

Using the Scenario Approach for Achieving Sustainable Development in Academic Libraries

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Imagine in the not-too-distant future a hurried college student on the way to class. The student stops at the entrance to a classroom building and brings a miniature wrist computer up slightly and speaks to it saying, "Computer, make me an appointment with Professor Danzon for 4:00 p.m. next Tuesday, and remind me on Sunday night about that physics quiz I have on Monday—oh, and I have a paper to write on the development of the diesel engine during World War One for my History of Technology class—download some information that I can look at tonight." With impending advances in communications technology, computing miniaturization, voice recognition, artificial intelligence, and a host of other technical areas where new development occurs at ever increasing speed, this scenario may be less science fiction and more reality than we think possible. The implications of such change are significant for higher education institutions.

Under conditions of rapid, unpredictable change, library administrators will encounter increasing difficulty

in achieving any semblance of rational planning. Consider the advent of Internet technology. What library administrator made technology acquisitions or planned for library service delivery based on the advent of the World Wide Web? None, because no one was able to determine the probability it would be created or the impact it would have as the primary conduit for electronic information.¹ Decision making can no longer depend on probability. Instead, we need, as Drucker suggested, to look at what has already happened that will create the future.² Environmental scanning and demographic, societal and technology trend analysis are all utilized to determine what an academic institution will need to survive and prosper.

Sustaining Our Values

W. Lee Hisle's theme for his year as ACRL President was "Facing the New Millennium: Values for the Electronic Information Age." Values are important to our profession. Hisle's concern was how will the profession

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maintain them in an environment of radical technology change, and he emphasized that “stability can come from our values.”³ Therein lies the dualism that confronts our profession. How do we maintain our position as the primary change agents and early adapters of new technology within our institutions and still maintain the traditional values that are already being swept away by the floods of change? A known outcome of uncontrolled growth on a regional, planetary or professional scale is unsustainability. Unsustainability is a state characterized by the collapse of core values, progress, and prosperity. How do we preserve what is best about our present as we head into the future, and how can we, as library leaders, make wise administrative decisions to prevent unsustainability?

This dilemma is not unique to academic librarianship. Other disciplines are exploring a practice known as sustainable development in order to create a systems approach to preserving the core values of a profession or a service. This paper and associated presentation provide a discussion of sustainable development, and how academic librarians may use it as a guiding principle for progress. Environmental oriented professions, such as architecture or energy resource development, are able to more easily identify these principles and put them into practice. For academic librarians, the challenge is to identify a mechanism or process to provide an anchor to the positive values of the past and present as we head into an uncertain and unpredictable future? This paper suggests that such a process may be found in the scenario approach. Scenarios are stories about the future. The scenario approach offers promise to academic libraries for achieving sustainable development, and a model that explores the development of a scenario for achieving sustainable development is presented.

Sustainable Development and Organizational Change

Sustainable development is a difficult concept to illustrate. Good examples are nonexistent. Industrialized nations haven’t figured out the sustainable part, and the rest of the world lags in development. There are many examples of where it hasn’t occurred. In Carthage, the Roman Empire turned a successful agriculture system into a wasteland through over-cultivation and techniques that encouraged soil erosion. In the United States, we only have to think of whaling, the buffalo, and the Dust

Bowl as historical examples of non-sustainable development.⁴ Examples of unsustainability can be found throughout virtually every period of civilization and across all continents.

Contemporary thinking about sustainable development can be traced to the growth of the green movement that followed the first Earth Day in 1970. In 1987 the World Commission on Environment and Development put the idea of sustainable development in the form of an intergenerational golden rule: we must learn to meet the needs of the present without compromising the ability of future generations to meet their own needs.⁵ The idea was formalized at the 1992 UN Earth Summit in Rio de Janeiro through Principle Number Three of Agenda 21. It stated “the right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.”⁶

Early developments in sustainability thought and policy applied mostly to environmental and ecological concerns. These are the arenas in which the failure to create sustainable development will profoundly harm our chances for survival. In time, organizational scientists began to explore the adaptation of the principles of sustainable development to the behavior of organizations. A number of different theories have emerged but two themes are consistent. First, organizational change causes instability that leads to an unsustainable environment. Second, organizations consist of people, and without a strong value system people fail to adapt to change. If people cannot change, organizations cannot change. Not unlike living organisms, organizations must also sustain or perish.

Organizational values provide a support system to enable people to survive times of instability. Harley, in a rare article on library sustainability, stated that because the pace of change in libraries is rapid and technological in nature, the possibilities for instability are high. To achieve sustained development in library automation, Harley recommended adopting a framework of ecological values. This framework consists of five instrumental values: (1) community; (2) wholeness; (3) posterity; (4) smallness; and (5) quality.⁷ For library organizations, a key value within this framework is involvement in and support of both academic and regional library communities. Collaboration, internal and external, is a recurring theme in organizational sustainable development literature.

A Planning Approach for Rapid, Unpredictable Change

New technologies appear so rapidly that traditional strategic planning may now be too constrained to properly respond to crisis and opportunity. The new interest in scenario planning is in part a reaction to this weaknesses of strategic planning. Scenarios are stories about the future. This paper began with a scenario. Scenarios often appear outlandish. History provides repeated examples of the ridiculing of futuristic scenarios that later became reality (i.e., in the early 20th century Brigadier General Billy Mitchell was widely ridiculed when he proposed that airplanes would be able to sink battleships by dropping bombs on them). A scenario plan creates several stories. Each identifies how various elements might interact under certain conditions. Scenario planning does not create a single contingency plan, nor does it analyze how a change of a single variable can affect a process. It attempts to capture the richness and range of possibilities through narratives that are easier to grasp and use than great volumes of data.⁸

The steps for scenario planning are summarized here. Both Schoemaker and Giesecke provide greater detail on the process. First, determine the core issues or decisions for resolution, and the players affected. Second, planners identify, possibly through an environmental scan, the relevant issues of the immediate past, present trends and future possibilities. The planning horizon may be three to seven years. Third, critical uncertainties and driving forces are identified. For example, an uncertainty for an academic library is the degree to which constituents will seek out non-library resources over library resources; the force may be exponential growth in the ubiquitous access to global electronic data sources. Fourth, prioritize the uncertainties and forces according to their importance to the issues. Fifth, construct the initial scenario themes. The goal is to pull together ingredients for approximately four scenarios. A simple approach is to identify extreme worlds by grouping all positive and negative elements; a “winners and losers” scenario where conflict occurs is another suggested method. Sixth, develop the scenarios using a narrative sequence of events that shows possible and plausible happenings in each step. The final scenarios consist of plots that are easy to follow and remember. The final stage typically consists of evaluative or research methods aimed at testing the implications or potential outcome of the scenarios.⁹

Because it is difficult to conceive exactly what a sustainable library is or how the eco-framework would be implemented, the scenario approach offers a viable method for visualizing a sustainable library future. Using information about driving forces such as demographic change, changes in scholarly publishing, technological change, resource availability and change in higher education, a series of scenarios can be created to provide an image of what conditions would be necessary to allow for sustainable library development. Constructing scenarios can be an important part of the learning process, helping library leaders to clarify their vision of values to preserve for future generations of librarians and library users. The scenario approach can also enrich the process by identifying emerging risks and required actions for achieving sustainability.¹⁰

Scenarios for Sustainable Development

The scenario process begins with some thinking about the future. Three types of futures are typically envisioned: probable, possible and preferable. The probable future is based on trends that are fairly constant. For example, a private, four-year liberal arts college library could reasonably assume its future driving population force is an 18 to 22 year old demographic, while its economic force is tuition-driven revenue. The possible future attempts to consider “surprises.” In the technology realm, a surprise force may be a new generation of light, handheld wireless computing devices that allows all students to connect to library resources from anywhere at anytime. The preferable future is the library’s most desired image of itself. In a truly sustainable library, one that is guided by actions today that will create the stability needed for present and future generations, this image will grow from an organizational eco-framework.

When these driving future forces are identified and prioritized, main themes or assumptions can be developed for scenarios of sustainable library development. These themes emerge from the interaction between trends and driving forces. The themes suggested by this paper’s matrix model are four different library futures: (1) failing library; (2) conventional library; (3) technocentrist library and (4) transformational library. They were derived using plot lines familiar to scenario developers, such as “winners and losers”, “challenge and response”, and “evolution”. The matrix model itself is based on those driving forces with the greatest influ-

ence or priority. Two key forces are the eco-framework, which provides a set of principles for organizational sustainability, and values retention, which refers to the traditional set of organizational values that help libraries maintain stability. The initial matrix is presented in figure 1.

For each matrix quadrant a scenario results from intersecting driving forces. The initial matrix is further developed in figure 2. The scenario names suggest the outcome of intersecting forces in each quadrant. They also can provide a device to fuel participant discussions of the scenarios and their implications for a library organization. Participants, working together, create a narrative for each scenario that is tailored to the environment and driving forces particular to that organization. This model is designed for academic library organizations that want to initiate a scenario approach to imagine their own sustainable future.

Characteristics of the Scenarios

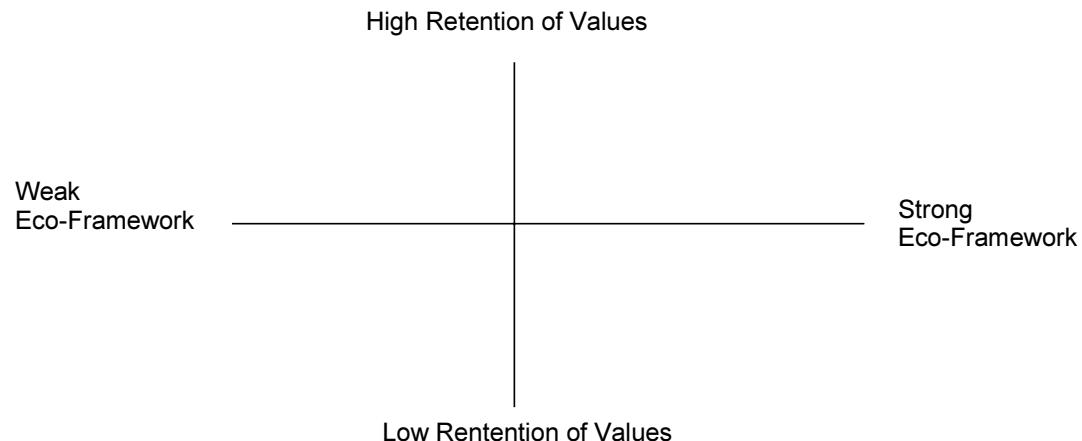
This paper does not allow for the unfolding of full scenario narratives. The intent of this discussion is to provide a model to engage others in thinking about sustainable development in academic libraries, and to provide a structure for developing a plan with the scenario approach. The short scenarios presented here briefly illustrate the context of each matrix quadrant and its characteristics:

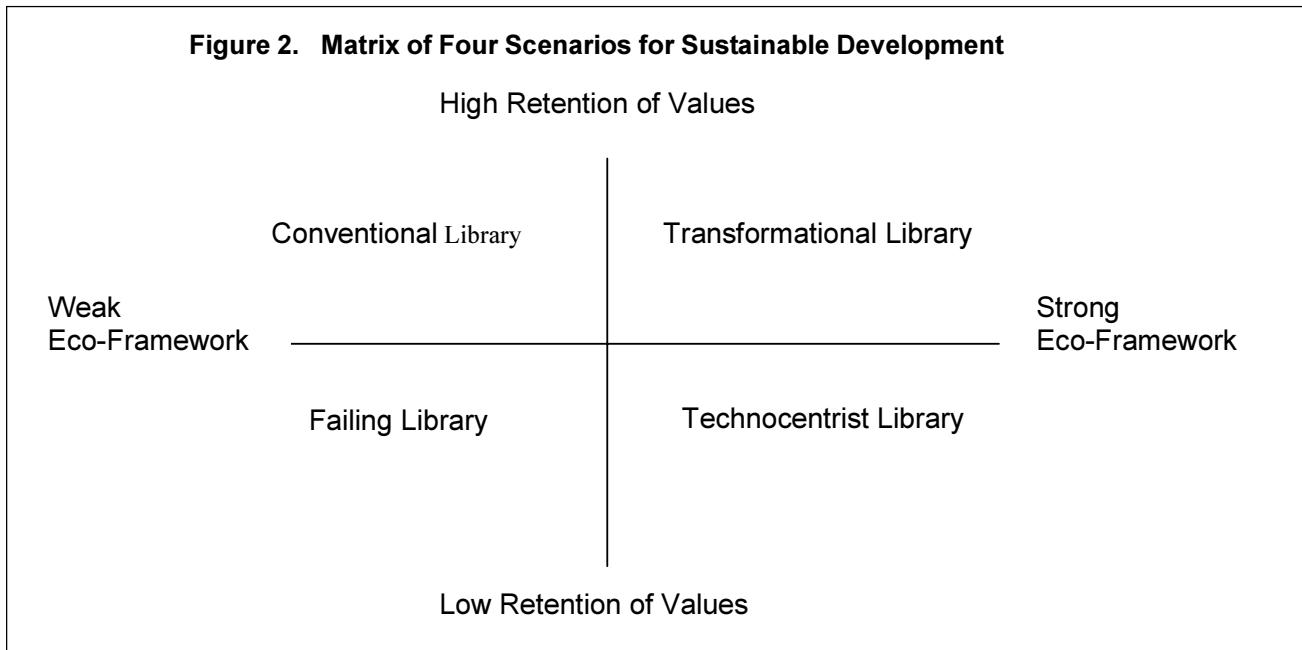
Failing Library

This is a bleak scenario of a library organization that has faltered in sustaining its core values and neglected to develop an eco-framework to guide its development. This is the outcome of weak library leadership and decision making guided by short-term satisficing rather than sustainability. These decisions allowed the administration to gradually shift the library's resource base to other sectors of the institution. This situation was exacerbated by the library's failure to keep pace with information and educational technology, while other units embraced new technology for the delivery of educational programs, particularly Internet-based technology for reaching remote learners. Institutional administrators fell victim to the misconception that all information is available free on the Internet. Seeing the library's constant increases in periodicals as a weight dragging down the institution, decisions were made to cut library funding, and to encourage mass use of the World Wide Web as the primary vehicle for information retrieval. The library staff did little to counteract this movement. As the library drifted from its core mission and its ability to maintain its values, traditional user groups migrated to other avenues for obtaining services traditionally provided by the library. The library survives, but its future is uncertain. Key characteristics of the Failing Library are:

- weak library leadership lacking vision and sustainability thinking;

Figure 1. Matrix of Most Important Forces in Sustainable Development





- failure to innovate using latest information and computer technology;
- traditional functions are absorbed or acquired by other institutional units;
- control over library future has shifted to other administrators;
- collaboration with other libraries is virtually non-existent;
- fallen victim to “everything is on the Internet” syndrome.

Conventional Library

In this less pessimistic vision of library sustainability the Conventional Library sustains its commitment to traditional values, but an eco-framework does not guide planning for sustainability. The library is functional but stagnant. It stays afloat but drifts, rather than setting a course for growth and transformation. The library administration prefers to maintain the status quo. It maintains its value culture, and continues to be guided by the belief that library has a critical role to play in the educational process. However, there is a weak vision of a preferred future, and the library is slow to adopt new technology. The rest of the institution is moving ahead at a faster pace, especially on the technology frontier. The academic community perceives the library as an organization that is clinging to the past. In response, the library attempts to try to be what it thinks others want

rather than being guided by a vision of achieving a sustainable, high-quality service organization. This results in a homogenized library organization that lacks excitement, diversity and community involvement. The library's progress is hampered by weak links with consortia. It attempts to go it alone, ignoring the opportunities that might arise from cooperative activities with other library organizations. Key characteristics of the Conventional Library are:

- retains strong value culture;
- slow adaptation of technology;
- weak vision of future and direction library must take for sustainability;
- tries to be all things to all people; lacks service focus;
- aims for homogenization rather than diversity;
- weak consortia links.

Technocentrism Library

In some scenario matrixes this vision of a future library might be identified as “growth library”. Progress is being made. The director has a strong vision of the organizational future, but the library's sustainability is still in doubt. The library's growth was fueled by shifting resources to technology development. New computers, networks, excess electronic resources, a shifting focus to remote over local users, and other new technologies were viewed as the path to organizational futurity. Tech-

nology, vision, and scale are important parts of the eco-framework, but in this scenario the library's technology centricism has blinded the leadership to other needs. Weak core values make sustainability an uncertainty in this scenario. More technology means less resources for staff training and development. Staff members are overwhelmed by the new technology, and grow unqualified to provide traditional library services. The loss of guiding beliefs leaves staff alienated and unfulfilled. Some leave for other opportunities. Those left behind are weaker in their ability to help constituents find their way through the maze of new technology. Key characteristics of the Technocentrist Library are:

- weak and disappearing value culture;
- technology perceived as solution to problems and link to future;
- human element critical to traditional services is de-emphasized;
- staff is alienated, overwhelmed and frustrated by fast technological change;
- strong vision of future.

Transformational Library

This scenario describes an evolving library. Improvement comes through a combination of strong commitment to values, and a leadership philosophy guided by the principles of the eco-framework. The Transformational Library is creating an environment of sustainability. Important decisions are examined through lenses that focus on sustainable development. Actions preserve the present library's traditional core values for future library leaders. Put simply, the Transformational Library's decision making is guided by its leaders concern for the library's future. The library director expends significant energy on creating a value climate and value culture. There is clear communication about organizational policies, practices and procedures to the library's staff and constituency. Organizational behavior is guided by a set of beliefs rooted in a tradition of service that extols the virtues of barrier-free access to information. The library views itself as a learning organization, and creates a setting for staff that encourages mastery, team development and learning through exploration and experience. Because individualistic organizations will be greatly challenged in the future, the Transformational Library builds bridges with partners both within the institution and beyond its walls. The key characteristics of this library are:

- guiding philosophy states present actions must sustain library futurity;
- emphasizes value climate and value culture internally and externally;
- embraces technology but allows staff to adapt to and master it;
- internal and external collaborative efforts are vital to organization;
- vision of future is library as evolving, permutable organization.

Conclusion

This paper is intended to challenge academic library leaders to think about, plan for, and develop sustainable organizations. They should be eager to take this challenge because the alternative is clearly unacceptable. A recent essay by Brian Hawkins, the President of EDUCAUSE, offers a vision of that alternative. In doing so he presents a similar challenge, but from a different perspective. In the essay, Hawkins declares that traditional libraries are indeed unsustainable. Concentrating on just three issues, the costs of material, personnel and space, he explains that the traditional unit of analysis - the campus library - cannot exist in the current environment of higher education. Solutions to the dilemma of unsustainability, Hawkins suggests, lie in finding new models that focus on larger units of analysis (e.g., consortiums), finding greater efficiencies in the electronic distribution of information, changes in the scholarly publishing process, and sensible copyright policies for a digital environment.¹¹

All of these suggestions make good sense, and will contribute to achieving sustainable development for academic libraries. This paper reinforces that effort by focusing attention on the importance of maintaining the traditional value climate and culture of academic libraries in tumultuous times. Sustainable development is a new concept for academic libraries. As library directors take their organizations into the new millennium and the specter of unsustainability looms larger, this is an opportune time to adopt sustainable development as a guiding philosophy in leading academic libraries. Our task is to better define what sustainable development requires and how it is achieved. The matrix model presented here is only the first attempt to accomplish that task, making use of scenarios to envision the characteristics and qualities of a sustainable library. The accuracy of these scenarios, like any prog-

nostications, is open to debate, as is their ultimate utility for achieving sustainability. Robert Olsen put it best when he wrote, "The challenge is not to pick which scenario is best, but to create ever-better images of what a sustainable world could be like".¹² We can do the same for our libraries.

References

1. Foster, Clifton Dale and Steven J. Bell. "The Agile Technology Manager: Adapting New Technologies to Connect People With Information," in Haricombe, Lorraine J. and T.J. Lusher, eds. *Creating the Agile Library: A Management Guide for Librarians*. Westport, Conn.: Greenwood Press, 1998. 53.
2. Drucker, Peter F. *Managing in a Time of Great Change*. New York: Truman Talley, 1995. 40.
3. Hisle, W. Lee, "Facing the New Millennium," *College and Research Library News*, 58 (Dec. 1997): 764-65.
4. Muschett, F. Douglas, "An Integrated Approach to Sustainable Development," in Muschett, F. Douglas, ed. *Principles of Sustainable Development*. Delray Beach, Fla.: St. Lucie Press, 1997. 3.
5. Olson, Robert L., "Sustainability as a Social Vision," *Journal of Social Issues* 51 (winter 1995): 15-36.
6. Muschett, "Sustainable Development," 6.
7. Harley, Bruce, "Planning for Sustainable Automation," *Information Technology and Libraries* 14 (Sep. 1995): 176-79.
8. Schoemaker, Paul J. H., "Scenario Planning: a Tool for Strategic Thinking," *Sloan Management Review* 36 (winter 1995): 25-40.
9. King, James, "Scenario Planning: Power Tools for Thinking About Alternatives," in Giesecke, Joan, ed., *Scenario Planning for Libraries*. Chicago: American Library Association, 1998.
10. Gallopin, Gilberto C. and Paul Raskin, "Windows on the Future: Global Scenarios and Sustainability," *Environment* 40 (Apr. 1998): 7-19.
11. Hawkins, Brian L., "The Unsustainability of the Tradition Library and the Threat to Higher Education," in Hawkins, Brian L. and Patricia Battin (eds.), *The Mirage of Continuity: Reconfiguring Academic Information Resources for the 21st Century*. Washington, D.C.: Council on Library and Information Resources, 1998.
12. Olson, "Sustainability," 15-36.