The Future of
Academic Libraries

El futuro de las bibliotecas académicas

Joachim Schöpfel[*]

Abstract

This article discusses various aspects of the history and survival of libraries, thanks to their adaptability, diversity and variability as well as their future viewed from the past due to: the rapid growth of content, development of new services increasingly oriented to the user, impressive technological changes, creation of new job profiles, virtualization of their user communities, content production and globalization. It also shows the existence of several futures based on a SWOT analysis and changes in key functions such as acquisitions, gateways to information and its preservation, some positive and negative points that depend largely on the academic institutions they serve, management of new content (in particular the impact of the Internet, the preservation of heritage material and data management), its new involvement in the information value chain (such as hosting and management of repositories, knowledge management, evaluation of research and text and data mining) among others. It concludes with several important questions that need to be addressed to reach some conclusions of their possible future.

KEYWORDS: academic libraries, future, new contents, information value chain

Resumen

Este artículo aborda varios aspectos sobre la historia y supervivencia de las bibliotecas, gracias a su adaptabilidad, diversidad y variabilidad, así como su futuro a partir del pasado debido a: el rápido crecimiento de los contenidos, el desarrollo de nuevos servicios orientados cada vez más al usuario, los impresionantes cambios tecnológicos, la creación de nuevos perfiles laborales, la virtualización de sus comunidades de usuarios, la producción de contenidos y la globalización. Asimismo, presenta la existencia de varios futuros con base en un análisis de FODA y los cambios en funciones primordiales, tales como: adquisiciones, portales de acceso a la información y su preservación, algunos puntos positivos y negativos que dependen en gran parte de las instituciones académicas a las cuales sirven, el manejo de los nuevos contenidos (en particular, el impacto de Internet, la preservación del material histórico y el manejo de datos específicos), su nueva participación en la cadena de valor de la información (como el alojamiento y administración de repositorios, la administración del conocimiento, la evaluación de la investigación y la minería de textos y datos) entre otros aspectos. Finaliza con varias preguntas importantes que tendrán que formularse para llegar a algunas conclusiones de su posible futuro.

PALABRAS CLAVE: bibliotecas académicas, futuro, nuevos contenidos, cadena de valor de la información

[*] Senior lecturer in Library and Information Sciences (LIS) at the University of Lille 3, Director of the French digitization centre for PhD theses (ANRT) and member of the GERiiCO research laboratory (culture, communication, information, document). Charles de Gaulle University Lille 3, ANRT - GERiiCO laboratory, BP 60149, 59653 Villeneuve d'Ascq Cedex, France. Correo electrónico: joachim.schopfel@univ-lille3.fr. Página en LinkedIn: http://www.linkedin.com/in/schopfel. Publicaciones en CiteULike: http://www.citeulike.org/user/Schopfel/publications

On history and survival

*T*he Danish Nobel prize-winner Niels Bohr once said: "prediction is very difficult, especially about the future". His quotation should remind us, in times of Mayan calendar prophecies, to be cautious with easy predictions, be they about the end of the world, about the winner of the 2014 Brazil World Cup, or about the future of academic libraries. Nobody can tell with confidence what the future will be made of, for the simple reason that nobody has been there before. But even without reading in the coffee grounds or from the Tarot cards, we can make a guess about what the future could, or should be.

Figure 1: Mayan calendar (source: http://www.historik.de)

The first thing we can say with certitude is that libraries look back on a long history. As this paper is not about the past but about the future, it may be enough to remember that since the ancient libraries of Ashurbanipal, Alexandria or Pergamum, the concept of library as a cultural institution has survived many political, economic, cultural and technological revolutions and other disasters. In particular, they have survived the Gutenberg press and more recently, informatics and the personal computer. Today, it seems that the Gutenberg galaxy has come to an end and that new information technologies and behaviours, such as mobiles, cloud computing and digital nomads will challenge libraries. In this fast moving environment, what will be the future of academic libraries? Will they survive?

Now, in natural and human history the survivor is not necessarily the fittest and strongest type or species but the one who adapts best. Dinosaurs were not worse on future prediction than insects but adapted less well. So, my preliminary remark would be that if academic libraries survive in the 21st century, the reason will not be that they represent the very best and finest and definitive model of scientific communication but because they are flexible and able to take on the colours of their environment, just like chameleons. The velocity of academic libraries that invaded the Web 2.0 landscape and adopted its paradigms is a recent example for this great capacity of adaptation.

Another argument in favour of their survival is their amazing diversity and variability. Variability is essential to survival, especially in unstable and fast-changing environments. Even if today we don't know which model will survive, the high-tech learning centre, the digital library in the clouds, the small and highly specialised research library, or the library guardian of heritage collections, we can be confident that at least some of them will still be there in twenty, thirty or even fifty years, offering as before (but not the same) high quality services to their patrons and communities. Also, we can be sure that academic libraries will have by then generated new models and initiatives, and that conferences like ICUL at UNAM will certainly discuss case studies and experiments that we cannot imagine today.

For our purpose this means that even if prediction about the future may be rather difficult, academic libraries have shown in the past and until today their adaptability and variability and this will probably be the best guarantee and key for survival.
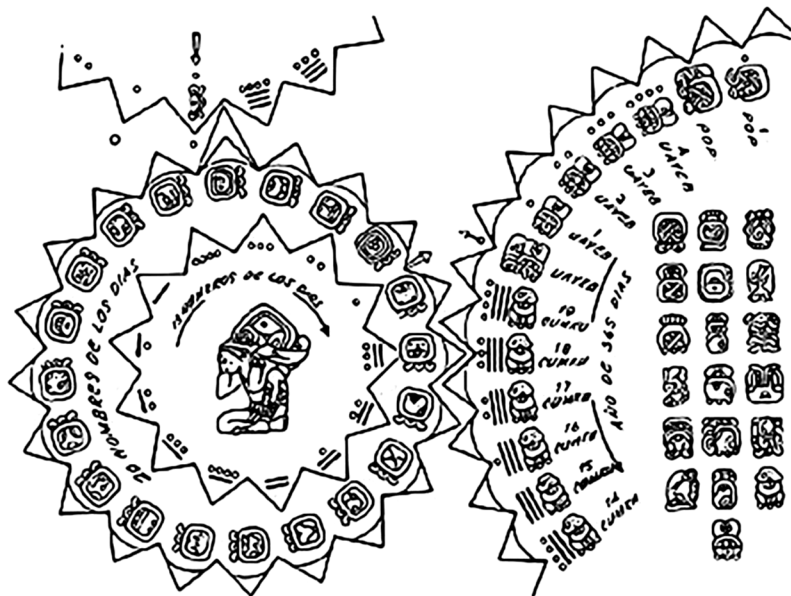
Figure 2: Word cloud of articles on the future of libraries.[1]

The future, viewed from the past

Librarians have always worried about the future. A simple search on the EmeraldInsight platform produces more than 100 journal articles explicitly committed to the future of libraries, mainly from the late 1980's on. Even if these studies cover a wide range of subjects, some are more or less recurrent and reflect how former LIS professionals and scholars thought about their future, which means: our present.

First of all, experts were conscious about the rapid growth of content. More and more items were expected to be published and disseminated, and these items were expected to be more and more different, in terms of support, format and typology. The impact on libraries was anticipated in two different ways: an increasing workload for the processing of these items, and the shift of the core activity from the book to information and knowledge, i.e. increasing added value for the end user.

Another relevant prediction was about the development of new, quality services, with the focus moving from traditional goals and missions to the information needs and practices of the end user and the community.

The third and perhaps most simple prediction was that the major changes would be technology-driven. In other words, libraries were seen as being in need of adaptation, not as a driving force or "spearhead" but more so as "victims" of new technology and running a double risk of being unable to keep pace with progress and customers' needs, and losing their soul.

The fourth main element of prediction concerned the need for change of management and the development of new job skills and profiles, such as the new job of the digital librarian.

---

1   The word cloud is extracted from BROADY-PRESTON, Judith y COX, Andrew. *The Public Library as Street Corner University: back to the future?;* CUADRA, Carlos A. *The Local Electronic Library: science fiction or the real future?;* DOWLER, Lawrence and FARWELL, Laura. *The Gateway: A Bridge to the Library of the Future;* DRABENSTOTT, Jon, y otros. *Designing Library Facilities for a High-Tech Future*; MCDEVITT, Phillip. *The Future Library*; MORALES, Estela. *The Future of the Library: a view from Mexico*; MURR, Lawrence E., WILLIAMS, James B. *The Roles of the Future Library;* NIELS, Mara. *Politics of the Library of the Future;* PATON, William B. *The Library of the Future;* WINZENRIED, Arthur, MIIDO, Helis. *The Librarian and the Library User: what the future holds.*

However, other issues were rather weak signals, on the edge or even outside of the field of prediction. We can cite at least three less anticipated developments, at least before they were at the door of the libraries:

1. Virtualization of community: the desertion of reading rooms, the "remote" use of library services, and in particular the library 2.0 concept.
2. Content production: the changing value chain of scientific communication, where the academic libraries will move from acquisition and conservation to production and publishing of content.
3. Globalization: the libraries' role in the society, and the impact of the major challenge of society, *i.e.* sustainable development, on the marketing, management and functioning of libraries.

Of course, it is easy to criticize the accuracy of past predictions. As a general rule, new generations always know better than the older. Probably, our generation will not be better at predicting the future than they were. But where are we now? What can we say about our own future, about the future of academic libraries, from our viewpoint and experience as LIS professionals and scientific users?

Not one but many futures

In fact, speaking about *the* future of academic libraries may be improper and misleading in so far as there probably is not one but many futures, because of the great adaptability and variability of the concept. One size does not fit all, and variability is a key for survival, as already mentioned above, especially in a complex and dynamic environment.

It may be helpful to summarize from literature[2] and experience some factors that will foster or hinder the development of academic libraries. Figure 3 presents some of these factors as a SWOT grid.

---

[2] See for instance *Libraries and Society: role, responsibility and future in an age of change.* Edited by David Baker and Wendy Evans, and *The Future of Scholarly Communication.* Deborah Shorley, Michael Jubb, editors, 2013

• Capacity of adaption • Knowledge of users • Physical space • Networking	• Focus on collection • Splendid isolation • Weak marketing • Image, lobbying
• Open access • Open data • Digital divide • Development of campus	• Budget cuts • Desintermediation • Lacking support from scientific community

Figure 3: A strategic analysis of academic libraries (from top left to bottom right: strengths, weaknesses, opportunities and threats)

Of course, figure 3 is all but exhaustive or complete and will not replace an in-depth strategic analysis of academic libraries. Nevertheless, it helps to show some perspectives for development and, also, different aspects libraries should deal with carefully and with caution.

- *Strengths:* Apart from their adaptability, their excellent knowledge of the information behaviours and needs of the scientific communities is a key element for future development. Other positive factors are their physical space that can become an asset for the development of new services (see below), and their long tradition with networking and exchange on experiences and projects.

- *Weaknesses:* Too much focussing on collections may not be useful when it comes to adopting a user- and community-centred approach. Sometimes, academic libraries, in spite of their excellent knowledge of their communities appear rather isolated, with weak marketing and low image. Even with a public mission of culture, education and research, academic libraries should not forget that they need more than ever successful lobbying and marketing in order to develop their service offer.

- *Opportunities:* All new developments of the campus and in the scientific environment are opportunities and options for the future.

The rapid development of open access publishing and the dissemination of research data offer several opportunities for new services where the academic libraries can add value to scientific communication. Also, the digital divide and the need for information literacy, free and equal access to information, and for availability and uptake of information technology, is a challenge for academic libraries, especially in emerging and developing countries.

- *Threats:* Even if changing environments always threaten the status quo of institutions, the actual risks for academic libraries appear to be budget cuts (and transfer of information funding to other structures), together with increasing disintermediation and lack of support by their scientific communities, which may be related to weak lobbying and marketing.

This is the time to take a short break to remind ourselves of the main traditional functions of academic libraries, *i.e.* acquisition of documents (buyer), as a gateway to documents and preservation of these items. For a couple of years now, these functions have started to change:

- *Acquisition:* The part of scientific information that academic libraries (can) buy is continuously decreasing because of the exponential growth of scientific publications, because of Internet and open access, and because of limited budgets. Yet, who will guarantee quality, richness and variety of content and support, who will make selections and prevent information overload? In other words, who will build collections in line with the needs of scientific communities? Will the acquisition function partly be made of author processing charges (ACP) for gold road open access journals?
- *Gateway:* Because of powerful search engines, discovery tools, social networks etc., the library is seen less and less as a "gateway" or starting point for locating information.[3] Yet, who will manage the digital rights for those items protected by intellectual property? Who will provide access to "hidden" material that is not disseminated on Internet?
- *Preservation:* Acquisition and subscription to documents are substituted with temporary access to online resources. Who will guarantee long-term conservation and availability of these resources? Who will preserve grey literature, data, and non-digital resources?

Given these challenges, academic libraries are in competition with other institutions and organisations, although they have some interesting assets and options that may co-determine their future.

For better and for worse

The future of the academic libraries is on the campus. It depends on the future of the university. Like an old couple, their fates are closely related, for better or for worse. The university's strategic decisions determine the library's degree of freedom. What is good for the university, its staff, scholars, students, scientists and partners, becomes a priority for the library. One cannot imagine the future of academic libraries without taking into account their immediate environment, their academic stakeholders, donors, content providers and customers on the campus.

First of all, this means that there cannot be one and only one model for academic libraries. Universities are different one from the other. Not all have Nobel laureates or Fields medallists among their staff or alumni, and the number of highly cited researchers, highly ranked papers and staff varies from campus to campus. Again, one size does not fit all. A research university does not produce and consume scientific information in the same way as a technological university or a state university with focus on education and learning. The aca-

---

[3] Tenopir, Carol. The Value Gap.

demic libraries must provide information content and services in line with the specific needs and practices of their communities. Their main question must be: "What is my added value for education and research?" And the answer must be a specific value proposition, not a general or standard offer.

The second observation is that this value proposition must include more than information and documentation. Each university conducts its own policy with respect to society, culture, ecology and economy. Part of the campus, academic libraries are expected to contribute to these projects and actions. In particular, today the performance of a university is also measured in terms of the students' vocational integration. Do the students find work easily, or is it that the university generates unemployed people? For academic libraries, the question is not *if* they can yes or no help to reach this objective, but only *how* they can contribute, beyond education and research.[4]

Third comment: in spite of all the differences, academic communities and institutions mostly share some common values and ethics, such as scientific freedom, integrity, excellence and humanism. Librarians have a long tradition with values and ethics, as the 2012 IFLA Code of Ethics for Librarians and other Information Workers reminds us: "Librarianship is, in its very essence, an ethical activity embodying a value-rich approach to professional work with information."[5] In a context where political and economic interests are not always supportive of such ethics, academic libraries can take a leadership in defending and claiming these fundamental scientific and democratic values.[6]

---

4   *Favoriser la réussite des étudiants.* Sous la dir. de Carine Elbekri-Dinoird.

5   Federación Internacional de Asociaciones de Bibliotecarios e Instituciones. *IFLA Code of Ethics for Librarians and other Information Workers.*

6   FOSTER, Catherine, MCMENEMY, David. Do Librarians Have a Shared Set of Values?: A comparative study of 36 codes of ethics based on Gorman's Enduring Values.

Handling new content

The holdings of academic libraries are extremely rich, covering the whole range of scientific production, monographs and journals, proceedings, theses and dissertations, working papers, project reports and unpublished material, and also photographs, maps, audiovisual material, manuscripts, letters, rare and precious old documents etc. The capacity to manage all these items and to make them available for the scientific communities is one of the strong points of the academic library staff, and there is no reason why this should change in the future.

Yet, we can identify at least three different developments that will increasingly challenge academic libraries from now on, *i.e.* openly available content on Internet, scientific and cultural heritage material, and research data.

Internet: More and more scientific content is freely available on Internet, through institutional repositories (green road) or open journals (gold road), via social networks, wikis, blogs, personal websites, etc. Together with the rapidly growing number of articles and books published and disseminated via the traditional channels of scientific communication, this situation bears the risk of information overload and moreover, because of partly lacking validation or labelling, of information pollution. The challenge for the academic libraries is twofold: provide discovery tools for effective and efficient item selection, and propose a selection in line with the needs of its scientific communities and with a quality guarantee. Both tasks are not really new for academic librarians. Yet, today they must (at least, partly) shift from acquisition policy to a kind of Web intelligence, and from catalogue and database production to the curation and tagging of web resources.

Heritage: Most academic libraries possess some kind of unique material, be it already in the public or not. Today, the scientific communities, also the governments, research organisations, and funding bodies want these often hidden materials to be uncovered and made available, as primary source for further research but also as witness and evidence of past research, culture

and history. For academic libraries, the challenge here is to identify this material, to set up, fund and manage digitization projects, and to handle sometimes rather complex questions of intellectual property, digitization, metadata, platform, access rights and so on.

Data: Scientists and computer specialists have been announcing for a couple of years now the fourth paradigm of science, which means data-intensive scientific discovery and the possibility to disseminate scientific results without traditional publications.[7] Academic libraries face three challenges: collect and preserve these new digital objects on specific platforms, with a specific service environment; create and manage metadata and identifiers for all kinds of datasets; and connect datasets and publications.[8] Academic libraries have already begun to invest this new field.[9] However, as data are not just data, and STM are not like SS&H, it may be that in the future, the fourth challenge will be to handle both big and small data, *i.e.* data produced massively, in standard formats and by big scientific facilities or networks, together with small datasets produced by individual researchers, small research teams, heterogeneous by definition, such as datasets, AV files and other material submitted together with PhD theses in Social Sciences and Humanities.

Will the academic libraries be able to do the splits between traditional activities and new challenges? Will they be able to meet all challenges at the same time? Or will the complexity of the new tasks push academic libraries to more specialisation; so that some will curate datasets while others put the focus on digital libraries or discovery tools and web indexing?

Moving along the value chain

The traditional function of the academic library is selection and acquisition of content, at the end of the value chain of scientific information, with the objective to make this content available to the researcher as end-user. Compliant with the usual business model of commercial and learned society publishing, this position in the value chain has started to change with the introduction of new business models and forms of scientific communication.

The Dutch economist Hans Roosendaal and his colleagues have described how new technologies and information vectors push the institutions and organisations to experiment new business models, with different value chains unknown up to now.[10] In particular, they studied models where academic libraries move along the value chain, from selection and acquisition (downstream) to production and dissemination (upstream). As they put it: "the major organisation challenge will be to absorb the library into the research organisation (…) The main tasks of the library will continue to exist (while) new tasks will have to be developed, such as information creation and tasks related to required technical competence, new interfaces and new service providers".[11]

This new function will most often be related to the hosting and management of institutional repositories or other document servers. In this role, academic libraries will take over some of the publishers' traditional activities, such as handling intellectual property rights (together with legal advice), managing deposits (format control, versioning…).

Often, this editorial function will include some kind of selection and quality control; sometimes, this selection process may be separated from dissemination and appear "downstream", for instance as post-deposit peer review or other, alternative forms of commenting and tagging. Sometimes, too, the academic libraries will develop new services related not, as before, to their acquisition and gateway function, but to the production and dissemination of content, such as attribution of unique identifiers, web analytics and usage statistics with options for altmetrics, export and exploitation of publication files for scientometrics and evaluation, etc.

7   *The Fourth Paradigm: Data-intensive scientific discovery.* Edited by Tony Hey, Stewart Tansley and Kristin Tolle.

8   Hey, Tony, Hey, Jessie. e-Science and its implications for the library community.

9   BRASE, Jan, FARQUHAR, Adam. Access to Research Data.

10 Changes in the Value Chain of Scientific Information: economic consequences for academic institutions. Hans E. Roosendaal, and *Scientific Publishing: From Vanity to Strategy.* Hans E. Roosendaal, y otros.

11 *Scientific Publishing: From Vanity to Strategy, op. cit.,* p.136-137.

We cannot, in a short communication, cite all examples where academic libraries move into new fields of action, with new functions and roles, and with new positions in the value chain of scientific information.[12] What is important, yet, is to understand that these changes and this questioning of the traditional value chain is not a kind of flash in the pan but is meant to stay. Again, this new situation requires a capacity we already mentioned above: flexibility, adaptability, the capacity (and the motivation) to try and to experience. The future will surely not be a kind of "return to paradise" where all things are in their place, but rather a game with uncertainty and incitation to test.

I will finish with two particular developments, even if it may be too early to define the specific role of academic libraries. Nevertheless, it is obvious that they are not in their usual position in the traditional value chain.

The first development is knowledge management, a service complementary to (or in the place of) the management of books and journals. Academic libraries are interested in semantics, text and data mining, ontologies and so on. Will they be able to transform this interest in a genuine service offering?

The second development is the contribution of academic libraries to current research information systems (CRIS), i.e. evaluation and management of research. How will they connect their data silos of records and full text? Will they do more than export records, identifiers, etc., to such CRIS?

My personal conviction is that to both questions, the future will give an affirmative answer. Yes, academic libraries will do text and data mining, and yes, they will be active partners of CRIS infrastructures. In both cases, they quit their usually attributed place in the value chain, from downstream to upstream, from acquisition to production,

and in both cases, formerly peripheral and complementary services may become part of the core service offer.

A good place

Most often, academic libraries are not virtual or in the clouds but real places, buildings with a given number of more or less useful square metres.[13] On most campuses, a square metre is a rare and wanted item. Today, students and staff go to libraries less than before, and this puts libraries at risk. So why not redesign their physical space and create a good place where students and staff would love to go and spend time, even if they do not want to read books or journals?

In fact, more and more libraries have already created such space, based on the concept of learning centres. In short, a learning centre is a building or rather, an innovative architecture that provides "a seamless network of services, libraries, information gathering, social spaces, spaces to study, restaurants, cafes and beautiful outdoor spaces".[14]

A place to work alone or in a group, to learn, read, surf, eat and drink, relax, or even do nothing. Yet, a place connected to the world, to others, to Internet and social networks, a resourceful place, with access to documents, hard- and software, assistance, help and advice. A "third place" compliant with Ray Oldenburg's description: welcoming and comfortable, highly accessible, free or inexpensive, with food and drink, and with regulars such as staff.[15]

Make the academic libraries look like a Starbucks may not be realistic in all cases, yet one should keep the principle in mind: to provide a place that people will like on Facebook, a caring environment that they will

---

[12] See for instance the Library Publishing Coalition (LPC) with more than 50 local initiatives (October 2013): "Based on core library values, our mission is to foster collaboration, share knowledge and develop common practices, all in the service of publishing and distributing academic and scholarly works". <http://www.librarypublishing.org/>

[13] See Rizzo, Joseph C. Finding your Place in the Information Age Library.

[14] Rolex Learning Center at Lausanne, Switzerland <http://rolexlearningcenter.epfl.ch/page-34751-en.html>

[15] Oldenburg, Ray. *The Great Good Place: cafés, coffee shops, community centers, beauty parlors, general stores, bars, hangouts, and how they get you through the day.*

support, where they will return because they know they will have a good time and find what they want. For libraries, this may also mean to welcome "non-optimal users", students that don't know how (or don't want) to behave like a usual library patron. Academic libraries will have to adapt to these new generations, and will be able to do so.

While speaking of useful space and third place, it may be interesting for the academic libraries to learn from other concepts, such as the community offices[16] that are to provide support to local initiatives and groups who work in a community development context (with mentoring and consultancy, training and capacity building, skills training, best practices etc.), or the co-working[17] that puts the focus on a shared working environment (office), shared values and the establishment of a co-working community. These, together with idea stores, information commons, etc., are social developments in the community that will be extremely interesting for academic libraries in the future, especially with respect to their social outreach and their contribution to the students' vocational success (see above).

In the heart of society

"Meeting the needs of the present without compromising the ability of future generations to meet their own needs"[18] – does sustainable development matter to libraries? Librarians may be committed to ecology and environment. Yet, the literature about the future of academic libraries most often deals with modern information and communication technologies, business models and society. That is not wrong, but it is not enough. Our proposal is to put the concept of sus-

tainable development at the heart of libraries and to adopt the international action plan called Agenda 21 as a framework for library research and development.[19]

Sustainable development is on mankind's agenda. The United Nations action plan Agenda 21 is clear on one point. The solution cannot be found on the local level; though without local action, there will be no global solution. Twenty years after the Rio Earth summit, the mandate of the academic libraries should no longer be confined to traditional concerns about collection preservation or helpdesk assistance, but should also include a contribution to sustainable development. Thus, our proposal is to apply the Agenda 21 to library marketing and management, as a conceptual framework to evaluate, set goals and make decisions in libraries and information services. Not so much to reinvent libraries, but to rethink their way of working, their projects and objectives, in terms of sustainable development – this is the next challenge for library marketing and management.

Academic libraries are scientific and cultural institutions, supporting education and research, but there is more than that – they are also part of the local campus and, like any other service, potential contributors to the sustainable development of society and mankind, and should be evaluated within this framework. The Rio+20 United Nations Conference on Sustainable Development 2012, twenty years after the first Earth Summit, reminds us that "sustainable development emphasizes a holistic, equitable and far-sighted approach to decision-making at all levels. (...) It rests on integration and a balanced consideration of social, economic and environmental goals and objectives in both public and private decision-making."[20]

Academic libraries are but a small piece on the global game field. Yet they are part of the game, and society needs their specific contribution for sustainable development.[21] The growing numbers of green academic

---

[16] PRICE, Michael. The Community Office: A logical extension of the electronic library.

[17] CUMLEY 2013, MUHRBECK, Anton, WALLER, Richard, BERGLUND, Martin. *Coworking: A Creative Workspace., Parrino, Lucia. Coworking: assessing the role of proximity in knowledge exchange.*

[18] Naciones Unidas. Asamblea General. 42/187: *Report of the World Commission on Environment and Development* [en línea]. <http://www.un.org/documents/ga/res/42/ares42-187.htm>

[19] SCHÖPFEL, Joachim, McKiernan, Gerry. Towards the Global Library – Applying the Agenda 21 to Library Marketing.

[20] <http://www.uncsd2012.org/index.php?menu=62>

[21] JANKOWSKA, María Anna, MARCUM, James W. Sustainability Challenge for Academic Libraries: Planning for the Future.

libraries show the way and may serve as models. Yet, sustainable development asks for more, and academic libraries will need to learn new concepts such as social responsibility, accountability and contingent valuation as frameworks for further evolution.[22] They have already started to move in this direction, with concepts such as the lifelong library with independent learning provision and knowledge flows "just in case" and "just in time".[23]

Trying the smart library?

Our environment is becoming increasingly urbanized, and the city may be the future of mankind. Our highly urbanized and connected culture gave birth, a couple of years ago, to a new concept of urbanism, called the intelligent or smart city.[24]

Smart city stands for a comprehensive framework of urban policy and governance, innovation and infrastructure, modern information and communication technologies and connectedness, economic competition and individual lifestyle, and sustainable development.

This mixture of different dimensions centred on information technologies, mobility, digital nomads, and local community makes the concept relevant for the discussion on the future of academic libraries. At least, the concept of the smart city may be helpful and stimulating to consider the functioning and future options of academic libraries from "outside", as a challenge for innovative concepts, based on local resources and history but at the same time, experimenting with new digital services, instigating (not only suffering!) new uses of information and knowledge, and combining data management and grid architecture with modern lifestyle.

This, together with the mobilization of the community around such a project, must appear familiar to those, librarians or scientists, interested and engaged in the future of academic libraries. Perhaps it is still too early to develop a consistent concept of the *smart academic library,* a library that is social, open, digital, connected, mobile, networking, a virtual space and at the same time, a good place to live and to learn and to work. But I admit that among all options, this is the one that I prefer and moreover, that I think is the most likely. We should work on it.

Good for walking

Some topics mentioned above may be rather familiar to academic librarians, while others may appear less obvious and perhaps even unrealistic and utopian. But as Eduardo Galeano said a couple of years ago, utopia is good for walking even if it is not sure at all to reach her one-day.[25]

"If libraries did not exist, would someone invent them?"[26] It may be that the good questions about the future of academic libraries are not what the future will be (no one really knows) or which options seem to be more likely than others, but if you and all of us take time for the future, and if we are able to set aside time to prepare the future, instead of (only and always) doing routine work, can you imagine life without Mozart? But what about life without libraries? Can you image science without a library? Would you be the one to invent libraries?

What are your five selling points? What value does your library add to the academic campus, to education and research? Who are your "customers", why do they use your services? How do you think your library will develop in the next five years? How should it develop? Where are your models and examples that frame your decisions? Do you think global? And would you like to speak of your library

[22] See for instance Baptista Melo, Luiza and Pacheco Pires, Cesaltina. Measuring the Economic Value of the Electronic Scientific Information Services in Portuguese Academic Libraries; Missingham, Roxanne. Libraries and Economic value a Review of Recent Studies; Tenopir, Carol. *University Investment in the Library, Phase II* [en línea]: *An International Study of the Library's Value to the Grant Process.*

[23] DOLAN, J. From People Flows to Knowledge Flows. En: *Libraries and society: role, responsibility and future in an age of change.* Edited by David Baker and Wendy Evans.

[24] HOLLANDS, Robert G. Will the Real Smart City Please Stand Up?; Nam, Taewoo, Pardo, Theresa. Smart City as Urban Innovation: focusing on management, policy, and context.

[25] GALEANO, Eduardo. *Walking Words,* p. 326

[26] BATT, C. Library 2050, p. 400

Figure 4: Sisyphus (source: http://commons.wikimedia.org)

as a smart library, connected, part of a grid, useful, innovative, creative, user-centred, and urban?

It may not be easy to find time for the future, while struggling hard every day with budget cuts, IT failures, overdue items, claims and invoices. Also, academic communities are not always really supportive and do not always understand the problems and projects of librarians; and new generations are what they are. Yet, as we all have been raised in some way or other with 20th century existential thinking, I would like to add that the struggle itself is enough to fill a man's (and a woman's) heart and that, adapting the famous quotation of Albert Camus, we therefore should imagine the academic librarian happy. ☙

Postscript: Keep your critical mind. "Experts are often overconfident… Their failures reflect the basic unpredictability of the events they try to forecast… (and) some environments are worse than irregular".[27]

---

[27] KAHNEMAN, Daniel. *Thinking, Fast and Slow.*

RESOURCES

BAPTISTA MELO, Luiza and PACHECO PIRES, Cesaltina. Measuring the Economic Value of the Electronic Scientific Information Services in Portuguese Academic Libraries. *Journal of Librarianship and Information Science,* 2011, vol. 43, no. 3, p. 146-156.

BATT, C. Library 2050. En: *Libraries and Society: role, responsibility and future in an age of change.* Edited by David Baker and Wendy Evans. Oxford: Chandos, 2011, p. 399-416.

BRASE, Jan, FARQUHAR, Adam. Access to Research Data. *D-Lib Magazine,* 2011, vol. 17, no. 1 / 2.

BROADY-PRESTON, Judith y COX, Andrew. The Public Library as Street Corner University: back to the future? *New Library World,* 2000, vol. 101, no. 1156, p. 149–160.

Changes in the Value Chain of Scientific Information: economic consequences for academic institutions. Hans E. Roosendaal, Theo W.C. Huibers, Peter A. Th. M., Van der Vet, Paul. *Online Information Review,* 2003, vol. 27, no. 2, p.120–128.

CUADRA, Carlos A. The Local Electronic Library: science fiction or the real future? *The Electronic Library,* 1983, vol. 1, no. 4, p. 257–264.

DOLAN, J. From People Flows to Knowledge Flows. En: *Libraries and society: role, responsibility and future in an age of change.* Edited by David Baker and Wendy Evans. Oxford: Chandos, 2011, p. 35-51.

DOWLER, Lawrence and FARWELL, Laura. The Gateway: A Bridge to the Library of the Future. *Reference Services Review,* 1996, vol. 24, p. 7–11.

DRABENSTOTT, Jon, y otros. Designing Library Facilities for a High-Tech Future. *Library Hi Tech,* 1987, vol. 20, p. 103–111.

Favoriser la réussite des étudiants. Sous la dir. de Carine Elbekri-Dinoird. Villeurbanne: l'ENSSIB, 2009. 151 p.

Federación Internacional de Asociaciones de Bibliotecarios e Instituciones. IFLA *Code of Ethics for Librarians and other Information Workers.* The Hague: IFLA Governing Board, FAIFE (Committee on Freedom of Access to Information and Freedom of Expression), 2012.

FOSTER, Catherine, MCMENEMY, David. Do Librarians Have a Shared Set of Values?: A comparative study of 36 codes of ethics based on Gorman's Enduring Values. *Journal of Librarianship and Information Science,* 2012, vol. 44, no. 4, p. 249–262.

The Fourth Paradigm: Data-intensive scientific discovery. Edited by Tony Hey, Stewart Tansley and Kristin Tolle. Redmon, Washington: Microsoft Research, 2009. 252 p.

The Future of Scholarly Communication. Deborah Shorley, Michael Jubb, editors. London: Facet, 2013.

GALEANO, Eduardo. *Walking Words.* New York: W.W. Norton, 1995.

HEY, Tony, HEY, Jessie. e-Science and its implications for the library community. *Library Hi Tech,* vol. 24, no. 4, p. 515–528.

HOLLANDS, Robert G. Will the Real Smart City Please Stand Up? *City: analysis of urban trends, culture, theory, policy, action,* vol. 12, no. 3, p. 303–320.

JANKOWSKA, María Anna, MARCUM, James W. Sustainability Challenge for Academic Libraries: Planning for the Future. *College & Research Libraries,* vol. 71, no. 2, p. 160–170.

KAHNEMAN, Daniel. *Thinking, Fast and Slow.* London: Allen Lane, 2011.

Libraries and Society: role, responsibility and future in an age of change. Edited by David Baker and Wendy Evans. Oxford, United Kingdom: Chandos Publishing, 2011. 426 p.

LUMLEY, Risa M. A Coworking Project in the Campus Library: Supporting and Modeling Entrepreneurial Activity in the Academic Library. *New Review of Academic Librarianship,* 2014, vol. 20, no 1 p. 49-65.

MCDEVITT, Phillip. The Future Library. *Library Review,* 1929, vol. 2, no. 2, p. 83–88.

MISSINGHAM, Roxanne. Libraries and Economic value a Review of Recent Studies. *National Library of Australia Staff Papers,* 2005.

MORALES, Estela. The Future of the Library: a view from Mexico. *New Library World,* vol. 101, no. 5, p. 212–221.

MUHRBECK, Anton, WALLER, Richard, Berglund, Martin. *Coworking: A Creative Workspace.* Master's thesis, Jönköping International Business School, Jönköping University, 2011.

MURR, Lawrence E., WILLIAMS, James B. The Roles of the Future Library. *Library Hi Tech,* v. 5, no. 3, p. 7-23.

NAM, Taewoo, PARDO, Theresa. Smart City as Urban Innovation: focusing on management, policy, and context. En: *Proceedings of the 5th International Conference on Theory and Practice of Electronic Governance,* ICEGOV *2011.* New York, NY, USA. ACM, 2011, p. 185–194.

NIELS, Mara. Politics of the Library of the Future. *The Electronic Library,* vol. 8, no. 6, p. 408–411.

OLDENBURG, Ray. *The Great Good Place: cafés, coffee shops, community centers, beauty parlors, general stores, bars, hangouts, and how they get you through the day.* New York: Paragon House, 1989.

PARRINO, Lucia. Coworking: assessing the role of proximity in knowledge exchange. *Knowledge Management Research & Practice,* 30 September 2013.

PATON, William B. The Library of the Future. *Library Review,* vol. 8, no. 5, p. 163–168.

Price, Michael. The Community Office: A logical extension of the electronic library. *The Electronic Library,* vol. 15, no. 6, p. 463–468.

Rizzo, Joseph C. Finding your Place in the Information Age Library. *New Library World,* 2002, vol. 103, no. 11/12, p. 457-466.

Scientific Publishing: From Vanity to Strategy. Hans E. Roosendaal, y otros. Oxford: Chandos, 2010. 174 p.

Schöpfel, Joachim, McKiernan, Gerry. Towards the Global Library – Applying the Agenda 21 to Library Marketing. En: *Marketing Library and Information Services II: A Global Outlook.* Dinesh K. Gupta, Christie Koontz, Angels Massisimo. Berlin; Munich: ifla De Gruyter, 2013. ifla Publications Series, 159, p. 409–423.

Tenopir, Carol. The Value Gap. *Library Journal,* 15 July, 2009.

Tenopir, Carol. *University Investment in the Library, Phase II* [en línea]: *An International Study of the Library's Value to the Grant Process*. Library Connect. Partering with the Library Community. Elsevier, 2010. <http://libraryconnect.elsevier.com/sites/default/files/2010-06-whitepaper-roi2_0.pdf>.

Naciones Unidas. Asamblea General. *42/187: Report of the World Commission on Environment and Development* [en línea]. General Assembly, 96th plenary meeting, 11 December 1987. <http://www.un.org/documents/ga/res/42/ares42-187.htm>

Winzenried, Arthur, Miido, Helis. The Librarian and the Library User: what the future holds. *The Electronic Library*, vol. 15, no. 1, p. 15–22.

Further Reading

Allard, Suzie, Mack, Thura R., Feltner-Reichert, Melanie. The Librarian's Role in Institutional Repositories: A content analysis of the literature. *Reference Services Review,* vol. 33, no. 3, p. 325–336.

L'avenir des bibliothèques: l'exemple des bibliothèques universitaires. Sous la direction de Florence Roche et Fréderic Saby. Villeurbanne: Presses de l'Enssib, 2013. 224 p.

Créer des services innovants : stratégies et répertoire d'actions pour les bibliothèques. Sous la dir. de Marie-Christine Jacquinet. Villeurbanne: Presses de l'Enssib, 2011. 172 p.

Dickson, Andrea, Holley, Robert P. Social Networking in Academic Libraries: the possibilities and the concerns. *New Library World, v*ol. 111, no. 11/12, p. 468–479.

Dole, Wanda V., Hill, J. B. Community Users in North American Academic Libraries. *New Library World,* vol. 112, no. 3/4, p. 141–149.

Heterick, Bruce, Schonfeld, Roger C. The Future ain't What it Used to be. *Serials: The Journal for the Serials Community,* vol. 17, no. 3, p. 225–230.

Hey, Tony, Trefethen, Anne E. Cyberinfrastructure for e-Science. *Science,* vol. 308, no. 5723, p. 817–821.

Hu, Dehua, Luo, Aijing, Liu, Haixia. Open Access in China and its Effect on Academic Libraries'. *The Journal of Academic Librarianship,* vol. 39, no. 1, p. 110-112.

Jackson, Heather Lea, Hahn, Trudi Bellardo. Serving Higher Education's Highest Goals: Assessment of the Academic Library as Place. *College & Research Libraries,* vol. 72, no. 5, p. 428–442.

Kennedy, Marie. What are we Really doing to Market Electronic Resources? *Library Management,* vol. 32, no. 3, p. 144–158.

Moropa, Robert. Academic Libraries in Transition: some leadership issues – a viewpoint. *Library Management,* vol. 31, no. 6, p. 381–390.

Potter, Susan, Holley, Robert P. Rare Material in Academic Libraries. *Collection Building,* vol. 29, no. 4, p. 148–153.

Research Information Network. *Researchers and Discovery Services: Behaviour, perceptions, needs.* A study commisssioned by the Research Information Network. London: Research Information Network, 2006.

Spinuzzi, Clay. Working Alone Together: Cowotking as Emergent Collaborative Activity. *Journal of Business and Technical Communication,* 2012, vol. 26, no. 4, p. 399–441.

University Libraries and Digital Learning Environments. Edited by Penny Dale, Jill Beard and Matt Holland. Farnham, Surrey: Ashgate, c2011.

Walters, Tyler. The Future Role of Publishing Services in University Libraries. *portal: Libraries and the Academy,* vol. 12, no. 4, p. 425–454.

Williams, Caroline. Flexible and Agile University Library and Information Services: skills and management methodologies. En: *Trends, Discovery, and People in the Digital Age.* Edited by David P. Baker and Wendy Evans. Oxford: Chandos Publishing, p. 241–251.