move to a new system; it is a move to a new culture. Much more than in the past, all library staff must be involved in the process of selection and migration. If they are not, the selection and migration process may seem to go smoothly, but it will take inordinately long for the staff to settle in and feel comfortable with the new system.

"All library staff" does not refer only to professional librarians. It refers also to the support staff, whose knowledge of day-to-day processes often far exceeds that of their professional supervisors. Involving staff on the basis of talent rather than position can be a political minefield (Thompson, 1985), but is just part of the transformation of the organization.

Many authors have stated the need for wide involvement of library staff in the selection process, both to choose the best possible system as well as to save consulting fees (Crowe and Light, 1994; Olsgaard, 1985). Staff members need to feel that this is their system, not just the system they have to use. They need to know that they are critical to the success of the system every day, not out of some agenda of egalitarianism or empowerment, but because it is the indisputable truth. Not surprisingly, the system selection and migration processes are much stronger with the involvement of all staff.

Components of the selection process

The various pieces and parts of the selection process are interdependent and inseparable, but certain elements can be identified as components of the process:

- educating participants on the systems market;

- identifying features for a new system;
- getting information about features in various systems;
- evaluating the vendors;
- securing bids;
- negotiating a contract;
- communicating;
- managing stress.

Most of these are steps in the process, but some are activities that must take place continuously. The elements are presented in generally chronological order, but they do not need to be seen as necessarily distinct steps. It is important to keep in mind that the main brunt of navigating the shoals of the selection and implementation process falls on the library, not on any vendor (Matthews, 1985).

The initial stages

To involve all library staff in the process of selecting a new system, you need to make sure that the staff is aware of the state of the art of library automation. While library professionals often have opportunities to attend conferences, read professional journals, or network with colleagues at other institutions to keep abreast of the latest developments in automated systems, the support staff does not usually share those privileges. Even most professional librarians outside of the systems field do not thoroughly know the system market or the offerings of all of the vendors. Education on the state of the art of library automation does not require in-depth study of everything that has been created or written. It requires only exposure to the range of products and services available on the market. Staff and librarians who previously ignored the whole arena of automation must be pulled into the process, as the new system will affect them much more than current systems.

After the education phase, you need to create a list of required and desired features in the new system. Many libraries take considerable time assigning specific rankings to each feature. They class features as required, strongly desirable, desirable, and optional, or some such scheme. This can be helpful later when it comes to determining which system best meets the needs of the library. However, it is important to keep in mind that marking a feature as required does not guarantee that any of the systems you examine will actually support it. In fact, if a feature is

marked required, one or more vendors may choose not to bid on your system, feeling that they would be unable to meet your needs. It is probably better to know generally what your priorities are, but not spend exorbitant amounts of time ranking specific features or marking items as required and desirable.

With your list of features in hand, you need to get information about which features are supported by which systems. There are several ways to do this, but the most common is to submit a Request for Proposal (RFP) to the vendors which asks them to indicate which features their systems currently support or will support in coming releases. There are other ways to gather this information, however. The literature variously recommends the use of scripted demos, site visits, exhibits at library conferences, Requests for Information, and system manuals or handouts (Bahr, 1995; O'Rourke, 1987). While the RFP is the most common tool, even Matthews *et al.* (1987) concede that it is far from standard practice. If the use of an RFP is not a legal requirement, other choices should be considered, particularly if the timeline for system implementation is short.

If you choose to use an RFP, you need to strike a balance between specificity and brevity. The more specific the features you list, the more likely it is that the answer given by the vendor will be useful. On the other hand, you do not want to make your RFP too long for any vendor to want to reply. The primary reasons why vendors choose not to respond to an RFP are that they perceive that their system is not a good match for your needs, or your RFP seems to be written specifically to favor a different system (Matthews *et al.*, 1987). However, it is quite expensive for vendors to reply to an RFP, and they may choose not to respond based on the size of the document or the extent to which you dictate specific solutions to problems, rather than simply stating problems that must be solved. You want to keep the process entirely in your control, rather than doing anything that will make it likely that vendors will choose not to respond.

The information received in response to an RFP must be scrutinized carefully. An evaluation method should be developed before the RFP is sent out (Schwarz, 1985). There may be specific guidelines within the wider organization (university, municipality, or corporation) for how

responses must be rated. If there are none, you should try to avoid chaining yourself into a strict numerical evaluation. As hard as you try to be specific and unambiguous, many questions turn out to be confusing or ambiguous to one or more of the vendors. Also, vendors use such different strategies in how they mark responses that it is virtually impossible to know what a checkmark on a given feature means. If you must include a numerical analysis of the responses provided, be sure that it is not the only criterion on which you base your final decision. As Genaway (1989, p. 5) points out, "Evaluation of library systems needs to be both objective and subjective". You will need to crosscheck the results with any narrative that is provided and with information you have gained through other means.

In your detailed analysis of the systems, you must actually see the system to find out what it can do. While an RFP may be sufficient to eliminate candidates, it is not by itself sufficient to select one. The best strategy is to get further information through a mix of activities. The most common activities seem still the best: an in-depth, onsite demo; visits to sites using the software; and interviews with other users. You will never know everything you want to know about any system before you must choose, but all of these activities reinforce each other. The entire mix should be sufficient to give you confidence in selecting one system over the others.

The final stages

You will be selecting a vendor as well as a system. It is common to include in an RFP a request for the vendor's annual report, and a Dun and Bradstreet Report or credit references. In addition to these valuable sources of information, you should investigate the vendor's vision, mission and philosophy. You should be looking for several answers (Monahan, 1987):

- Does the vendor include your type of library as part of their primary target market?
- Do they intend to keep current with emerging standards?
- Do they devote sufficient resources to new development, to support, to training, to documentation?
- Do they have other customers with libraries like yours?
- Do they have enough customers to support their continued existence and growth?

- Do they have the capability to provide support to you at your location from time to time?
- Do they have an active User's Group with which you can share information and questions about how best to use the system, as opposed to how it works?
- Do they release new versions of the software frequently enough to address any problems that slip through testing?
- Do the people in charge seem to be trustworthy, knowledgeable, forward thinking, sympathetic and responsive?
- Does the vendor have organizational depth and staying power?

At some point, you need to get a specific bid for the system. If you use an RFP, the bid will be included, but it could be a separate request. If you are doing a wide survey of the market through your features inventory, you will probably be getting responses on a number of systems that are not really well-suited for your needs. You will be doing the vendors a favor, and may do yourself a favor as well if you make the Request for Bid a separate process, including only those systems that have already passed the test of the features inventory and vendor evaluation. Librarians interviewed after going through the selection process (Clement, 1985) felt they rated price too highly in their process, and wished they had focused more on the vendor. It is wise to do some serious screening before you look at price. Also, some institutions have very strict guidelines for contact with vendors and criteria for selection once you have submitted an RFP. If you can do some pre-screening, you may be able to keep more control within the library, rather than in the purchasing department.

The vendor's bid should include a hardware and software configuration that meets your stated needs, and includes pricing for each separate hardware and software component. Some systems vendors act as distributors for one or more computer manufacturers, so you can purchase the whole package through the same source. Other vendors require you to purchase the hardware on your own. In either case, they should provide you with a specific hardware configuration that they are willing to certify is adequate to support the usage goals that you delineate. As you look at the price submitted by the vendor, keep in mind that purchase price is only one component of the cost of the system. In addition to purchase price, there

is the cost for training, possible network upgrades, new staff, site preparation, and other one-time costs associated with bringing up a new system. Ongoing costs such as hardware and software maintenance, travel to user's group meetings, hardware upgrades, and workstation replacement also must be considered. Your decision should be based not on the one-time purchase price to the vendor, but on the total cost for up to seven years (Matthews, 1985).

Once your selection is made, you will need to negotiate a contract. You must know your goals well to succeed in contract negotiation. The vendor will offer you a standard contract, which can serve as a starting point for negotiations. You need to know what you can afford in one-time and recurring costs. If you have a special grant or budget for system purchase, but little support for the recurring budget, you may be able to pay more up front to push down on-going costs. If you have good support for the long-range, but only a slightly higher budget for system purchase, you may be able to postpone some or all modules or hardware options to later years to spread the costs more evenly. You might want to consider using a consultant for this process, even if you have not used one for other parts of the process. Library administrators are relatively inexperienced in contract negotiations compared to vendors, who negotiate many contracts. However, with the increasing need to secure contracts for online services and other resources, librarians today have much more experience in contract negotiations. If you have a firm grasp on your library's goals and resources, you can successfully negotiate a contract without outside assistance.

If there are features that you require that are not present in the system, it is tempting to include stipulations for their development in the contract. If these are features that current customers have mentioned as necessary but which have not yet made it into the product, and the vendor has already committed to them, this may be perfectly appropriate. If they are features which are not much needed by other customers, this is likely to be frustrating in the long run, unless it is a specific feature with a short development span and you are willing to foot virtually the entire cost of its development. Otherwise, you will be trying to force the system to be something other than what it is, and will be trying (probably unsuccessfully) to set the course for future development of the system

(Thompson, 1985; Taylor, 1985). This is not likely to work well and is likely to leave both you and the vendor with bitterness and hard feelings.

Communicating

The importance of complete and ongoing communication cannot be overstressed. During the whole process of system selection, migration, and early use, it is easy to be hurt by incorrect or ill-founded assumptions. For example, you might assume that the vendor representative negotiating the contract with you is aware that your site will be the host site for two other consortial partners, whose data will be converted from a different source. This is a reasonable assumption, since you might have been talking to your sales rep about this situation from your first contact. But too often those assumptions turn out not to be correct, due to some unexpected and sometimes unexplainable snafu. Every time you realize that you are making some kind of assumption about the process, it is best to verify it in some way.

There have to be limits to such communication. It would not be feasible to verify every single assumption by asking an explicit question (Am I correct in assuming that all of the OPAC help screens will be in English?). However, when unexpected events happen, it is usually a good idea to go back to your assumptions. For example, most people are willing to assume that an unexpected delay in the response to a question is due to the other person having trouble finding an answer or having to deal with more important issues. A surprising percentage of the time, however, the question has gotten lost, or the other person does not realize he or she is expected to answer it, or thinks it has already been answered. When anything unexpected happens, it is best to follow up right away with communication that will verify that the process is on track and delays or failures have a reasonable and acceptable explanation.

Communication must take place within the library as well as with the vendor. For the selection process to be a complete success, an environment must be created in which any communication is acceptable and encouraged. Thus, although there are and should be proper channels through which communication is passed, it must also be okay for a library faculty member to have a direct conversation with support staff in technical services, even if they

are in separate divisions. Administrators who are able to keep communication running through proper channels as well as breaking down the barriers between departments will find that the benefits are enormous.

Managing stress

It seems obvious that automating a library for the first time has the potential to cause enormous stress on the staff. Every process and practice the staff has learned over the course of their employment could change. Their comfort zone, the areas in which they feel competent, will shrink, sometimes to almost nothing. Migration from one system to another can be just as stressful. Two automated systems can be as different as automation is different from manual processes. The expertise that the staff has developed in exploiting the features and design of the automated system disappears overnight, as they have to learn the ins and outs of a new system. Staff members recognize well in advance of implementation that they will no longer be expert and that their competence will decrease. The stress starts building the minute the announcement comes that a new system will be selected.

A good selection and migration process takes this natural stress into account. There are lots of good resources for managing stress, and these resources should be used to help the staff (and possibly the patrons) cope with the changes. But it is even better to take steps to reduce stress at the source. Most staff members are well acquainted with the factors that affect their areas of responsibility, and many are experts. It can make a significant difference in a person's stress level to know that those in charge recognize and honor the expertise that these staff members possess. Making sure that each person can participate in the process of system selection and migration to the extent of their ability and desire to do so is often quite a relief. This participation is a tacit acknowledgement that their level of competence, and thus their comfort zone, is not, in fact, as small as they might think, but is large enough to allow them to bridge the gap to the new system.

It would be nice to feel assured that the system you buy will integrate smoothly into every aspect of your current organization and workflow, and will allow you to streamline processes that have been hammered out through years of trial and error. It would be great to feel that all of the

decisions you made in the past regarding how to enter data, how to separate various processes into steps, and what training your staff needed to prepare for the future were all perfectly insightful and correct. The truth, however, is that implementing a new system generally exposes many cracks in your process, no matter how careful you have been. Adapting to the new system can and probably will be hard for at least some of your staff. Some time-honored procedures and policies will no longer work, and the staff will have to learn entirely new ways of doing business. Some of the new ways are likely to be more difficult, and some features they relied on are likely to be missing. It is essential to prepare your staff for this likelihood, so that they can be ready to adjust their thinking, even on what they may feel are fundamental issues.

In many libraries, staff members are committed to executing their jobs at a high level of quality. When the new system comes up, they will be hard-pressed to maintain the level of quality to which they are accustomed. It will make a world of difference to give them an accurate picture of what to expect with the new system. First-time automators as well as those moving to a new generation system can hope that the move will end up being positive, positioning them for rapid progress into the future. But in the short term, the system is likely to be cumbersome, seemingly loaded with bugs, and requiring all sorts of unpleasant and unwanted changes in processes and policies. At least the first few months, and possibly the first year or more, are likely to be a time of loss rather than gain. If everyone knows and expects this, they will be much more accepting of the new system.

Some members of the staff, especially but not solely administrators, draw their power in the library from the established structures. They are likely to be resistant to change in any form. An administrator who is sensitive to the needs of the staff generally feels some need to reassure these people that they are still valuable and to try to ease their pain. This is valuable and necessary, but not sufficient. Those who resist change must not be permitted to derail the transformation process. As Olsgaard (1985) cautions, the negative effects of their resistance must be neutralized, even as their real personal needs for reassurance and comfort are being met.

Purdue's process

There are many ways the system selection process can be structured, but looking at a specific example can be instructive in understanding how the principles play themselves out in practice. The process that the Purdue University Libraries followed in selecting a system provides a useful illustration of the components and principles outlined above. At Purdue, our second-generation library system was running on a machine that would not operate in the year 2000. Also, we felt that we needed a system that would be easier to integrate into a generalized Web-based information delivery future that would certainly include full text and images, and would probably include video and sound and other technologies still in the development stages. The Libraries' Automation Advisory Committee created the process and managed its first two stages, which began during the summer of 1996. It appointed a steering committee in January 1997 that spearheaded the remainder of the process, up to the selection of the new system in the fall of 1997. The selection process was strongly propelled forward by its inclusion as one of the objectives of the Libraries' strategic plan. The planning process was also helpful in establishing precedents for use of multilevel teams within the Libraries and looking at all questions through the filter of the Libraries' mission and vision.

Over the summer of 1996, six library automation vendors were invited to the West Lafayette campus to educate members of the Purdue community on what their systems could do. Each vendor was given a day to show the basics of their online catalogs and how their systems handled the various basic staff operations such as acquisitions, cataloging, circulation and serials control. They also had free rein to showcase any significant features of their systems, such as access to journal index databases, managing image databases or gateways to full-text resources. The entire library staff was invited and encouraged to attend as many of these demonstrations as possible and articles and advertisements in the campus newspaper invited the entire campus community to attend one or more of these sessions. There was little or no evaluation of the systems presented, as the vendors invited did not represent a comprehensive set of possible automation solutions for Purdue and the task of

identifying and prioritizing library system requirements had not yet been done.

The Libraries' administration clearly conveyed to the staff the importance of these demos, and encouraged all staff to attend. Although not all staff chose to attend every session, virtually every staff member attended at least two of the sessions. Supervisors were instructed to assist however possible in making it possible for all of the staff to attend parts of the demos. Many staff members faithfully attended every minute of every presentation. Others came regularly for the part of the day when the module of most interest to them would be presented. The remainder came to pieces and parts of several demos. The Dean, the Associate Dean and the Directors modeled the desired behavior by attending the demos whenever possible. This not only helped bring the staff into the education process; it also set the tone for staff involvement in later steps in the selection process.

In the fall of 1996, 16 focus groups were convened to identify desirable features of a library system[1]. The groups were drawn from all levels of library staff and faculty, and each group focused on a specific module or process. Some key staff members were recruited to participate in specific groups. Library staff members were encouraged to volunteer to take part in these groups. Each volunteer participated in at least one focus group, and many participated in two. The committee decided that no staff member should participate in more than two, as their voices might then carry too much weight in determining selection criteria. The groups were facilitated by members of the Automation Advisory Committee selected for their expertise in both the focus group process and the specific area of focus.

Two focus groups, centered on the public interface aspects of the system, were held involving non-library faculty, staff, and graduate students. The participants for these focus groups were recommended and contacted by members of the library faculty. It was difficult finding enough participants to fill two groups, even though the commitment was for only one two-hour session. Undergraduate student comments and suggestions were gathered through questionnaires and one-on-one interviews following largely unsuccessful attempts to include them in the focus group process. Ideas from these library patrons were sought for their unique perspective as well as out of political expediency.

Each focus group generated as many ideas as possible related to the target module or process. Participants were encouraged to include basic features that were available in the current system as well as capabilities they might believe were possible only in their wildest dreams. Ideas were read aloud in round-robin fashion without judgement, and were then posted on the wall. Once all ideas were on the wall, participants sorted them into categories and ranked them according to their importance. All ideas generated by these focus groups were retained, while the ideas and categories identified as most important served as key criteria in the final system evaluation.

To get feature information about the systems, a Request for Information (RFI) was written. The RFI format was chosen instead of an RFP mainly because of the way ideas were generated and presented. The focus groups identified long lists of features, and we wanted to find out which systems included which features. The most important thing that came from the focus groups was their prioritization of their ideas. Even with the ranking, though, we had only guidelines, not requirements, for a new system. The step from general priorities to specific requirements was a big one and would have taken a considerable amount of time and effort. The RFI, therefore, seemed an expedient way of getting detailed information from vendors without wasting time and effort. In a reverse of the traditional method, the RFI was a very detailed document, while our later RFP was much briefer.

The RFI was divided into ten sections, each focused on a specific module or process. The sections included check-off boxes for all of the features and ideas generated by the focus groups, supplemented by items from other sources. It emphasized the priorities identified by the focus groups. Vendors were encouraged to include and reference any manuals, brochures, annual reports, training materials or other documents that they felt would prove beneficial to understanding and evaluating their products. The RFI did not include any request for pricing or configurations. The RFI was sent to eight vendors perceived as possibly being able to meet Purdue's needs, plus one additional vendor who requested a copy of it.

Nearly 60 staff members, representing all areas of the Libraries, including the two regional campuses hosted on our system, assigned numerical scores for the vendors' responses to the RFI. Each reviewer gave each vendor two sets of

scores. The first set was for their specific responses to the feature inventories. The second score was for how well the vendor seemed prepared to meet the Libraries' priorities. Reviewers were given instructions on how to assign scores, but were given considerable leeway in what degree of distinction to make between different vendors' responses. The primary criteria stressed were that all vendors should be treated fairly and that each individual should be consistent in how they assigned scores for any given section.

The reviewers' scores were weighted according to pre-assigned weights, representing the relative importance of each of the subsystems. For example, binding was considered less important than circulation. Also, numerical values were assigned for a small set of additional factors, including available hardware options, system architecture, and production status of the system. These numbers were combined with the weighted ratings from the reviewers to give an overall numerical score for each vendor. These scores showed clearly that three of the nine systems were not worth pursuing further.

Two customers of each of the remaining six systems were called as references. These customers were chosen by their closeness in size or structure to the Purdue Libraries. The references mostly confirmed the information already gleaned from reviewing the RFI responses, but also made it clear that some of the systems were not acceptable due to philosophical or technical factors that were not readily apparent from the RFI responses. Two finalist systems were selected as the best fits for the Purdue Libraries.

A Request for Proposal was sent to the two finalist vendors, mostly to get pricing information. The RFP did not include the features inventory from the RFI, but focused on the Libraries' priorities. The RFP gave a detailed statistical description of the Purdue Libraries. The vendors were asked to state that their systems could meet the needs of Purdue for a library automation system, and were asked for specific proposals as to how they would meet these needs. Also, they were asked to make themselves available for in-depth demonstrations of their systems.

The first responses to the RFP were multiple day demonstrations of each system at the West Lafayette campus. General scripts were provided for the demos, but the vendors were given considerable leeway in what they

presented. Attendees were asked to rate the various modules of each system, as well as making a preliminary choice between the two systems. Written responses to the RFP were not due until after the demonstrations. The RFP responses were examined in detail to make sure that the proposed systems were compatible with the goals and mission of the Purdue Libraries. Evaluation also involved visits by Purdue staff to sites running the proposed systems, as well as telephone interviews with users.

The RFI had asked for each vendor's vision and mission, and for a general statement of philosophy. The vendors were evaluated on their ability to support the addition of Purdue to their customer bases, and on their general direction for the future. The RFP asked for detailed financial documents; experts in Purdue's Purchasing and Investment departments evaluated each vendor in regard to financial stability. Although price was a factor in the decision, it was not guaranteed that the lowest bid would be accepted.

When the preferred vendor and system were identified, the Dean and the Director for Information Technology, together with a representative from Purchasing, handled the contract negotiation. They started from the sample contract provided by the vendor, but added many provisions required by the University as well as specifics to make the contract align with our goals. The financial arrangements were hammered out in face-to-face negotiations with the vendor.

The contract negotiation process took longer than anticipated, but the time was not wasted. Once a system had been selected, an Implementation Team was appointed. This team was empowered to make whatever decisions were necessary to get the system up and running successfully. The team was made up of experts in each of seven areas, plus a team leader. Each area expert chaired a sub-team for their module or area. This gave the module teams a direct link to the main team, and gave the main team a ready source of information about how progress was proceeding in each of the modules. The contract negotiation time was filled primarily with database clean-up activities designed to minimize difficulties in migrating data to the new system. This was really the first phase of the implementation of the system, as opposed to the selection process, and is outside the scope of this article.

Conclusions

System selection is not easy, but it is certainly manageable if you concentrate on your needs and goals. Selecting a library automation system should not be a discrete process, divorced from the wider institutional context. Success in the selection and implementation process must be defined as helping the library become the kind of information delivery organization that best serves the needs of its clientele. Success cannot be defined as bringing up a system that works for one day or one year. The real success of a system is measured over the whole life span of the system. Therefore, every decision you make along the way should be made to maximize the long-term benefits gleaned from the system. Starting with the library staff and moving to OPAC users, users are more and more becoming partners in the use of systems; their involvement is thus increasingly critical to the success of a system implementation. This involvement can be postponed until the system is installed and operational, but the process and transition are much smoother if user involvement is built in to all parts of the process.

Each library can exercise a great deal of flexibility in how to structure the system selection process. The required components of the process are not necessarily steps. Each library has its own characteristics and its own goals. A process that might be stunningly successful for one library might not work at all for another. Looking at the various elements of the selection process through the glass of the library's mission and vision, as well as the available personnel and resources will help the library mold the best selection process. Sometimes multiple components can be combined into a single step, while others might be best separated into multiple steps. An up-front understanding of the whole process of selection and migration will guide the library to design a working process.

The system selection process, when properly carried through to completion, will, in itself, benefit the library. A library should select a system as part of an ongoing effort to improve service to its patrons, not as an isolated exercise. If the process is seen in this light, the selection process can be a tool in shaping the organization to meet

its goals. Users who have been fully involved in the often traumatic process of selecting and implementing a new system will be better prepared to identify other areas where changes will be beneficial to the users. An atmosphere of partnership and trust can be developed that will translate into a greater feeling of ownership of the mission of the library. This can only work for the library's good in the long run.

Note

- 1 See <<http://omni.cc.purdue.edu/~manifold/fg/fgoverview.html>> for a description of the focus group process and details of the outcomes.

References

- Bahr, A.H. (1995), "Armed with a script: demo away", *College & Undergraduate Libraries*, Vol. 2 No. 2, pp. 71-109.
- Clement, R.T. (1985), "Cost is not everything", *Library Journal*, Vol. 110 No. 16, pp. 52-5.
- Crowe, L. and Light, J. (1994), "Desperately seeking a system", *Library Journal*, Vol. 119 No. 16, pp. 42-4.
- Genaway, D.C. (1989), "Buying online library systems revisited: who and what to ask, a generic guide", *Technicalities*, Vol. 9 No. 10, pp. 4-7.
- Matthews, J.R. (1985), "Turnkey systems: high risk for libraries?", *Library Journal*, Vol. 110 No. 14, pp. 133-5.
- Matthews, J.R. (1995), "Do you need an RFP?", *College & Undergraduate Libraries*, Vol. 1 No. 2 pp. 55-64.
- Matthews, J.R. et al. (1987), "The RFP request for punishment: or a tool for selecting an automated library system", *Library Hi Tech*, Vol. 5 No. 1, pp. 15-21.
- Monahan, M. (1987), "Vendor viability", *Library Hi Tech*, Vol. 5 No. 3, pp. 25-8.
- Olsgaard, J.N. (1985), "Automation as a socio-organizational agent of change: an evaluative literature review", *Information Technology & Libraries*, Vol. 4 No. 1, pp. 19-28.
- O'Rourke, V. (1987), "Selection of an online public access catalog: a checklist", *Information Technology & Libraries*, Vol. 6 No. 4, pp. 278-87.
- Schwarz, P. (1985), "Selecting a library computer system", *Catholic Library World*, Vol. 57 No. 1, pp. 37-44, 47.
- Taylor, J.B. (1985), "Integrated systems & vendor survival", *Library Journal*, Vol. 110 No. 16, pp. 50-1.
- Thompson, J.C. (1985), "How not to choose a (fully integrated, user-friendly, minicomputer-based, search-flexible, modifiable, ergonomic, cost-saving) lemon", *American Libraries*, Vol. 16 No. 10, pp. 690-3.