Alternative Futures for Academic Libraries*

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Abstract

This work summarizes key findings of a futures research project conducted in Spring 2010 for the Association of College and Research Libraries. The researchers created 26 short scenarios on the future of higher education and surveyed academic librarians about their perceptions of probability, impact, speed of change, and threat/opportunity potential of each scenario. They aggregated the judgment of this large group and situated the responses in a "scenario space" visualization tool, which encourages and manages collective imagination.

Keywords: academic libraries, librarians, scenario space, data visualization

Introduction

For academic librarians seeking to demonstrate the value of their libraries to their parent institutions, it is important to understand not only the current climate but also what will be valued in the future so that they can begin to take appropriate action now. Below we present twenty-six possible

* This work summarizes key findings of a futures research project conducted in Spring 2010 for the Association of College and Research Libraries (ACRL). You can find the full report "Futures thinking for academic librarians: Higher education in 2025" online at http://www.acrl.org/ala/mgrps/divs/acrl/issues/value/futures.cfm. ACRL is a division of the American Library Association, which holds copyright of the original work.

scenarios which may have an impact on all types of academic and research libraries over the next fifteen years. The scenarios represent themes relating to academic culture, demographics, distance education, funding, globalization, infrastructure/facilities, libraries, political climate, publishing industry, societal values, students/learning, and technology. They are organized in a "scenario space" visualization tool, reflecting the expert judgment of academic librarians who are members of the Association of College and Research Libraries (ACRL). This tool maps their expectations and perceptions about the probability, impact, speed of change, and threat/opportunity potential of each scenario. Finally, the study draws out implications for academic libraries.

Since April 2009, the Board of Directors ACRL has been working to determine how best to help members demonstrate the value of college and research libraries to the academy. Together with leaders of ACRL, we determined that a 15-year horizon would help academic and research librarians see beyond the worries of this budget cycle and the short-term future to consider, instead, what may happen further down the road, to better anticipate the changing context within which academic librarians will operate, and to make more informed strategic decisions. We expect this research will challenge the mental models of academic librarians. By reflecting on alternate futures, they may see strategic assumptions and values in a new light. We hope this report provides a stimulus for thinking about and managing change differently.

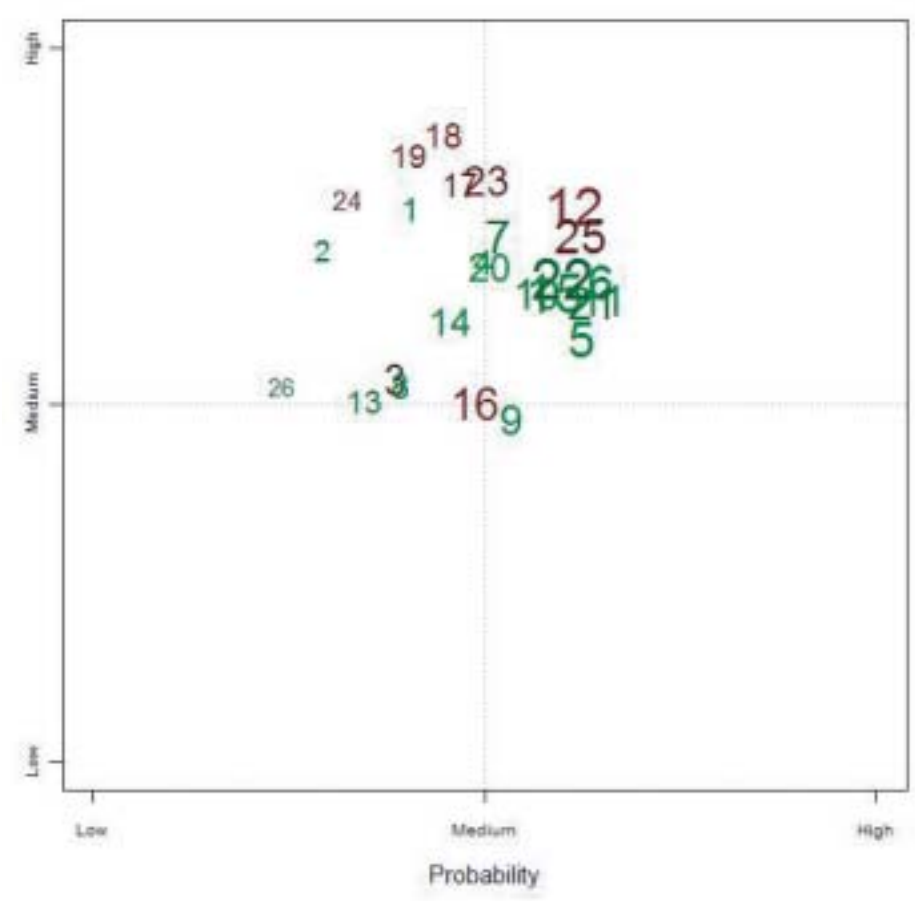
Research on forecasting suggests that foresight processes that aggregate the judgment of large groups of participants, rather than one or two experts, produce more reliable forecasts. Rather than presenting an undifferentiated list of possible scenarios, we are using a visualization tool, developed by Staley (2007 & 2009), which encourages and manages collective imagination. To understand the collective imagination of academic librarians, we developed a survey instrument and invited nearly 2,900 ACRL members to participate. Through this survey instrument, we sought out the expert judgment of ACRL members as to:

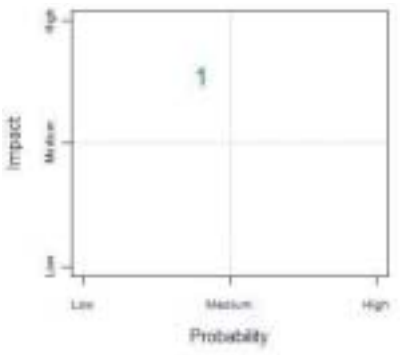
1. The probability that each scenario will occur. (1 Low - 5 High)
   (Note: this is not a statistical probability, but rather a subjective Bayesian probability.[1])
2. The impact of each scenario, if it were to occur, on academic and research libraries. (1 Low - 5 High)
3. The speed at which the scenario is unfolding.
   a. Immediate change: in the next year or is already happening.
   b. 1-3 years, Short term.
   c. 3-10 years, Medium term.
   d. 10-20 years, Long term.
4. Whether the scenario reflects a threat or opportunity to academic libraries.

Each of these variables reflects a dimension of the scenario space. The x-axis equates to the impact of the scenario, the y-axis to the probability. The speed of change is represented by the size of the scenario number. A green-colored number reflects an opportunity, a red-colored number a threat (and various shades in between). The survey results for each numbered scenario are then mapped onto the scenario space. The final result is a map of collective perceptions about the future.

The Scenarios

Graphically represented, then, the scenario space for this project is:



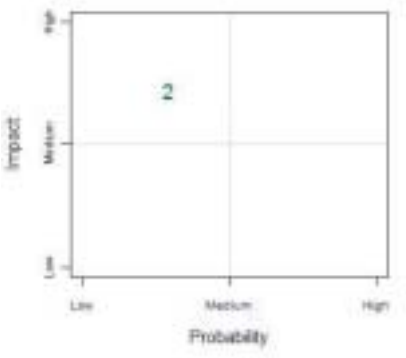


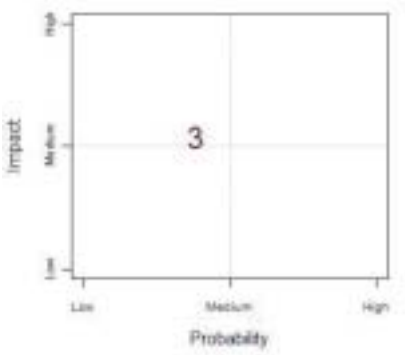
A college degree for every citizen

As expertise is given more credence and peer opinion lessens, the public appreciation for higher education increases. Beyond the thoughtful life of the mind, it is an economic imperative to go to college in order to obtain anything more than a menial job. Education is so valued that the federal government repurposes the Hoover campaign slogan and proposes, "A college degree for every citizen!" spawning a debate about universal higher education.

Academic niche networking

The hyper-specialization of professions has caused a near complete breakdown of traditional academic departments at physical universities. Instead of working with their colleagues on campus at "State U," free agent professors from across the world share ideas in small online communities. Students are only required to take courses in their highly specialized majors.



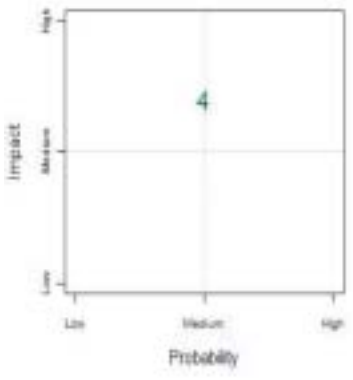


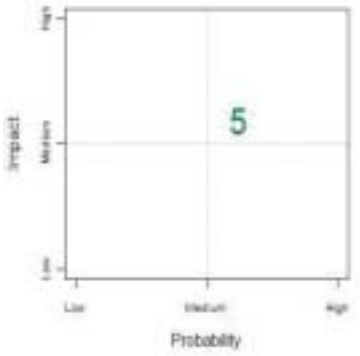
Activist seniors keep on working

Having run headlong into ageism, activist Boomers galvanize around this social justice/discrimination issue. Now routinely in the workplace to the age of 75, seniors demand respect for their years of wisdom. This lends a new tenor in U.S. workplaces , where being young and quick is not the advantage it once was.

Archives on demand

Affordable 3-D printers are ubiquitous, and every teacher, researcher, and student is a manufacturer. History students "print" copies of objects from distant archives and museums to hold and study close up pieces of ancient Rome. In other disciplines, distance education students manufacture a human heart, model of the solar system, and textiles from far-away lands. The study of material culture expands, and the special collections in academic libraries reach new worldwide audiences.



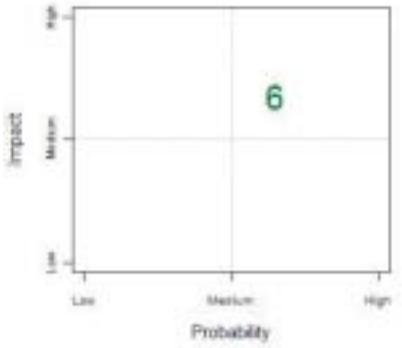


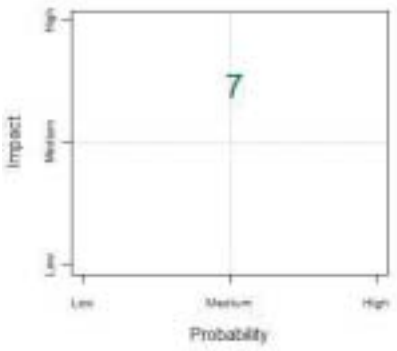
Breaking the textbook monopoly

Most states have passed legislation that requires textbook publishers to make textbooks affordable. Faculty members, sympathetic to their students, have embraced online open educational resources (OER). More faculty create and share openly their course materials, modules, streaming videos, tests, software, and other tools. Although widely accepted seminal OER exist for introductory courses, faculty create materials for advanced courses based on their own knowledge and interests, inviting student contributions.

Bridging the scholar/practitioner divide

Open peer-review becomes the norm for many fields, speeding up application of discoveries. Online publications, by scholarly societies in partnership with trade organizations and professional associations, are open access. They support robust community-based dialogue on articles as soon as they are accepted via traditional editorial procedures. Scholars and practitioners alike discuss the findings, how the theory would apply in practice, and suggest additional research needed.

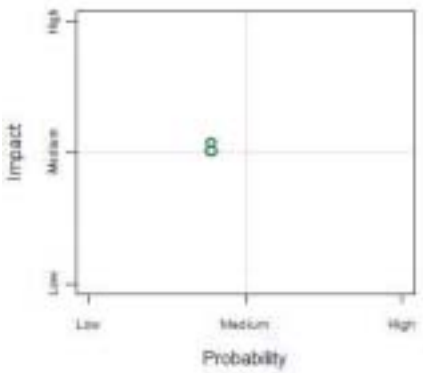




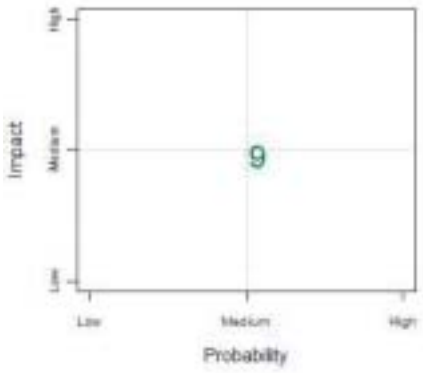
Community over consumerism

In the wake of the Great Recession, the simple living movement is not only a lifestyle choice, but also an economic necessity. Contributing to community is now seen as more valuable than making money. Colleges and universities adopt triple bottom-line accounting to consider financial, human, and environmental costs of their operations as well as contributions to society in these three areas. Students embrace distance education as a way to reduce carbon footprint – attending in-person events a few times a year.

Creative conscription



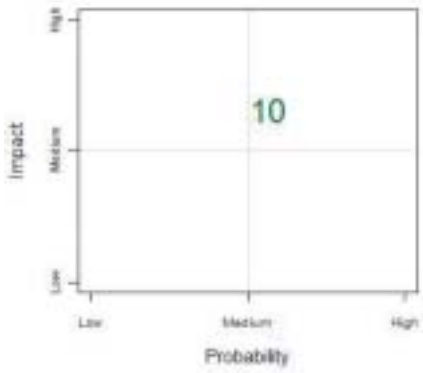
In response to rising innovations outside the United States, the federal government collaborates with the private sector. Private sector companies increase their research and development budgets, and federal agencies aggressively fund applied research in science, engineering, technology, and medicine in the name of national competitiveness. An agency or company recruits and sponsors the top students, as once was common with student athletes or ROTC programs. The students are obligated to give the agency/company six years of service or two patents after graduation.



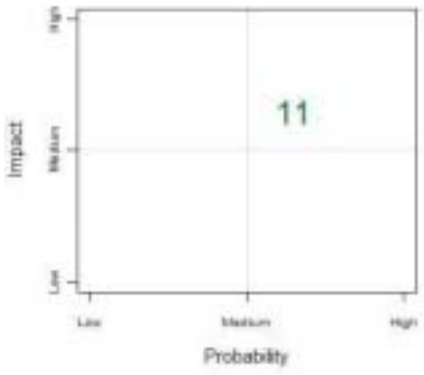
Design for disability

To aid our aging population and others with limited mobility, all new buildings have easy grip doorknobs and push buttons to open automatically all interior doors. Showers in dorm rooms and recreation centers have grip bars, roll in access, fold down benches, and large private dressing areas. Assistive devices retrieve books from high shelves, and computers are routinely outfitted with headphones and text readers.

Everyone is a "non-traditional" student



The interwoven nature of work/life/school is accepted in higher education as life spans increase and students are unable to fund tuition in one lump. Co-op education is widely embraced and faculty increasingly value students' life experience. Knowing what the workforce wants, students are active in designing their own learning outcomes, and the personalized curricula becomes the norm. Faculty evaluate students on demonstrations of learning – such as policy documents, marketing plans, or online tutorials – rather than old measures based on "seat time" and "credit hours."

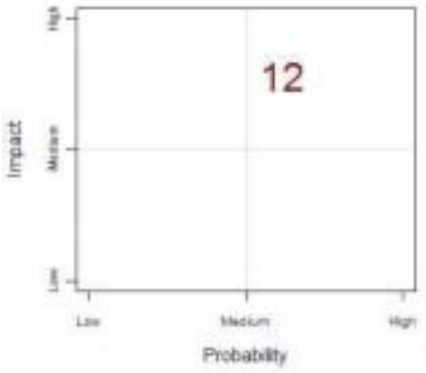


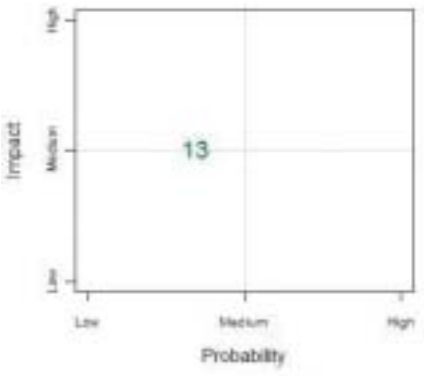
I see what you see

Large touch screen tables positioned beneath cameras and projectors are standard equipment in campus computing labs, local public libraries, and for a fee at stores as photocopiers once were. The tables read and respond to items placed on them, changing distance learning for fields like engineering, GIS, and architecture. Group-designed visual projects happen easily when students are distributed across space as these touch screens allow simultaneous use.

Increasing threat of cyberwar, cybercrime, and cyberterrorism

College/university and library IT systems are the targets of hackers, criminals, and rogue states, disrupting operations for days and weeks at a time. Campus IT professionals seek to protect student records/financial data while at the same time divulging personal viewing habits in compliance with new government regulations. Librarians struggle to maintain patron privacy and face increasing scrutiny and criticism as they seek to preserve online intellectual freedom in this climate.

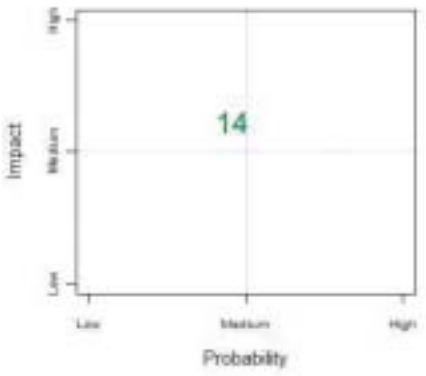




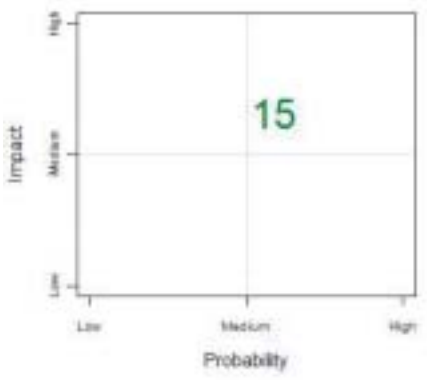
Kinesthetic fluency

Course use of gesture-based computing explodes. Classrooms and study rooms feature handheld devices and dance mats so students can interact through movement with projected images. This is in part because we have come to grips with the detrimental effects of a sedentary lifestyle. Moreover, we now understand more fully the mind-body connection and developing bodily-kinesthetic intelligence is increasingly valued. We learn a wide diversity of subjects differently through movement than we could by listening, speaking, reading, and typing.

Longevity is the new wealth



Taking care of our brains through mental exercise is as important as physical exercise. Seniors pursue passions they previously put off – learning meditation, foreign languages, advances in nutrition, and new technology to stay connected with family and friends. Nomadic in their midlife years, Boomers return "home" to the college campuses of their youths to reside in specially designed communities, complete degrees, find new spouses, and, ultimately, to be buried. Faculty deliver continuing education in assisted living settings as satellite campuses and specially designed distance education for seniors, generating new revenue streams.

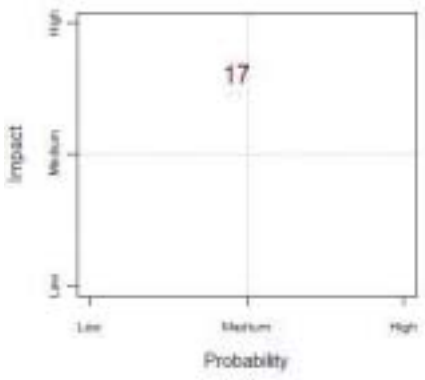


Meet the new freshman class

With laptops in their hands since the age of 18-months old, students who are privileged socially and economically are completely fluent in digital media. For many others, the digital divide, parental unemployment, and the disruption of moving about during the foreclosure crisis of their formative years, means they never became tech savvy. "Remedial" computer and information literacy classes are now *de rigueur*.

Money makes the world go around

Nonprofit colleges and universities have been aggressively generating revenue in novel, and sometimes suspect, ways. They have come under increasing scrutiny from politicians, unions, and community groups, who argue that they have not justified their tax-exempt status based on charitable service to the community. A pending state Supreme Court case, which could revoke the nonprofit status of one college, has sent shock waves through the education community.

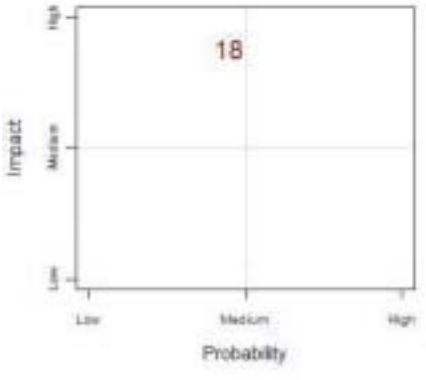


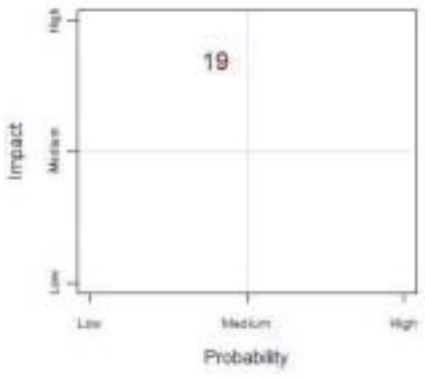
No need to search

Content aware software senses topics as we write and inserts high quality and vetted metadata, citations, and images. Students are media savvy, easily navigating platform to platform to manage visual data and text. They no longer need the skills of acquiring and evaluating information as machines do that work. Instead, they spend time on tasks of synthesis, analysis, and interpretation.

Out of business

As information companies come to dominate the market – providing superior tools and services for students and faculty – the academic library is less visible and less necessary. With only a small user base remaining, colleges and universities outsource many of the remaining functions, as they did with meal service and bookstores earlier. In an era of endless abundance, the curation skills of librarians are still valuable, and they are employed at these companies.

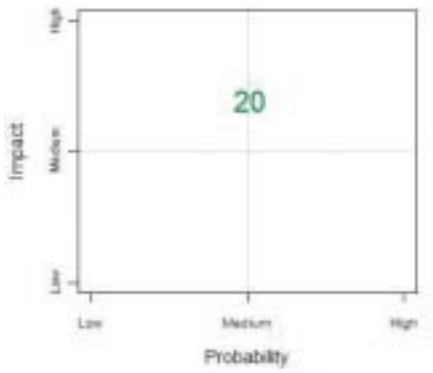




Pop-up campus

Given the explosion of online learning, only a minority of institutions still maintain physical campuses. While all the services and functions remain, "the college" and "the library" exist only virtually, with no physical home. Higher education emulates retail with "pop-up" work/class spaces, used temporarily when students congregate regionally at the beginning of the term. Then the equipment is disassembled and stored until the next need for rental space arises. Faculty and staff work from home-based offices or in rented office space.

Renaissance redux



As in the Renaissance, ideas come forth in exponentially increasing amounts at the crossroads of disciplines. The academy has knocked down the walls of the ivory tower to engage with society. Scholars no longer think that scholarship is divisible – with discovery of new knowledge at the apex. Taking a holistic view, teams consolidate around one knowledge problem, with diverse members – academics, community, politicians, social workers, and other practitioners – bringing expertise from their diverse disciplines and worldviews. These groups yield action-based answers to enduring riddles, such as how to overcome the complex factors that keep diabetes and heart disease rates so high or how to improve air and water quality.

Right here with me

Students "talk" through homework with their handheld devices, which issue alerts when passing a bookstore with material they need to cite. Scanning the title page, this information is instantly embedded in proper citation style with an added endnote. Checking in on location-based services, students locate study team members and hold impromptu meetings without the need for study rooms. Their devices have whiteboards and can share notes with absent members.

Scholarship stultifies

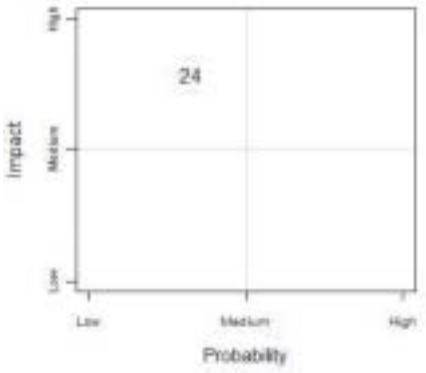
The systems that reward faculty members continue to favor conventionally published research. At the same time, standard dissemination channels – especially the university press – implode. While many academic libraries actively host and support online journals, monographs, and other digital scholarly products, their stature is not great; collegial culture continues to value tradition over anything perceived as risky.

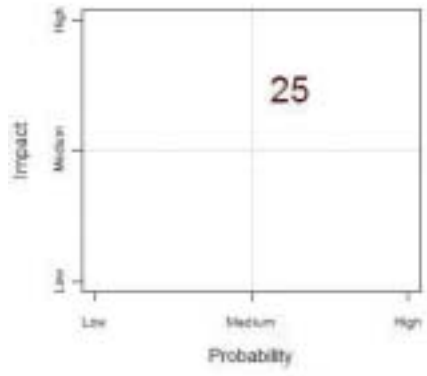
Sign on the dotted line

Tenure is no longer offered to librarians, and most are hired on a contract basis. Incentives to those who generate revenue – by creating new search and research tools that are patented to the university, increasing enrollment/retention, or bringing in grants – include bonuses and longer renewal contracts.

Think U

Most of the knowledge we acquire and convey is of a graphic, schematic, and visual nature. Using teaching techniques of early childhood education, like simulations and play-based learning, we rarely access word-based knowledge. As a high tech oral culture, students master digital storytelling. With our brains no longer making neural pathways to understand written language, we sharpen other skills like sensing and intuition to understand how to relate to others and share ideas.



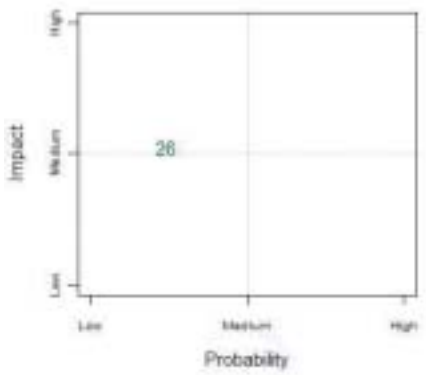


This class brought to you by…

At for profit institutions, education is disaggregated and very competitive. Students no longer graduate from one school, but pick and choose like at a progressive dinner party. Schools increasingly specialize by offering online courses that cater to particular professional groups. Certificate courses explode and are sponsored by vendors of products to particular professions.

Woven learning

Learning is designed holistically, with subjects interwoven and multiple intelligences in mind. We learn experientially – through images, sound, taste, and smell – things we previously learned through text. Learning spaces are transformed so that students can smell census data in an olfactory economics classroom or hear a symphony of health statistics in a medical auditorium.



Key Findings

Nine of the scenarios – scenarios 5, 6, 10, 11, 12, 15, 21, 22, and 25 – were adjudged by the survey participants to be both high impact and high probability and are located in the upper-right quadrant of the scenario space diagram. Additionally, the perceived speed of change for four of these scenarios was judged to be particularly fast:

- INCREASING THREAT OF CYBERWAR, CYBERCRIME, AND CYBERTERRORISM
- MEET THE NEW FRESHMAN CLASS
- RIGHT HERE WITH ME
- SCHOLARSHIP STULTIFIES

These four touched on a variety of themes: academic culture, infrastructure/facilities, political climate, publishing industry, societal values, students/learning, and technology.

We define the space in the upper-right quadrant the area of the "actionable future." That is, if scenarios here are high impact with a high probability of occurring, then it is incumbent upon library directors and those who set strategic agendas for academic libraries to begin to plan to act now upon these scenarios. Given their perceived high probability and high impact, due diligence would mandate that these scenarios guide the current thinking of all strategic planners for academic libraries.

The scenarios in this report are purposefully limited in scope to one element or construct each. It was an important design decision as we were determining the images of the future that ACRL members hold via a survey instrument, not in a focus group where we could ask clarifying questions and probe answers further. We needed to be certain our participants were clear on the element to which we were asking them to respond. The scenarios in this report are, then, short vignettes. They are building blocks for more robust, rich scenarios.

For the nine scenarios appearing in the upper right quadrant, we can identify a few larger themes that could be combined to create "meta scenarios" which would be grouped as follows:

Teaching and learning: Course materials created by faculty are openly shared and students are active in helping to shape them by authoring some of the content (5 BREAKING THE TEXTBOOK MONOPOLY). Students work remotely using large touch screen tables to collaborate on visual projects in new ways (11 I SEE WHAT YOU SEE). Use of mobile devices continues to accelerate, with content aware systems and location-based services changing the ways students accomplish their learning goals (21 RIGHT HERE WITH ME).

Research environment: In some disciplines, open access and open peer review lead to faster application of discoveries and more robust discussion between scholars and practitoners (6 BRIDGING THE SCHOLAR/PRACTITIONER DIVIDE). In others, the systems that reward faculty members continue to favor conventionally published research and collegial culture continues to value tradition over anything perceived as risky (22 SCHOLARSHIP STULTIFIES).

Students: Students float in and out of school, bringing with them vast work and life experience and a desire to design their own learning outcomes and personalized curricula (10 EVERYONE IS A "NON-TRADITIONAL" STUDENT). Socio-economic stratification increases and the digital divide widens (15 MEET THE NEW FRESHMAN CLASS).

Campus culture: Hackers, criminals, and rogue states, disrupting operations for days and weeks at a time, leaving campus IT professionals to comply with new government regulations that may compromise student privacy and intellectual freedom (12 INCREASING THREAT OF CYBERWAR, CYBERCRIME, AND CYBERTERRORISM). Increased free market approaches to higher education lead to disaggregation, increased competition, and corporate sponsorship (25 THIS CLASS BROUGHT TO YOU BY…).

Eleven of the scenarios – 1, 2, 4, 7, 14, 17, 18, 19, 20, 23, and 24 – were located in the upper left-hand quadrant of the scenario space diagram. Three of the scenarios – COMMUNITY OVER CONSUMERISM, LONGEVITY IS THE NEW WEALTH, and SIGN ON THE DOTTED line

– were identified as particularly fast changes. We identify scenarios in this quadrant as wild cards or Black Swans, scenarios with low probability of occurring but with potentially significant impact on academic libraries were they to occur. These are the events on the periphery of the actionable future (Bazerman & Watkins, 2004; Day & Schoemaker, 2006; Ramo, 2009; Taleb, 2007). Because they were perceived by the survey participants to be of lower probability, we do not recommend that academic libraries devote time, resources, and staffing to leveraging these trends at this moment. However, we do recommend that strategic planners keep these scenarios within their strategic peripheral vision. When we say that "we never saw it coming," that is often because we lack a mechanism to imagine and conceptually manage these unforeseen strategic surprises. In having identified these scenarios as in the wild card region of the scenario space, library directors have now made strategically visible these unforeseen changes. Scenarios in this region represent important emerging issues and are distant signals of the changes that could come.

Conclusion

We hope this report plays a guiding role in helping college and research librarians make sense of the myriad possibilities emerging in the many systems of which academic libraries are part. It is noteworthy that participants viewed nearly all 26 scenarios as having above average impact, thus appearing in the upper two quadrants. Given the role that external factors can play in affecting libraries, this reinforces the notion that academic libraries are part of a larger ecosystem. Academic librarians should be consistently scanning the environment to look for signs of the changes that may come from outside the library and outside the academy.

Because it maps perceptions of potential futures, the scenario space is not a static document. Scenarios can shift positions and move about the scenario space, as new data are uncovered and as the external environment changes over time. We recommend, therefore, that readers continue to return to this document and note if any or all of the scenarios occupy a new position within the scenario space. Readers should especially note if they perceive the wild card scenarios have in any way changed position in the scenario space, meaning that changes have occurred in the external environment that make the scenario seem more probable to occur. Like our ocular peripheral vision, this “strategic peripheral vision” helps us avoid being blindsided by surprises.

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Notes

1. Bayesian probabilities are based on expert judgment, are "a measure of a state of knowledge," and are "a measure of the plausibility of an event given incomplete knowledge." See Charles Annis, "Bayesian Thinking," retrieved November 22, 2010, from http://www.statisticalengineering.com/bayes_ thinking.htm

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