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Cloud computing, software as a service and a critique to OCLC's discourses on cooperation, **by: Daniel Martínez-Ávila**¹ (SPAIN)

Abstract

Abstract: While OCLC is usually depicted as a library-friendly and cooperative organization, other authors have also exposed its more aggressive and commercial side of this supposed non-profit organization. One possible explanation for this idealistic and illusory image could be found in OCLC's marketing department and their effective propaganda campaigns, which not only intend to expand their business in every possible niche market but also show the company embracing every cutting-edge technology. In this vein, while concepts such as Cloud Computing and Software as a Service became popular in 2008, some activists like Richard Stallman warned us about the dangers posed to privacy and security. However, OCLC has not only embraced these philosophies but also presented them as something positive for libraries that they had previously envisioned. OCLC's discourses on finance, cooperation, globalization and Cloud Computing are critically analyzed in order to identify the potential problems and consequences that they pose to libraries and their users.

Keywords: OCLC, Cloud Computing, Software as a Service, privatization of libraries

Computación de la nube, software como un servicio, y una crítica a los discursos de OCLC sobre cooperación, **por: Daniel Martínez-Ávila** (ESPAÑA)

Resumen

Mientras que OCLC es normalmente representada como una organización amigable, cooperativa y colaboradora con las bibliotecas, otros autores también han expuesto su lado más comercial y agresivo en los negocios de esta supuesta organización sin ánimo de lucro. Una posible explicación para esta idealista e ilusoria imagen podría encontrarse en el departamento de marketing de OCLC y sus efectivas campañas de propaganda, en las que no solo se intenta hacer negocio en todo posible nicho de mercado sino también proyectar una imagen colaborativa y puntera respecto a las tecnologías. En este sentido, a la vez que conceptos como Cloud Computing y Software as a Service se popularizaban en el 2008, algunos activistas como Richard Stallman avisaban sobre los peligros que representaban para la privacidad y la seguridad. Sin embargo, OCLC no solo ha abrazado estas filosofías sino que también las han presentado como algo positivo que ellos ya habían visionado anteriormente, y podrían no estar equivocados. Los discursos de OCLC sobre financiación, cooperación, globalización y Cloud Computing son analizados de forma crítica para así determinar los posibles peligros y consecuencias que ellos representan para las bibliotecas y sus usuarios.

Palabras clave: OCLC, Cloud Computing, Software as a Service, privatización de bibliotecas

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Introduction

While OCLC (Online Computer Library Center) is usually depicted as a cooperative, collaborative and friendly organization for libraries, several authors have also exposed the commercial and aggressive business side of this so-called non-profit organization (see for instance Beall, 2008; Martínez-Ávila, Kipp and Olson, 2012). A possible explanation for this idealistic and illusory image might be found on OCLC marketing department and their effective propaganda campaigns, trying not only to make profit from every possible market niche but also to project an image of collaborative, geeky and cutting-edge organization in relation to every technology. In the vein, by the time concepts such as Cloud Computing and Software as a Service were popularized around 2008, several activists such as Richard Stallman warned about their privacy and security dangers (see for instance Johnson, 2008), however, OCLC not only embraced these philosophies but also claimed their terrible philosophies as something positive that they had already envisioned long time ago. They might not be wrong at all. OCLC's discourses on funding, cooperation, globalization and cloud computing are critically analyzed in order to determine these possible dangers and consequences for libraries and their users.

OCLC's official discourses on funding, cooperation and globalization

OCLC is defined as a nonprofit, membership, computer library service and research organization dedicated to the public purposes of furthering access to the world's information and reducing information costs². Furthermore, "(i)n support of these purposes, OCLC strives to maintain a strong financial base in order to accommodate growth, upgrade technological platforms, conduct research and development and sustain worthwhile projects for the benefit of members' libraries and their users. OCLC follows a conservative, *nonaggressive* accounting and operating philosophy in maintaining its financial reporting and internal control systems" (emphasis added). Concerning the non-profit nature of the organization, in 2011 OCLC included an explanation in the "*Financial information*" section of their website:

"Being a nonprofit does not mean that OCLC doesn't charge for services. It means that our financial goal, every year, is to retain a small amount (4 to 6%) of revenue (which includes cost sharing revenues, interest, dividends, gains/losses on investments) beyond what we spend to provide services, research, advocacy and standards work on behalf of our members. That extra 4 to 6%—which typically comes from the cooperative's investment portfolio—allows us to invest in the future of the cooperative, make major strategic improvements and freeze prices for member libraries when that is the right thing to do."

² *Financial information [OCLC - About OCLC]*. Available <http://www.oclc.org/about/financials/default.htm> (Accessed 6 September, 2011).

This principle of collaboration is also reflected in the "*Public Purpose*:" "a statement of commitment to each other—that we will work together to improve access to the information held in libraries around the globe, and find ways to reduce costs for libraries through collaboration"³. In addition, OCLC states that

"our public purpose is to establish, maintain and operate a computerized library network and to promote the evolution of library use, of libraries themselves and of librarianship, and to provide processes and products for the benefit of library users and libraries, including such objectives as increasing availability of library resources to individual library patrons and reducing the rate-of-rise of library per-unit costs, all for the fundamental public purpose of furthering ease of access to and use of the ever-expanding body of worldwide scientific, literary and educational knowledge and information."

Finally, the pretensions of universalization and globalization in OCLC are explicit in the Community section: "The desire for information is *universal and global*. And since its founding, the dream of the cooperative was to ultimately build platforms and partnerships among and between cultural heritage institutions around the world in order to serve people wherever they are"⁴ (emphasis added).

OCLC's official discourses on cloud computing and Software as a Service (SaaS)

These aspects of globalization and cooperation in OCLC have been linked to the controversial concept of "cloud computing" in several OCLC discourses.

The concept of cloud computing, from a critical perspective, is explained by the Free Software Foundation as "a marketing buzzword with no clear meaning. It is used for a range of different activities whose only common characteristic is that they use the Internet for something beyond transmitting files. Thus, the term is a nexus of confusion. If you base your thinking on it, your thinking will be vague"⁵. The Free Software Foundation also warns that: "When thinking about or responding to a statement someone else has made using this term, the first step is to clarify the topic. Which kind of activity is the statement really about, and what is a good, clear term for that activity? Once the topic is clear, the discussion can head for a useful conclusion."

³ *Public Purpose [OCLC - About OCLC]*. Available <http://www.oclc.org/about/purpose/default.htm> (Accessed 8 September, 2011). From the *Amended Articles of Incorporation of OCLC Online Computer Library Center, Incorporated*. Available http://www.oclc.org/councils/documents/amended_articles.htm (Accessed 8 September, 2011).

⁴ *Community [OCLC - About OCLC]*. Available <http://www.oclc.org/about/community/default.htm> (Accessed 7 September, 2011).

⁵ *Words to Avoid (or Use with Care) Because They Are Loaded or Confusing - GNU Project - Free Software Foundation (FSF)*. Available <http://www.gnu.org/philosophy/words-to-avoid.html#CloudComputing> (Accessed 11 September, 2011).

The vacuity of the term cloud computing has also been noted by several other authors. Knorr and Gruman pointed out that "As a metaphor for the Internet, 'the cloud' is a familiar cliché, but when combined with 'computing,' the meaning gets bigger and fuzzier. Some analysts and vendors define cloud computing narrowly as an updated version of utility computing: basically virtual servers available over the Internet. Others go very broad, arguing anything you consume outside the firewall is 'in the cloud,' including conventional outsourcing" (Knorr and Gruman, 2011). From a proprietary software developer point of view, Oracle CEO Larry Ellison stated that (Ellison cited by Farber, 2008):

"The interesting thing about cloud computing is that we've redefined cloud computing to include everything that we already do. I can't think of anything that isn't cloud computing with all of these announcements. The computer industry is the only industry that is more fashion-driven than women's fashion. Maybe I'm an idiot, but I have no idea what anyone is talking about. What is it? It's complete gibberish. It's insane. When is this idiocy going to stop? "We'll make cloud computing announcements. I'm not going to fight this thing. But I don't understand what we would do differently in the light of cloud."

In this same vein, Dan Farber, editor-in-chief of CBS Interactive News, added "The problem is that every tech company now wants to be associated with cloud computing, no matter if their products and services meet the basic criteria" (Farber, 2008).

The association of OCLC to cloud computing and to its application to libraries has been discussed by OCLC constantly since 2007. In the "*OCLC Annual Report 2007/2008*," the concept of cloud computing was first introduced in their discourse (Online Computer Library Center [OCLC], 2008, 20):

"the focus of computing has moved to the Internet. The current trend is cloud computing, where applications and data are stored on the Internet rather than on a local computer. This presents OCLC with the opportunity to provide libraries with computer infrastructure in the cloud, where they use the applications they need. Rather than buying, implementing and maintaining software themselves, libraries can use an application without having to worry about the technology that supports the applications."

In addition, the claim was made that a local connection to cloud computing was provided with the implementation of WorldCat Local in 2007 (OCLC, 2008, 24). In the "*OCLC Annual Report 2008/2009*," in the "*Strategic Directions*" section, the commitment to cloud computing was made clear while introducing a convenient definition: "We are building Web-scale services for libraries in a cloud computing environment. Gartner Research defines cloud computing as a style of computing where massively scalable information technology-related capabilities are provided as a service across the Internet to multiple external users" (OCLC, 2009, 3). On page 21 (also

included in the current "OCLC Vision" section of the website⁶) it is claimed that (OCLC, 2009, 21):

"In today's Web environment, scale matters. Through massive concentrations of shared data, applications and connections, communities can leverage the Web infrastructure to create new services, generate new operating efficiencies and develop new relevance to users. This emerging concept of Web scale -where systems are built and services delivered in the Internet 'cloud'- is strongly aligned with OCLC's historic mission. [...] Now OCLC is introducing next-generation services using 21st century Web technology that will greatly amplify the power of library cooperation. By connecting more libraries and more records, there will be more network effects and more value for the cooperative. Some services will interconnect in the cloud through machine-to-machine interfaces. Others will reside where they are technically most appropriate, at the local, group or global levels."

Also in this report, the concept of cloud computing was linked again to the philosophy of WorldCat (OCLC, 2009, 22-4):

"WorldCat.org: meeting users at the point of need [...] It aggregates library catalogs in the cloud to give the library community a unified and growing consumer presence on the Web, where most people start their information search [...] The WorldCat Local service will ultimately provide a single interface to the collections of a library. It is moving library management services, such as the online public access catalog, circulation and acquisitions, into the cloud computing environment where new features and functionality are delivered over the network rather than installed and run on local computers."

Finally, in the "OCLC Annual Report 2009/2010," the link of the cloud computing philosophy to WorldCat was consolidated: "WorldCat Local provides a single interface to the collections of a library. It is moving library management services, such as the online public access catalog, circulation and acquisitions, into the cloud computing environment where new features and functionality are delivered over the network rather than installed and run on local computers" (OCLC, 2010, 24).

Concerning WorldCat's scope, its global and universal approach is implicit on the OCLC website⁷:

"WorldCat, the record of human knowledge the community has built, contains the world's great library collections merged electronically into a database that can be tailored for and linked to local, regional and global levels. It contains records that represent more than 470 languages, and more than half of the records represent

⁶ *Vision [OCLC - About OCLC]*. Available <http://www.oclc.org/about/vision/default.htm> (Accessed 8 September, 2011).

⁷ *Community [OCLC - About OCLC]*. Available <http://www.oclc.org/about/community/default.htm> (Accessed 11 September, 2011).

materials that are non-English. The OCLC system supports 12 language scripts. [...] In addition, a new global community is being built with WorldCat.org and other Web-scale services, where libraries are creating a unified Web presence to deliver their collections, services and expertise at the point of need within popular Web platforms, such as search engines, digital libraries and social networking sites."

In the "OCLC Vision" section of the website, while talking about WorldCat, the partnership with Internet companies such as Google and the interest in booksellers is highlighted⁸:

"With WorldCat.org, the cooperative is experimenting with various models for integrating the collections, services and expertise of libraries into the common Web space to reach users who are now more likely to turn first to their Web browser -not their library- for information. Partnerships with Google, Yahoo! and other Internet companies are putting library content and services in search engines, Internet booksellers, social networking sites and course management systems to drive traffic to the local library."

Concerning Web-scale services, in 2009 this concept was also linked to the Software as a Service (SaaS) philosophy and to the OCLC vision (OCLC, 2009, 30):

"Web-scale management services: moving acquisitions, circulation and licensing to the cloud. In April 2009, OCLC launched an initiative to move library management services to Web scale. The objective is to lower the total costs of managing library collections while enhancing the library user's experience. OCLC's vision is similar to Software as a Service (SaaS) but is distinguished by the cooperative network effect of libraries using the same, shared hardware, services and data, rather than hosting hardware and software on behalf of individual libraries. The vision also calls for integrating the functionality of disparate systems and for linking with third-party business process systems, such as finance and human resources."

The concept of SaaS has been explained by Richard Stallman as follows: "Software as a Service (SaaS) means that someone sets up a network server that does certain computing tasks -running spreadsheets, word processing, translating text into another language, etc.- then invites users to do their computing on that server. Users send their data to the server, which does their computing on the data thus provided, then sends the results back or acts on them directly" (Stallman, 2010).

In OCLC's vision, the network server, although hosting the shared data and software of the whole consortium instead of the individual users, would run the acquisitions, circulation, licensing and all their derived processes in "the cloud," arguably also wresting control from the libraries. If proprietary local Integrated Library Systems (ILS) were considered a problem for libraries due to dependency on vendors, the application of SaaS to libraries may mean that a new level of problems will be reached. In this vein,

⁸ *Innovation [OCLC - About OCLC]*. Available <http://www.oclc.org/about/vision/future.htm> (Accessed 11 September, 2011).

Stallman compared the dangers of proprietary software and SaaS as follows (Stallman, 2010):

"These servers wrest control from the users even more inexorably than proprietary software. With proprietary software, users typically get an executable file but not the source code. That makes it hard for programmers to study the code that is running, so it's hard to determine what the program really does, and hard to change it. With SaaS, the users do not have even the executable file: it is on the server, where the users can't see or touch it. Thus it is impossible for them to ascertain what it really does, and impossible to change it. Furthermore, SaaS automatically leads to harmful consequences equivalent to the malicious features of certain proprietary software. For instance, some proprietary programs are "spyware:" the program sends out data about users' computing activities. [...] Unlike proprietary software, SaaS does not require covert code to obtain the user's data. Instead, users must send their data to the server in order to use it. This has the same effect as spyware: the server operator gets the data. He gets it with no special effort, by the nature of SaaS. Some proprietary programs can mistreat users under remote command. [...] SaaS inherently gives the server operator the power to change the software in use, or the users' data being operated on. Once again, no special code is needed to do this. Thus, SaaS is equivalent to total spyware and a gaping wide back door, and gives the server operator unjust power over the user. [...] SaaS and proprietary software lead to similar harmful results, but the causal mechanisms are different. With proprietary software, the cause is that you have and use a copy which is difficult or illegal to change. With SaaS, the cause is that you use a copy you don't have."

In these statements, every time server operator is said, it could be replaced with OCLC, and every time it says users, it could equally say libraries. In addition, and according to Stallman, the dangers of SaaS cannot be solved with free software here (Stallman, 2010):

"Many free software supporters assume that the problem of SaaS will be solved by developing free software for servers. For the server operator's sake, the programs on the server had better be free; if they are proprietary, their owners have power over the server. That's unfair to the operator, and doesn't help you at all. But if the programs on the server are free, that doesn't protect you *as the server's user* from the effects of SaaS. They give freedom to the operator, but not to you."

On the other hand, Stallman also claimed that avoiding the dangers of SaaS does not necessarily mean refusing to use any network server run by others. Along these lines, a distinction is made between the purpose of web servers and SaaS (Stallman, 2010):

"The original purpose of web servers wasn't to do computing for you, it was to publish information for you to access. Even today this is what most web sites do, and it doesn't pose the SaaS problem, because accessing someone's published information isn't a matter of doing your own computing. Neither is publishing your own materials via a blog site or a microblogging service such as Twitter or identi.ca. The same goes for communication not meant to be private, such as chat groups. Social networking can extend into SaaS; however, at root it is just a method of communication and publication,

not SaaS. If you use the service for minor editing of what you're going to communicate, that is not a significant issue."

However, according to this definition, OCLC's network services are SaaS indeed. Finally, Stallman also proposed some solutions for dealing with the dangers of SaaS and the need for cooperation, solutions that are not being followed by OCLC at all. Some of these solutions include the avoidance of third parties/companies and the use of P2P systems and GPL licenses (Stallman, 2010):

"But what about collaborating with other individuals? It may be hard to do this at present without using a server. If you use one, don't trust a server run by a company. A mere contract as a customer is no protection unless you could detect a breach and could really sue, and the company probably writes its contracts to permit a broad range of abuses. Police can subpoena your data from the company with less basis than required to subpoena them from you, supposing the company doesn't volunteer them like the US phone companies that illegally wiretapped their customers for Bush. If you must use a server, use a server whose operators give you a basis for trust beyond a mere commercial relationship. However, on a longer time scale, we can create alternatives to using servers. For instance, we can create a peer-to-peer program through which collaborators can share data encrypted. The free software community should develop distributed peer-to-peer replacements for important 'web applications.' It may be wise to release them under the GNU Affero GPL, since they are likely candidates for being converted into server-based programs by someone else. The GNU project is looking for volunteers to work on such replacements. We also invite other free software projects to consider this issue in their design. In the meantime, if a company invites you to use its server to do your own computing tasks, don't yield; don't use SaaS. Don't buy or install 'thin clients,' which are simply computers so weak they make you do the real work on a server, unless you're going to use them with your server. Use a real computer and keep your data there. Do your work with your own copy of a free program, for your freedom's sake."

Some of these aspects are closely related to the prevention effects of the USA PATRIOT Act and the NSL (National Security Letters) in US libraries⁹, and could wisely be adopted by libraries in order to avoid the dangers of SaaS (a concept that is apparently praised publicly by OCLC). These solutions would mean an ethical alternative to put the collaborative values and philosophy envisioned by OCLC into practice while protecting the freedom and autonomy of libraries at a local level.

Going back to the issue of applying cloud computing to libraries, the "*OCLC Annual Report 2008/2009*" stated: "OCLC is applying the concept of Web scale -Web-based applications with shared data and services or cloud computing- to amplify the power of library cooperation and create a significant presence on the Web for the OCLC global

⁹ An aspect in which the American Library Association (ALA) left clear their position in the "*Resolution on the USA Patriot Act and Related Measures That Infringe on the Rights of Library Users*:" "the American Library Association opposes any use of governmental power to suppress the free and open exchange of knowledge and information or to intimidate individuals exercising free inquiry [...] the American Library Association urges librarians everywhere to defend and support user privacy and free and open access to knowledge and information; and, be it further ... [etc.]" From: *ALA | Resolution on the USA Patriot Act and Related Measures That Infringe on the Rights of Library Users*. Available <http://www.ala.org/Template.cfm?Section=ifresolutions&Template=/ContentManagement/ContentDisplay.cfm&ContentID=11891> (Accessed 13 September, 2011).

cooperative" (OCLC, 2010, 17). In addition, it also claimed that the principles and philosophy of cloud computing were a revolutionary vision of OCLC Founder, Frederick G. Kilgour in 1967 (OCLC, 2010, 17):

"OCLC Founder Frederick G. Kilgour anticipated today's cloud computing back in 1967. His original design for the OCLC online system called for six subsystems that would connect libraries to a centralized computer resource: Online union catalog and shared cataloging; Serials control; Technical processing (acquisitions); Interlibrary loan; Retrieval by subject; Remote catalog access and circulation control. Libraries would access these subsystems from remote workstations. The costs of the hardware and software in the cloud -mainframes owned by the OCLC cooperative- would be shared by the members based on their use of the subsystems. With implementation of acquisition and circulation modules in its new Web-scale Management Services in 2010, OCLC has now realized Kilgour's visionary design."

However, this "visionary" concept of cloud computing is far from being considered good and desirable in many contexts. Jonathan Weber exposed the disadvantages of cloud computing, noting that users are dependent on someone else for their technology and that it might limit their flexibility and creativity (Weber, 2008). According to Weber, the cloud computing concept means a return to the days of the old model of business computing in which companies had big mainframes (aka clouds) and everyone connected to them via "dumb" terminals. This was something enormously frustrating for the people sitting at those dumb terminals since users could only do what they were authorized to do and they were dependent on the administrators to give them permission or fix problems. The claim has been made that in this scenario there was no way of staying up on the latest innovations, which is anything but optimal for most companies and individuals. According to Weber, the current local personal computer pre-cloud computing situation was a reaction to an old model in the cloud that was pretty similar to what is being sold as innovative nowadays: "the personal computer was a rebellion against the tyranny of centralised computing operations - and of the IBM mainframe world in particular."

Paul Venezia went a step further, linking the dangers of the cloud computing to the risk of losing everything in case of disaster (Venezia, 2011):

"Cloud computing not only distributes resources, it distributes risk - widely [.] The time will come when a major cloud provider takes it in the shorts - and that localized disaster ripples down to thousands of customers, wreaking chaos that surpasses the destruction of even the largest hurricane. Imagine companies in Boise going out of business because of a major earthquake in California. Or Virginia [.] if you decide to go "all in" with the cloud, you're not just trusting your cloud providers with your data, you're trusting them with the future of your company."

On the other hand, Richard Stallman also warned about the dangers of cloud computing in 2008: "It's stupidity. It's worse than stupidity: it's a marketing hype campaign" (Stallman cited by Johnson, 2008). According to Stallman, computer users should be keen to keep their information in their own hands rather than hand it over to a third party. Similarly, Jack Schofield pointed out that mainstream adoption of cloud computing could present a mixture of privacy and ownership issues, with users potentially being locked out of their own files, giving the example of the disability of

Nick Saber's Google account (Schofield, 2008). According to Schofield "calling it 'the cloud' is a good metaphor, because it's insubstantial and easily blown away. [...] Sure, 'the cloud' will work for most people most of the time, but (as with Windows) if you have a lot of users, you'll get a lot of errors. With a billion users, 10% having problems -which they probably will, over 10 years- is 100 million personal disasters."

Finally, Richard Stallman confirmed his negative views on cloud computing in 2010 calling it "careless computing." On that occasion, Stallman pointed out (Stallman cited by Arthur, 2010):

"In the US, you even lose legal rights if you store your data in a company's machines instead of your own. The police need to present you with a search warrant to get your data from you; but if they are stored in a company's server, the police can get it without showing you anything. They may not even have to give the company a search warrant. [...] I suppose many people will continue moving towards careless computing, because there's a sucker born every minute. The US government may try to encourage people to place their data where the US government can seize it without showing them a search warrant, rather than in their own property. However, as long as enough of us continue keeping our data under our own control, we can still do so. And we had better do so, or the option may disappear."

All these concerns and warnings, as well as the SaaS discourse on privacy, can be perfectly extrapolated to the librarian context of OCLC and their cloud computing philosophy.

Conclusion

Contrary to what many private corporations want us to believe, losing the ownership of our data and personal information by storing it in their cloud is not advantage for users, but only for their business models and marketing-driven data mining techniques. OCLC's receptiveness to these philosophies is just one more sign of their business model and their ambitions of controlling our data. A philosophy that libraries and other public institutions, as it has pointed out before, should be very aware of.

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