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Scenario Planning: A Tool for Academic Health Sciences Libraries

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Abstract

Objective: Review the International Campaign to Revitalise Academic Medicine (ICRAM) Future Scenarios as a potential starting point for developing scenarios to envisage plausible futures for health sciences libraries.

Method: At an educational workshop, 15 groups, each composed of four to seven Association of Academic Health Sciences Libraries (AAHSL) directors and AAHSL/NLM Fellows, created plausible stories using the five ICRAM scenarios.

Results: Participants created 15 plausible stories regarding roles played by health sciences librarians, how libraries are used and their physical properties in response to technology, scholarly communication, learning environments and health care economic changes.

Conclusions: Libraries are affected by many forces, including economic pressures, curriculum and changes in technology, health care delivery and scholarly communications business models. The future is likely to contain ICRAM scenario elements, although not all, and each, if they come to pass, will impact health sciences libraries. The AAHSL groups identified common features in their scenarios to learn lessons for now. The hope is that other groups find the scenarios useful in thinking about academic health science library futures.

Key Messages

Implications for Practice

- Opportunities for new alliances, key partners and clients.
- Increased probability of fewer libraries and less space.
- More effort is necessary to relate to stakeholders.
- Teamwork will become ever more important.

Implications for Policy

- Major challenges for resource ownership, staffing and training.
- Importance of cross-training, but expecting library staff to be competent in all areas of library service may be impractical.
- Need to become more "business like."

Introduction

Most health care leaders are familiar with traditional planning models such as annual or strategic planning, but to predict multiple possible futures in an uncertain environment and to improve decision making, leaders are turning to "scenario planning" or scenario thinking.[1] The technique is especially helpful for presenting different futures, for helping manager/leaders think differently, and is usually accomplished by team members who consider instabilities in the present and drivers of the future. The benchmark for scenario planning is the approach of Global Business Network, GBN (http://www.gbn.com).[2] Despite considerable variance in application technique, the most common methodology generally employs eight steps:

1. Identify a focus question,
2. Identify key environmental factors,
3. Identify driving forces,
4. Rank critical uncertainties,
5. Choose main themes—most uncertain and important forces,
6. Develop scenarios,
7. Examine implications of the scenarios, and
8. Identify ways to monitor changes.

The goal is not to predict the future, but to provide more informed conversations by broadening ideas about what the future might bring. These can then be used to think more deeply about the present and the future and for better short-term pragmatic decision making and long-term strategic planning.

Background

Scenario planning, pioneered by the Shell Corporation in the early 1970s,[3] has been used in corporate, military and non-profit company settings in industrialized and non-industrialized countries. Recently, PriceWaterhouseCoopers used it to reveal that individualism, collectivism, corporate integration and business fragmentation would be significant factors affecting global business.[4]

In 2005, the International Campaign to Revitalise Academic Medicine (ICRAM)[5] used scenario planning to create five scenarios of how academic medicine might look in 2025. The first ICRAM scenario

(Academic, Inc.) sees research and teaching moving into the private sector as a predominant driver of change.[6] The second scenario (Reformation) visualized the end of medical schools, and that teaching, learning, research and quality improvement will take place in the practice setting and will be everybody's business.[7] ICRAM's third scenario (In the Public Eye) is almost Orwell's Big Brother world. Success in this scenario comes from delighting patients and the public, and using media effectively.[8] The fourth scenario (Global Academic Partnership) foresaw a world where closing the global poverty gap is the most important agenda item.[9] The last scenario (Fully Engaged) may be the nearest to current expectations: academics recognize the importance of energetically reaching out to the public, practitioners and politicians.

The scenarios spanned 20 years; some were more futuristic than others. They were not predictions, but a range of plausible stories about the future. The ICRAM Report [10] and recommendations of several major national academic medicine organizations[11-13] recognize that much of what will determine academic medicine's future lies outside its control. As the world changes, academic health sciences leaders and organizations must follow.

Scenario planning has also been used by academic and public libraries. Giesecke[14] describes how scenario planning is used to assist academic libraries to become learning organizations, to redesign strategic plans for public libraries and to address strategic and broad issues such as future roles of library professionals. However, scenario planning is not a common methodology employed by academic health sciences libraries.

The Association of Academic Health Sciences Libraries (AAHSL), composed of library directors from 142 accredited US and Canadian medical schools belonging to the Association of American Medical Colleges (AAMC), and other library associations have always been interested in the future of the profession. AAHSL is especially interested in promoting excellence in academic health sciences libraries and ensuring that the next generation of health practitioners is trained in information-seeking skills. As an example, in the late 1980s, an AAHSL task force created a vision of the future to assist member libraries in achieving leadership in a dramatically changing environment. The taskforce issued a 1987 unpublished report

focusing on the environment and needs of AAHSL members. It served as a practical guide and checklist at a time of intense change in technology and health care. Technological changes, most notably the proliferation of the Web, and continuing health care changes prompted a 2003 report, *Building on Success: Charting the Future of Knowledge Management within the Academic Health Center*.[15]

Objectives

Association of Academic Health Sciences Libraries' primary objective in reviewing scenario planning was to evaluate scenario planning as a methodology that might benefit AAHSL and its membership. A literature review, the majority of which is included as references, indicates that scenario-driven planning is a technique that offers managers a flexible approach to viewing the future in today's uncertain environment. Using this technique, managers develop scenarios or stories to design possible futures that can be used to design strategies to move the library or association forward. The literature also indicates that scenario-driven planning is a useful tool to identify assumptions about the library's future, to describe mangers' mental models of the future and then use that information to review and renew the library.[16]

Methodology

In 2005, AAHSL appointed a Future Scenario Task Force that reviewed the literature and made recommendations about how scenario planning might best be communicated to AAHSL membership. The task force proposed a workshop to explain the methodology and to give members practical experience in developing scenarios. The task force and the AAHSL Annual Meeting Education and Program Committee planned and presented a scenario planning workshop in Washington, DC, in November 2007 facilitated by Joan Giesecke, D.P.A., Dean of Libraries, University of Nebraska and author of *Scenario Planning for Libraries*.[14] Fifteen teams each composed of four to seven AAHSL directors and NLM/AAHSL Fellows examined the implications of the ICRAM scenarios for academic health science libraries.

As every work environment has major developments, forces and trends moulding and shaping it, the teams began by examining the driving forces listed by the ICRAM study and creating a listing of forces driving change in academic health sciences libraries. These primary changes have been frequently mentioned in the literature.[16-20] As might be anticipated, drivers of change identified by major national academic medicine organizations reports and recommendations share a great deal of common ground with those considered by other organizations representing various segments of academic medicine in general. This is also true for academic health sciences libraries. There are, however, some specific drivers of change, such as scholarly communications models, the migration from print to electronic information and NLM's role as a library of record, that are unique to academic health sciences libraries (see Table 1).

These driving forces tend to consist of key environmental forces and trends. Trends are changes in the direction of an event and are usually long-term changes. Sometimes trends occur slowly (gaps between "haves" and "have nots") or quickly (increased bandwidth), increase or decrease or may be seasonal. These driving forces fashion or shape the future of the library and are usually the cause of major issues addressed by libraries.

Results

The 15 teams were asked to develop scenarios with story lines for academic health sciences libraries using an environmental setting identified by one of the five ICRAM scenarios. To ensure equal treatment of ICRAM plot lines, every fifth team developed a story line from a different ICRAM scenario. Each team also identified the impact on values, staffing and resources; noted trends, challenges and responses, winners and losers; and considered key partnerships. After the workshop, the authors combined these elements into five distinctive story lines or aggregated scenarios. These plot lines, challenge and response implications, and evolutionary changes associated with the scenarios were then summarized into a matrix table (see Table 2).

For academic health sciences libraries, the scenarios correspond to the ICRAM scenarios as follows:

Table 1. Drivers of change

ICRAM drivers of change	AAHSL drivers of change
New science and technology, particularly genetics and information technology	Changes in business models for scholarly communications
The rise in sophisticated consumers	Migration of print to electronic format
Globalization	Increase in bandwidth
The increasing gap between rich and poor	Inclusion of multi-media in scholarly communications
The unimportance of distance (i.e. no longer means being remote)	Rise in Internet search engines
The demand for more from health care by "big hungry buyers"	Move from individual to group learning
The spread of the Internet and digitalization	Changes in student study habits
Increasing anxieties about security	Ubiquity of the Internet
The expanding gap between what can be done and what can be afforded	Spread of hand-held technology
The aging of society	Rise in number of remote users
Increasing accountability/regulation	The gap between the "haves" and the "have nots"
The loss of respect for experts	The 24/7 society
The rise in self-care	Increasing diversity of services
The 24/7 society	Increased interest in consumer health services
The economic and political rise in China and India	Rise in outreach services
	NLM's role as library of record
	Globalization of medical publishing

• Library, Inc. [academic library flourishes as a profit center] = ICRAM's Academic, Inc.

• Evolution to Reformation (integration across clinical, research and education services) = ICRAM's Reformation.

• If Disney® Ran the Library (success comes from delighting the public and the media) = ICRAM's In the Public Eye.

• Go Global (information access for global health equity) = ICRAM's Global Academic Partnership.

• Fully Engaged (all stakeholders energetically engaged) = ICRAM's Fully Engaged.

Scenarios, when fully developed, are complete stories—logical and compelling. Many of the driving forces that shape scenarios may be played out as themes or plots in each individual scenario. Their purpose is to engage and immerse the reader in the world characterized by the particular set of driving forces. Scenario styles can be very creative, anything from chronological point form, to a true short story with organizational real-life characters propelled into the future. The views of experts or insightful people are of particular value. The challenge is to keep each story consistent, with a strong self-identity and each

very different. Often, there emerge common strategic options, action steps that make sense under any scenario. These are the initiatives that can be acted upon quickly, without the original apprehension of uncertainty, as they make sense in all worlds. Scenarios also provide a means to explore objectives and strategic options; their value does not end once the focus question is answered.

Good scenarios have story lines that outline motivating forces for the central story. For example, when developing scenarios for the Library, Inc., AAHSL members focused on stories that told how libraries would change if profit were the main motivation. In this scenario, motivational forces also drove value and staffing decisions. It was also logical in this scenario that entrepreneurialism was highly prized. Where stakeholder engagement was the main motivation (Fully Engaged), cross-training was highly prized. These motivational drivers also produce distinctive plot lines that identify associated trends, challenge and response implications and evolutionary changes. How these elements fit into a scenario planning process depends on the driving forces and on the central elements considered most important and most uncertain. For example, winners and losers,

Table 2. Summary of AAHSL scenarios

	Library, Inc.	Evolution to Reformation	If Disney® Ran the Library	Go Global	Fully Engaged
Story line	Libraries flourish as profit centers	Integration across clinical, research and education services Continuous learning	Success comes from delighting the public and the media	Information access for global health equity	Library engages energetically with all stakeholders
Values	Focused services Building strategic alliances for profit Accountability	Open medicine Focus on experiential learning Teamwork Collaboration	Knowledge management Community outreach Social networking Health information literacy	Health information literacy Open access Measuring value	Team based Online learning Measurable outcomes
Staffing	MBA Informationist Bonus-based salaries Entrepreneurial	Greater diversity of skills People skills highly important	Library reports to PR Associate Directors for Development, Operations & hospital liaison Library uniforms	Universal first responders More non-librarian staff	Cross-training Practice guidelines Facilitators
Trends	Ownership of research results Work is project based Fewer libraries Smaller ones swallowed by larger ones More niche training	Open access legislation Ubiquitous access to resources Great collection diversity Changing and diverse services	Patients are main constituent Library most accessible feature of medical education/care Merger of library & media Faculty no longer primary users	Global licensing New information delivery models Increased focus on public health Global research teams	Training users to use info tools Development of intuitive tools Value-added services
Major challenges	Less federal funding	Organizational support model unclear Budget models not clear	Role of NLM To what extent is building open to the community? Boutique services Storefront services	Role of librarian most uncertain Evidence linked to EMR Copyright	Expertly structured to personally integrated

key partners and resources were identified for each scenario. Although each factor is considered important, the certainty of the influence of each was greatly contested.

The workshop permitted the team members to engage in studying issues in a systematic and enjoyable fashion. There were times with lots of discussion, lots of fuzzy issues and lots of lack of consensus. While uncertainty is not vanquished using this methodology, it does permit the community to come together to think about the future and achieve greater clarity of direction. As the following AAHSL scenarios illustrate, a greater consensus of important factors and most uncertain factors can be achieved.

Scenario 1: Library, Inc.

Association of Academic Health Sciences Libraries teams saw many implications for AAHSL librarians and libraries in this scenario. They believed it would be important for librarians to assume a greater role in assisting with niche training, to create information commons and to rely more heavily on data to justify their existence. In a profit-driven environment, less federal funding would be available as academic health care focus shifts from the government to the private sector as key revenue sources. Private philanthropic library foundation grants would become a larger source of supplemental income in this scenario. Further, it would be important for libraries to employ more customer satisfaction surveys with critical emphasis on outcomes measurements. AAHSL teams were uncertain about how fully patient safety concerns would permeate the library community and whether administrators would see librarians assuming a crucial role in improving safety. With increased competition, smaller parent institutions would be assimilated by larger ones and smaller academic health sciences libraries would probably be combined into larger ones. Entrepreneurialism and librarians with advanced business degrees would be highly prized.

Scenario 2: Evolution to Reformation

Plausible stories for this scenario suggest the increasing importance of more and more knowledge-based information databases to encourage greater integration across clinical, research and education services. Existing AAHSL libraries would meet the integration challenge by offering specialized or "boutique" services. In order to survive, the libraries would need to play a critical role in teaching students to first learn how to learn and then learn by doing. Teamwork and collaboration are essential to the integration process, but difficulty in achieving consensus and stability among teams would create changing and diverse library services. Existing experience in developing information and education commons would be a valuable resource.

Participants were somewhat certain that where today thousands of journals are sold on subscription, thousands of editorially intensive databases would also be sold on subscription, many of them probably sold by existing publishers. However, the teams were uncertain about which advanced learning and communications technologies would be supported by virtual libraries. Less certain was the informationist's role in encouraging a health care team approach. The AAHSL teams disagreed about whether fewer library associations would exist, especially at local and regional levels. Health care collection, librarian skill and service diversity would be critical; however, an appropriate organizational support model to encourage and fund this diversity was unclear.

Scenario 3: If Disney® Ran the Library

Pleasing the public is the primary motivation in this scenario and AAHSL teams saw the importance of its members to increasingly focus on outreach services as the library's role in training diminished. Community outreach, social networking and health information literacy, already strongly embraced by many through NLM Go Local projects and public library cooperative efforts, would expand. Teams uniformly agreed that the form and size of libraries and parent institutions would range widely. Some institutions would have a physical library, but many would have much smaller libraries—a trend already seen in the academic health care environment. In this scenario, librarians would probably become more anxious about their job security. Public Relations departments would have much to say about the type of library services provided.

More attention would be paid to satisfying patients rather than faculty requests. Participants were uncertain about how regulated health information would become but believed that information vendors would employ massive public relations campaigns to combat negative perceptions of their products and to hype, often with unfounded evidence, their superiority over others.

Scenario 4: Go Global

To achieve global health equity, AAHSL members thought it would be vital for health science librarians and libraries to have access to a global library of medicine network as information became increasingly catalogued and organized in disparate locations. They suggested that library collections may need to include several languages, but were uncertain about whether libraries would provide electronic translation services. The plausible stories suggest that it would become increasingly difficult to distinguish public, academic and health science libraries from one another. To improve global health, global research teams would undoubtedly focus on improving public health. This focus would drive new information delivery models and promote global information licensing.

Scenario 5: Fully Engaged

In the fifth scenario, Fully Engaged, library, information technology and medical professional associations may merge in order to achieve greater relevance and to convince the public of the value of their mission. It would also be important for librarians to understand that they cannot sit in an ivory tower and hope people will appreciate how wonderful they are; they must market and promote themselves. Knowledge management might be important in creating future wealth, but it would be essential to improve the public profile of information workers such as librarians. Potential tactics include training users to use diverse information tools, developing additional intuitive information tools and providing more value-added services.

Greater use of communications technology would be important. The teams were not certain whether some form of a library radio outreach show would return, but, if so, it would probably return as an Internet pod cast. The teams, however, did agree that few medical departmental libraries would survive as electronic knowledge-based information resources become even more "user-friendly" but not necessarily more reliable search tools. All agreed that information professionals would have interesting opportunities to define their roles and contributions and that the lines between work and leisure will blur.[21]

Conclusions

Librarians face a real dilemma: how to guide the library through an uncertain, changing environment while agreeing to follow some sort of action plan. Managers have tried numerous techniques including strategic, long-range and short-range planning, crisis management, reengineering, redesigning and total quality improvement. Although any of these techniques can work, they too frequently result in little more than a large report that gathers dust on a shelf.

We have no oracle to tell us what kind of world will result from the interplay of forces impacting our libraries, but it is possible to envisage plausible futures. Scenarios are tools; not an end in themselves. None of them will come to exist exactly as they are described, but the future is likely to contain some elements from each of them. The AAHSL plausible future stories, their plot lines and the major forces and trends shaping them have a number of common themes. They tend to support provocative statements made by the Taiga Forum[22] such as:

- Traditional library organizational structures will change. Public services and technical services often no longer exist as separate units. It is not uncommon to cross-train public services and information technologies staff and to refer to the staff collectively as "consulting [something]". Job categories as we know them (i.e. reference and/or catalogue librarians) will no longer exist.

- Simple aggregation of resources will not be enough. The scenarios support projecting specialized resources for constituency use into research and learning workflows (Myspace, eportfolio, Content Management Systems (CMS0, RSS aggregator)).

- Libraries will have reduced physical footprints for physical collections within the library proper. New medical school libraries generally have 50% less space for diminished collection and support services needs. Many AAHSL libraries with large print collections are studying ways to more effectively use print collection space as collections migrate to electronic formats.

- Meta-searching is becoming more sophisticated and easier for the end user. Much scientific information discovery already begins at Google Scholar® which includes most peer-reviewed online journals of the world's largest scientific publishers and is similar in function to the freely available Scirus®, CiteSeer® and getCITED® or subscription-based tools like Scopus® and Thompson ISI's Web of Science®.

- Content will increasingly be disaggregated from container. The granularity of the term "least publishable unit" has increased. It is now easy to locate a table, a fact, a quote, a picture and single song from what used to be aggregated, monolithic content: books, journal articles, government reports, records and CDs.

- The Electronic Medical Record (EMR) and the integrated library system will become highly integrated and will have a significant impact on health care, although the extent to which library services will be integrated into the EMR is unclear.[23]

The AAHSL and ICRAM working groups tried to identify common features in their scenarios to learn lessons for now. The ICRAM campaign, launched in 2003 by the British Medical Journal, Lancet and 40 other partners was a response to a widely held view that academic medicine is in crisis. Although the literature reports few attempts to duplicate the ICRAM work, a recent internet search by the authors discovered nearly 400 references to ICRAM.

Association of Academic Health Sciences Libraries participant comments indicate that the workshop was well received and several AAHSL directors stated that they would use this methodology to address specific issues within their libraries. AAHSL directors observed that in both the academic medicine and health sciences library scenarios:

- more effort to relate to our stakeholders (the public, practitioners, patients, users) is needed;

- all need to be more globally minded;

- teaching, research, quality clinical care and providing service will continue to be important, but expecting individuals to be competent in all of them may not be practical;

- teamwork will become ever more important;

- all need to become more "business like";

- the range of institution and library types is likely to become increasingly diverse;

- thinking about the future and finding ways for better predictability will become increasingly important.

Association of Academic Health Sciences Libraries has no immediate plans to further develop these scenarios or to publish additional scenario planning materials. The hope is that other groups may find the list of driving forces, scenarios and plot lines, potential impact on values, staffing, resources, winners and losers, and changes in key partnerships useful in thinking about probable, possible and preferable futures to answer the question, "How do we have to change to be successful in these new worlds?"

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