IFLA

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IFLA Journal is an international journal publishing peer reviewed articles on library and information services and the social, political and economic issues that impact access to information through libraries. The Journal publishes research, case studies and essays that reflect the broad spectrum of the profession internationally. To submit an article to IFLA Journal please visit: http://ifl.sagepub.com

Researching the impacts of information policy an imperative for the global library community

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As a profession, the work of librarians is dictated and mediated in many regards by information policy on both local and international levels. Copyright, Fair Use Exceptions, and Internet Governance are but a few major policy areas that impact greatly the ability of libraries to provide services. Information policies often determine whether a service such as interlibrary loan (ILL) or digitization can take place while also influencing the amount that these services cost the organizations and societies libraries serve in terms of real funds and opportunity costs. Obviously, strong library associations help libraries and librarians better understand policy issues and help to advocate for governance structures and laws that support access to knowledge, an increased public domain, and a literate population of readers. As a profession, how much do we really know about the impact of information policies on libraries, organizations, and readers as new laws and treaties are implemented and changed? Unfortunately, from the perspective of research and publication activity, the answer is not enough.

At a global and international level, several organizations focus tremendous energy towards both educating the profession and advocating for specific policy outcomes. In many regards, IFLA has taken the lead to translate broad policy issues to members while working across the globe to identify and support dialogue around specific issues as they emerge. Over the past decade, IFLA has been successful in working within major policy arenas, advocating on behalf of libraries in the World Summit on the Information Society (WSIS), working within the World Intellectual Property Organization (WIPO) on the Treaty of Marrakesh, and advocating at the UN to include the important need for information access within the 2030 Agenda for Sustainable Development.

Other organizations also play an important leadership role. Electronic Information for Libraries (EIFL) affects directly national and global copyright laws by training librarians on copyright and copyright advocacy, working within organizations such as WIPO to advocate specific policies, and drafting model copyright frameworks toward specific national policy outcomes. LIBER's "Strategy Plan" for 2016 emphasizes a copyright platform that advocates for what is categorized a flexible copyright policy that ensures harmonization of requirements for content sharing, exceptions for education, exceptions for digital materials and activities such as data-mining, support for open source to publicly funded research, and a reduction of the current terms of protections from 70 to 50 years after death in the European Union. National and international associations across Latin America, Asia, Europe, Africa, and North America engage in similar work.

Taking the Trans Pacific Partnership Agreement (TPPA) as an example, there is a clear overlap in professional concern for the manner by which new policy initiatives may impact information policy across the globe. The TPPA is a broad trade agreement among 12 nations in the Pacific Rim that is currently awaiting ratification before being enforced. The proposal was signed in February 2016 in New Zealand and aims to "promote economic growth; support the creation and retention of jobs; enhance innovation, productivity and competitiveness; raise living standards; reduce poverty in the signatories' countries; and promote transparency, good governance,

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and enhanced labor and environmental protections" (USTR, 2015). Although these are all values espoused by many in the information professions, the TPPA has the potential to impact negatively libraries and services in multiple regions of the world because of changes to intellectual property laws included in the agreement.

For example, the TPPA has the potential to impact access to materials by extending and further entrenching copyright protections, strengthening DRM provisions, and placing new restrictions on fair-use. The TPPA's intellectual property provisions include the adoption of significant portions of US copyright law among the countries of this vast region.[1] Like any change to information policy, the TPPA will impact access to knowledge. We need to know more about the extent to which these changes impact libraries and how impacts may differ by nation or region.

Since negotiations began, library associations followed the TPPA process closely. IFLA (2012) issued a statement of concern regarding the TPPA's lack of transparency and disregard for long-standing bodies and processes that address intellectual property on a global level. Although organizations such as the Association of Research Libraries (ARL) in North America successfully voiced concerns regarding fair use and support for the public domain, not all intellectual property issues within the TPPA were addressed adequately or equally across the partner countries (ARL, 2015).

One major concern shared within the profession is the extent of copyright protection with the TPPA modeling the US copyright for life plus 70 years. If implemented, countries such as Japan, Malaysia, and New Zealand will need to adopt what is becoming a new global copyright standard. This change advances the increased harmonization of copyright laws internationally, a need advocated by many library associations. Life plus 70 years, however, strengthens a term of copyright against which many library associations globally advocate. Further, library associations such as ARL fear that as more countries adopt this term of copyright protection, it will become increasingly difficult to dial back protections or dissuade countries from extending limits further in future trade agreements.

Although there is a chance that the TPPA won't be ratified, it is clear that the new copyright standards imbedded in the agreement will be the basis for future negotiations. Further, the TPPA is one of many information policy issues that impact libraries. As a peer-reviewed journal, *IFLA Journal* doesn't take an official or normative stance on specific information policy outcomes. Library associations, non-governmental organizations, and individual professionals

serve this advocacy role. *IFLA Journal*, does, however, advocate for researchers and academics within the profession to focus more sharply on documenting, researching, and publishing the impacts of policy outcomes. Librarians need to document the potential and real impacts of policies that impact access and fundamental library services. For example, the Library & Information Association of New Zealand Aotearoa has outlined clearly the financial impacts of the increased cost for ILL access to materials if an additional 20-year copyright period is mandated by the TPPA (LIANZA, 2015). Researchers need to engage with their colleagues in critical analysis, quantitative measures, and qualitative research that increases our overall understanding of the impacts changes in information policy have on libraries and the profession. Aside from a diversity of methodologies, a variety of units of analysis are needed: local, comparative, regional, international, and global. A wide and globally representative body of literature is required to inform policy advocacy and professional practice.

Declaration of Conflicting Interests

Funding

Note

1. See for final text of the IP provisions: https://ustr.gov/sites/default/files/TPP-Final-Text-Intellectual-Property.pdf (accessed 16 August 2016).

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Leadership in disruptive times

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Abstract
These are times of economic disruption globally, nationally, regionally, and locally. This ongoing turbulence will inevitably have an impact on your library regardless of the type of organization you support. The consequences of ongoing economic instability are exacerbated by what seems to be an extraordinary turnover in library leadership. This turnover requires a steady supply of new leaders to fill the shoes of those who retire or for other reasons leave their positions. Today our profession is confronted with the question of whether or not we will have enough new leaders or existing managers stepping up to leadership roles to drive the sustainability of information services? This question will be addressed through examination of four domains where the need for existing and aspiring leaders in the information profession is critical, regardless of the type of library: finance, fundraising, organizational politics, and evaluation. Equally important is understanding the role of the leader (as opposed to that of the manager) as the strategic thinker, visionary, and motivator, who inspires their team to excellence in these four areas and through demonstrating contribution to the organization's success, achieves sustainability. Using case studies as well as insights from past research and from colleagues around the world in different kinds of libraries, we will be looking at why these four domains are important to sustainability and what you as a leader needs to do in thinking through how to adapt them to the specific needs of your organization.

Introduction

The impetus behind the writing of this article comes from the authors' realization that in these difficult times, fraught with disruption at all levels in all types of organizations, the leadership of libraries continues to experience frequent turnovers. This turnover requires a steady supply of new leaders to fill the shoes of those who retire or for other reasons leave their positions. Today our profession is confronted with the question of whether or not we will have enough new leaders or managers stepping up to leadership roles to drive the sustainability of information services.

We have chosen to address this question by looking at four domains where, we believe, the need for leadership in the information profession is critical:

finance, fundraising, organizational politics, and evaluation. To further help us understand the challenge this question poses, we asked several accomplished information professionals from around the world to share their thoughts and pragmatic lessons on this topic as sidebars to this article.

Leader and manager are not interchangeable roles

There are a myriad of ways in which the terms leader and manager have been defined. The

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Figure 1. Leadership word map.

following seem as good as any for the purposes of this article. Defining these roles is, however, different from describing the characteristics needed to fulfill each successfully. Sometimes these roles might overlap depending on the size of one's organization. By their complementary nature they must work hand in hand. However, sustainability typically cannot be achieved if one individual is consistently expected or attempts to accomplish both. In her sidebar, Chris Flegg of Oxford University's Saïd Business School Library, suggests that in times of stability ''what is most required of a 'leader' is largely a managerial role, utilizing predominantly managerial skills to ensure services are delivered''. Stabile environments, however, may well be a thing of the past; if they ever truly existed for any length of time in the library world. The authors agree with Flegg that those seeking to be library leaders today must not forget about the tried and true leadership tools that have been successful in the past and must exercise sound judgement in creating a commitment to longer term sustainability. (See Sidebar 1)

Sidebar 1: What is library leadership?

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Leadership

As we in the higher education sector must increasingly feel the need to grapple with how we are to demonstrate and argue our value proposition, and do so by virtue of the way we can help our respective institutions be better at what they do, so is it becoming increasingly important that we evolve some understanding of how we are to do "leadership" to conceptualize, design, and deliver that value.

This is partly – but only partly – because in stable environments in which values are self-evident or assumed, what is most required of a "leader" is largely a managerial role, utilizing predominantly managerial skills to ensure services are delivered, while in more turbulent and fractious times those skills will rarely suffice.

More critically, as we find ourselves positioned where the goalposts that have defined scholarly enterprise can not only quickly shift but incinerate and vaporize out of sight, remaining a valid and relevant member of the collective team requires knowing how to redefine and realign who and what we are, and to do so with great speed and agility: and it is here that we have a sense that leadership as a distinct function needs to come most into play.

But while most of us can intuitively recognize good or effective leaders, developing a practical leadership "formula" can be surprisingly difficult. Evidence the vast cornucopia of leadership literature which we have ourselves amassed and which – by kilo weight alone – could suggest that leadership frameworks, rather than provide sure footings, exist predominantly as persistently contested areas of management theory and practice. They are articulated, pulled apart, scrutinized, analysed, questioned, reassessed, and finally, reconstructed into evermore new paradigms, with each discarded paradigm much like Leo Tolstoy's unhappy families – each unhappy in its own unique way and unlikely to be prescriptive of anything other than what to avoid.

So what of library leadership? Extraordinarily, decades of good stewardship by those preceding us has gifted us a set of finely hewn tools which have a place supporting any leadership table – specialist knowledge; unrivalled service orientation; ability to create chaos-busting structures; deep organizational skills; and commitment to the longer term.

Perhaps in the end, the challenge for the library leader will be in applying sound judgement to choose the destinations and how best to harness the tools to get there.

Figure 2. Management word map.

Within the context of this article, a library leader is defined as the individual who articulates a vision for the organization/task and is able to inspire support and action to achieve the vision. In the word map in Figure 1 (Peters, 2016) we see some of the characteristics common to library leaders.

A manager, on the other hand, is the individual tasked with organizing and carrying out the day-to-day operational activities to achieve the vision. In the word wall in Figure 2 (Palmer, 2011) above it is easy to pick out the many day-to-day tasks a library and information center manager might be responsible for carrying out and the diverse vocabulary that swirls around these tasks.

The density of these respective illustrations gives us some insight into how complex the life of the manager can be in terms of simple quantity and diversity of activities required to keep a library or information center operational on a daily basis versus the somewhat less definitive activities a leader must engage in which require time to strategize and reflect as well as to build consensus. Obviously there is some overlap. Both leader and manager, however, must work separately and together for sustainability to be achieved, especially in disruptive times.

While the focus of this article is not to answer the question of whether leaders are born or made or what it might take to become a great leader or a great manager, it is a question we want the reader to consider. In our second sidebar, "Qualities of Leadership from Job Experience", Eva Semertzaki, Head of the Library at the Bank of Greece, provides her perspective on leading and managing, including highlighting those "assets" which "distinguish qualitative leadership". (See Sidebar 2)

Sidebar 2: Qualities of leadership from job experiences

Eva Semertzaki
Head of Library, Bank of Greece

"If your actions inspire others to dream more, learn more, do more and become more, you are a leader" – John Quincy Adams, sixth President of the United States (1767–1848).

Leadership is both a research area and a practical skill, regarding the ability of an individual or an organization to "lead" or guide other individuals, teams, or entire organizations.

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Sidebar 2 (continued)

Management in businesses and organizations is the function that coordinates the efforts of people to accomplish goals and objectives by using available resources, efficiently and effectively.[2]

Work places are organized in hierarchical and in team structures. Managers are appointed to administer business units or organizations whereas leaders may emerge from all levels of the hierarchical structures. Within a volatile climate the need for strong leadership is essential. The leadership culture contributes to the increase of the organizational value.

Leaders are developed and educated within the working environment where they act and co-work with their partners and colleagues. Effective leadership complies with the mission and goals of the organization. Several assets distinguish qualitative leadership:

Mentoring. The issue of human touch and the people-centered approach are crucial considerations in leadership. Leaders respect and understand the staff recognizing that they are the important resource of the organization. Each staff member is regarded as a unique personality with specific traits and competencies. Charismatic leaders encourage staff to reveal their potentialities and take advantage of their expertise and knowledge hidden in their brains. Leaders amalgamate the expertise and knowledge of the senior with the fresh ideas of the young staff to boost the organizational growth. Existing and new staff may combine all skills necessary to perform a function.

Motivation

Leadership fosters the creation of ideas and motivates people to share. Thus, the feeling that people work at a safe, secure, and trustful work place is cultivated. In a confident environment the individual is convinced to articulate and share ideas and knowledge for the benefit of the person, the team, the department, and the entire organization. In such climate, the professional's productivity increases.

Personal development and skills

Efficient leadership requires the ability to evaluate personnel's skill sets[3] which are relevant to the functions performed and to make the most out of them. Therefore, effective leaders should know (Fitsimmons, 2009: 53):

- what functions need to be covered;
- what skills are required to complete each function;
- what skills each individual has.

Leaders give the staff the chance to use their unique combination of skills in parallel to pursuing job quality, accountability and cohesion of the team. Leaders promote the idea that in addition to formal training, personal professional development is important for the advancement of the existing and the acquisition of new skills.

Inspiration and collaboration

Key for the success of a leader is to inspire people with the ability to work with others in teams. Leaders encourage cooperation, collaboration, partnerships, synergies, and building networks. To collaborate is a new way of working. By joining forces the team becomes stronger and more effective. Synergies are required among diverse professions in different levels of the organization and among peers outside the organization. Leadership fosters a spirit of noble emulation among staff where each one complements each other in teamwork, like pieces of a mosaic. So, professional identity becomes stronger. The complementarity of the roles of professionals and non-professionals are vital issues.

Engagement

A quality of leadership is to engage staff and embed them in the process of change, to infuse the process with their ideas and to raise staff self-confidence. The business unit, e.g. the library, pursues opportunities to get involved and embedded in the operations of the organization. Behaving so, the unit raises its visibility.

Success and failure

Although the success of a business unit is shared between the leader and the staff, pitfalls and mistakes are usually coined to the leader. In the latter case, the leader defends the staff outside the unit but guides them inside it to learn from mistakes. This behavior raises confidentiality and accountability among the staff.

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Risk taking

A key leadership capability is the willingness to work with risk and to be prepared to work with risk (O'Connor, 2014: 85). Risk is a readiness to deal with uncertain conditions and engage with difficult issues while calculating the probability of success and failure. Effective leaders should not be afraid to confront risks. It is better to take a risk instead of staying inactive. Though, it is not necessary to take resonant risky decisions but small steady steps.

Attributes of leaders

Communication is a basic characteristic for leadership towards top and bottom management (Sidorko, 2007: 13). Strategic thinking and listening, accountability and humility, the ability to analyze new ways of the working environment; creating successors; being open-minded, persuasive and persistent, driver of change, quick-thinker and forward-thinking decision maker and calm in stressful circumstances are some of the attributes of a leader (O'Connor, 2014: 79).

Conclusion

Leaders require having creative minds in shaping strategies and solving problems. They are mentors for the staff, work hard and inspire them to do more with less and to start small and grow big. Staff need to be motivated to work at their optimum performance level. Leadership entails awareness of the responsibilities inherent to the roles of a leader. However, effective leadership requires the support of the upper management.

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Leaders in the information profession need to understand how someone in a leadership role must position themselves to help sustain their organization in disruptive times. But what does the phrase "disruptive times" actually mean? Given the turbulence rampant in our profession and in the information world in general, perhaps disruption is the new constant. In the sidebar entitled "Leadership in Disruptive Times: A Case Study at a Professional Services Firm", a retired director of knowledge management for a professional services firm offers some insight from the Canadian perspective on the current disruptive environment. The sidebar addresses the challenges facing the leaders of information- and knowledge-related teams in figuring out how they could support their parent organization as it confronted the "enormous competitive pressures of globalization, regulatory reform and control, commoditization of services, downward pressure on fees, and the need to differentiate themselves". (See Sidebar 3)

Sidebar 3: Leadership in disruptive times: A case study at a professional services firm

Retired Director of KM for a professional services firm, Canada

The theme for the 2016 World Economic Forum (WEF) in Davos is "Mastering the Fourth Industrial Revolution". What does this mean? Well, according to the WEF, the "Fourth Industrial Revolution is distinct in the speed, scale and force at which it transforms entire systems of production, distribution, consumption – and possibly the very essence of human nature" (http://www.weforum.org/agenda/2015/11/what-is-the-theme-of-davos-2016). And according to WEF Founder and Executive Chairman Klaus Schwab, this Revolution is "a fusion of technologies that is blurring the lines between the physical, digital and biological spheres" ushering us into an era that will transform the "economic, social, ecological and cultural contexts in which we live". Clearly, the WEF believes that we will all be affected – and

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already are affected – by this Revolution: governments and how they lead; consumers and how and what we buy; and, of course, business and how it succeeds.

So, we find ourselves in an era of constant transformation and change. As we distill these global drivers of change into industry specific situations, what are the particular challenges facing, for example, professional services firms that aspire to provide trusted business advice to clients in a variety of areas, including legal, engineering, accounting, tax and consulting services?

Professional services firms operating in the knowledge economy are confronted with enormous competitive pressures. Globalization, regulatory reform and control, commoditization of services, downward pressure on fees and the ultimate goal for large accounting and consulting firms – differentiation – are now every day considerations for leaders. And of course, these concerns inevitably trickle down to both client-facing and internal functions within these firms. How can we continue to offer high quality services and resources to solve clients' issues, while increasing revenue? How can internal firm services such as business development, marketing, information and technology and knowledge management support the firms' goals and objectives?

Let's look at how a national professional services firm began to respond to these pressures. The firm is a partnership: a particular organizational structure that adds an additional layer of challenge to any transformation initiative. It is medium-sized, with over 450 partners and 6000 total staff, including partners. It provides services to a variety of clients in a smorgasbord of industries, from large public companies to private, family controlled enterprises. The firm is innovative and forward thinking and has embraced a number of initiatives to control cost, including outsourcing of back office functions and the usual accompanying layoff of selected staff. However, it's clear that cost cutting can only take the firm so far and that revenue growth is key. How can internal services support innovation and transformation to help drive this "winning work" mentality? How can knowledge management (KM) be a leading part of this transformational change? How can KM avoid the pitfalls of cost containment?

As with knowledge management as a discipline, KM at this particular firm (let's call it PSF) had an up and down history. From a governance perspective, it had been fragmented and was "owned" by different areas of the business at different times. From a leadership perspective, it seemed clear that KM needed to be as close to the "coal face" as possible, i.e. as close to the client as possible. The first move was to position KM within the Sales & Marketing function. At the same time, three "arms" of KM were defined: Research Services; the process-oriented knowledge manager program, embedded in the various industry groups and practice areas of the firm; and KM Operations, the team that looked after firm wide KM technology, tools and applications, including the firm's intranet. Next, the focus of KM planning was aligned squarely with "winning" work. KM priorities were aligned with the strategic priorities of the firm.

What did this mean at an operational level? It meant that some of the traditional aspects of research and KM disappeared. Research Services concentrated on proactive support of firm strategic priorities, e.g. key clients and industries, while at the same time implementing a 3-tier research support model that included the use of an offshore support team. Knowledge managers focused on developing processes and content to support business development, e.g. citations, business cases, bios, and other proposal-related material. KM Operations worked on streamlining intranet content and improving the content management processes, as well as working to develop new apps to support collaboration among sales staff, marketers and knowledge management. And of course, all this change happened while continuing to manage the existing demands from the business and working to implement successful change management both within KM itself and with our internal KM clients. Also, time did not stand still; the business continued to evolve and transform.

What did this mean at a leadership level? First of all, I must emphasize that leaders are found at all levels within not just entire organizations, but also discreet functions. Change initiatives can only succeed if these potential leaders are identified, engaged, supported, motivated, given responsibility and accountability. Secondly, at the KM functional leadership level, the focus was on providing this structure for transformation and change and supporting the team and leaders who would implement and execute. This is not to say that financial, human resources, governance, measurement, or political aspects were ignored. It simply means that as a leader, the focus was on managing both up and down to provide the framework for transformation.

Each of us also has key values and principles that are our own personal change drivers. Now that non-stop change is the new norm, these values are, if possible, even more important when managing and leading a team. In my case, I believe implicitly in a few critical fundamentals:

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- Transparency – objectives and scope of change and plans must be clear. Rewards for success, standards for measurement, expected support and any barriers to execution should be communicated and mitigated, if possible.
- Trust – this goes hand in hand with honesty, integrity and transparency. Constant ongoing communication and support from leaders to team members - and from team members to leaders - goes a long way to building trust. Your team must believe implicitly in you and in what you tell them.
- Collaboration – no silos! Bring team members together; mix diverse experiences and knowledge; provide opportunities for sharing and learning from others, especially on-the-job.
- Relationships – nothing is as critical to the success of any change or transformative initiative as building, growing, and sustaining relationships. Identifying and assessing your stakeholders – peer, up, down, and outward – is the first step. Proactively managing these stakeholders is the next step and cannot be neglected. When significant change hits an organization, if you cannot depend on relationships you have built, individually and as a team, you are toast.

Finally, we need to remember that change – even successfully managed change – does not stop. New pressures on the business emerge; new leaders are appointed; new technologies become feasible; and the next cycle of transformation begins. As the saying goes, "if you can keep your head when all about you are losing theirs" (Rudyard Kipling) and believe in values-based leadership, then change will not be disruptive to you.

Library leadership in the four domains

Finance

The authors have written a good deal on the subject of sustainability and survival, especially in the context of economic shifts over time. There is no question that the cyclical performance of the economy has an impact, both direct and indirect, on budgets allocated to information services in all types of organizations. Turbulence is, indeed, a constant in our profession. To not be aware of this, worse, to deny it, will not put or keep you on a road to sustainability. One of your key concerns has to be the state of the economy in general and the specific situation at your institution. Our interest in the economy is not new but peaked in 2013 when a global economic survey was published by Bain & Company, Inc. (Rigby and Bilodeau, 2013). In this report, managers were found to be risk averse and focused on revenue growth, cost reductions, and increased profits. These priorities have serious implications for information management and for the leaders in the profession. More recently (Rigby and Bilodeau, 2015), Bain reported that the executives surveyed seemed more upbeat but wondered why since the economy was not improving at the rate predicted.

Another management consulting firm, McKinsey & Co. issued a series of reports in 2014 and 2015 (Enriquez et al., 2015, McKinsey & Company, 2014a, 2014b, 2015a, 2015b, 2015c). In brief, they concluded, worldwide economic conditions were challenged at best in most if not all parts of the world. Money is tight and the decision makers in the academy, in our cities, corporations, and the like will not only be risk averse but also concerned about budgets for a whole host of worthy projects that require funding.

Leaders in information management need to pay keen attention to this critical issue. In fact, the authors examined the forces pressing on the future of one type of library, corporate/special libraries. We found these libraries immersed in a harsh economy with a parent organization interested in reduced head count and cost reduction. Somehow, a great many leaders in special libraries did not or did not want to see the realities before them. As a result of the movement to scale back on expenses, to reduce headcount and to reassess need, many corporate/special libraries have been forcibly reduced or eliminated with no input from the leaders of information management (Matarazzo and Pearlstein, 2014).

This topic, the larger global economic impact on library budgets, is not often addressed in our professional literature. A good example is the *Annual Business Survey of British Corporate Libraries* published by Alan Foster (2015). This is a terrific report with lots of insights from library managers that any reader would find of use. In the past Foster reported on a large number of libraries but more recently has changed his research method to include only 15 to 20 firms with more depth than in the past. While this is a useful study for its treatment of many variables, even Foster gives scant consideration to the economy and its impact on information management.

A case in point: The University of Connecticut (UConn) libraries, USA. Warburton (2015) reports on budget cuts

coming to the University of Connecticut libraries. In 2016 the reduction will amount to $1.2m. This would mean a loss of seven and one-half full-time equivalents. Further cuts are in the works for 2016 and expected in 2017 as well. Both faculty and library staff knew budget cuts were coming in light of the projected cut in the University's overall budget and had been planning for how these cuts would impact the libraries. If you knew something like this was going to happen to your library, the need for planning similar to what has gone on university-wide should seem obvious. How is your library planning for any eventual reductions? Libraries tend to make cuts in reaction to an economic downturn and/or reduced funding. By that point, however, it is usually too late to identify, plan, and implement a thoughtful response. While at the University library leadership is doing what they can to be in control of how cuts are being incorporated, this is not to say they are satisfied. One key takeaway from their experience is that they continue to work with stakeholders and present their financial situation in the larger context of both the university and their peer institutions to hopefully affect how future cuts may be mitigated.

How might you proceed? If it is not already too late in your organization, you must create a strategic vision for how your library will deal with these inevitable reorganizations and cutbacks. Never forget it is at least a two-way street with yourself and your team as key stakeholders committed to achievable solutions. As a leader it is your job to get your team motivated towards accomplishing this vision through managers responsible for operationalizing it. This must be an aggressive and robust approach with a laser focus on those activities that will best support your parent organization's sustainability. For example, we know there have been significant changes in how all libraries handle ready reference. Recognize and accept this and build a new approach to the needs of your customers. Other programs/services which made sense 10 years ago may not be yielding the benefits anymore and can and should be discontinued. There are already several examples in all types of libraries where these changes are being made by networking and consulting the literature for examples you can adapt to your own organization, engage your stakeholders so you know what they need, not necessarily what you want them to have. Scenario planning is a great tool to use in this effort and with the right mindset and motivation you can position yourself to be as in control of the fate of your information services as possible during disruption (Matarazzo and Pearlstein, 2009).

Figure 3. Competition for resources.

Are costs being cut at your organization? Look around and assess the situation. In the past, academic libraries, a very expensive operation on most campuses, had not seen serious reductions. This is no longer the case. Nor is it the case for public, private, and special libraries. When the authors are asked to conduct an evaluation of a library and its services, we often turn to the two-by-two graphic in Figure 3. On the left-hand side, the darker side, is the demand portion of our mental model. The top left is reserved for what organizational management wants from its services. The lower left represents the wants/needs of customers. The right-hand side represents the supply side with Information Services (IS) management in control. At the bottom right are the resources made available to the clients. In the middle is the all-important available dollars offered to fund the supply side. As this figure illustrates, creating a healthy and sustainable financial environment for your information service requires the understanding that you are in constant competition for an ever-dwindling pot of money.

True leadership requires asking the "what if" questions early and often. Disruptive times will always be just around the corner. It is up to the leadership of the library to recognize economic conditions and formulate strategies to counter/adapt to whatever cuts must be made by not being caught unaware.

Fundraising (it's not just about grants and golf tournaments)

When we think about leadership in establishing a vision for ensuring economic stability in a library we have to focus on how important strategy, creativity, and political savvy are. A strategy for keeping your library financially viable obviously requires more than simply being able to develop a budget. The budget itself is the end game and only results from the extremely hard strategic thinking about sources of

funding and their long-term availability. What a leader never wants to have happen is a reliance for significant portions of the operating budget to be on "soft dollars".[1] Further, fundraising should not be seen only to be about raising money, it can also be approached from the perspective of cost recovery and this should not be a tool discounted out of hand.

Strictly speaking, though, all budget dollars might have to be considered soft in today's turbulent economy since leaders are annually put in the position of having to make the business case for their libraries to secure funding in competition with other internal departments. When we think about fundraising we tend to think about this as a topic for public or even academic libraries but in its broadest definition, acquiring resources to sustain operations, it is also a topic for special libraries even in for-profit settings.

On the public side it is not unusual for libraries to seek out grants that would help them with construction of new spaces or remodeling of older spaces to be more conducive to new needs or for specialized programming. Public libraries are also getting very creative about experimenting with new revenue streams such as in-house cafés or full restaurants partnering with third party vendors for a share of the profits, vending machines that sell more than just food and drink and might include such items as flash drives and charging cords, and even renting out space for weddings or corporate events. Some public libraries hold annual golf tournaments and regular sales of weeded/donated materials to augment their budgets and enable them to respond more rapidly and be more agile in providing programming to meet a variety of community needs.

On the academic side grants both from faculty projects and directly can also be a lucrative way of augmenting the library's budget. Likewise, gifts from alumni (as noted below) are a great source of both endowment funds and support for one-off major purchases (e.g. the new 3-D printer is a gift of the class of . . .). Many academic libraries carve out a role for a development officer while in others this role falls to the leader. Whichever way your organization chooses to handle development, the scope of undertaking fundraising can be daunting in terms of skill set (not everyone has the fortitude or personality for this kind of activity) and travel time (someone must take the time to go to where the donors are). Ensuring alignment with the University's development priorities is also no small feat. As Susan K. Martin (1998: 4) notes: "whether working independently or together with academic schools or departments, the library's development priorities must flow more or less directly from the university's priorities". Reinforcing library

fundraising as supporting academic programming rather than competing with them and regularly persuading the campus community of the "legitimacy" of the library's fundraising activity is a full-time job.

A case in point: The Dean and the Director. The Director of the Library sought a partnership with the Dean of the Library School to explore options for raising funds. They decided to approach the Development Office and make the business case for including the library as a targeted recipient of development funds. Despite the Development Office's initial skepticism, the library was included and was quickly adopted by one of the alumni groups as its class development mission. Had the Director and Dean not been willing to educate the Development Office about the likelihood that alums might welcome the opportunity to support the library, this potentially lucrative avenue of support would have been missed.

A related example. A dean recognized that the School's library was heavily used and resources were increasingly under pressure. He worked with the Finance Office to start a fund for the library to augment its budget and in a short period of time they were able to create an endowment to sustain the effort. Recognizing that a "high touch" acknowledgment of donations would continue to build relationships that might lead to further donations, the Dean made a habit of contacting alumni to thank them personally for their gifts. While this was extremely time consuming, many of those called gave additional gifts leading the Development Office to request that the dean spend even more time on such calls. So, while the "high touch" interaction was instrumental and additional funds were raised, it also took a significant amount of time away from the daily duties of the Dean. The warnings given by Martin (1988) in her splendid essay on this topic referenced above, and which is a must for all library leaders to read, are not to be taken lightly. Fundraising and its related activities can be and usually are all encompassing of a leader's time.

Regardless of the type of library, though, creating the best structure to support fundraising is the job of the library leader and can result in an internal disruption of staff and resources that must be dealt with if the development program is to be successful. When internal disruption is coupled with external disruption driven by the economy or other organizational challenges, the ability to get team buy-in for the vision becomes even more critical.

Something to consider. In his forward-thinking article "The entrepreneurial imperative: Advancing from

incremental to radical change in the academic library", Jim Neal (2001: 1), now University Librarian Emeritus at Columbia University, went beyond the now somewhat obvious fundraising activities discussed above and called on the academic library to redefine itself as a "virtual resource not limited by time and space, and therefore not dependent on buildings for the housing, use, and servicing of information". This was a much more ambitious call for action that would reposition the academic library as a "successful competitor in the information marketplace ...". Neal continues and forcefully expands on this theme in the accompanying sidebar in which he writes not only of the qualities needed of a leader during disruptive times to which they must react, but of the qualities needed of that leader to drive radical change and initiate disruption going forward. In calling for library leaders to secure resources, be entrepreneurial, ask hard questions, have a strong professional voice and create new and systemic partnerships, Neal echoes the overall focus of this article and clearly describes the qualities needed by academic library leaders to ensure sustainability and contribution. (See Sidebar 4)

Sidebar 4: Leadership dynamics in the academic research library

James G. Neal

University Librarian Emeritus, Columbia University

Leadership for me embraces several key elements:

- working in the organization to set a vision and a direction;
- hiring and developing really great people;
- securing the resources;
- building an entrepreneurial culture;
- asking the hard questions;
- creating new and systemic partnerships in the library, information and campus communities; advancing a strong professional voice;
- and then, just getting out of the way, because leadership must permeate the organization.

Leaders must have a clear sense of mission ... why did I join this profession? A self-vision ... what do I want to accomplish? A base of knowledge ... what tools will enable me to be effective? Strategic positioning ... what will be my career path? Commitment to continuous improvement ... how will I grow and advance? And a powerful professional engagement ... how will I serve the profession?

Leaders understand that in order for the organization and the profession to be successful, we must transform. We must change in composition and structure, that is, what we are, and what we do. We must change our outward form and appearance, that is, how we are viewed and understood. We must change our character and condition, that is, how we do it.

Leaders promote innovation. They systematically apply new knowledge to new resources to produce new goods and new services, that is, develop the market. They focus on lowering the costs and increasing the benefits, that is, add value. They think deliberately about existing challenges and unmet needs, that is seek solutions. They understand the importance of achieving a balance between evolutionary, incremental change and revolutionary, disruptive change.

The academic research library is being driven by five fundamental shifts:

- primal innovation, creativity as an essential component of our organizational and individual DNA;
- radical collaboration, new, drastic, sweeping and energetic combinations across and outside libraries;
- deconstruction, taking apart traditional axioms and norms, removing the incoherence of current concepts and models, and evolving new approaches and styles;
- survival, persistence and adaptation which focuses more on the "human" objectives of our users, that is, success, productivity, progress, relationships, experiences and impact;
- particularism, deep specialization and responsibilities in the face of rampant shared and open resources.

How do we navigate these trends through our shifting geography, our essential expertise, and our advocacy of the public interest? That is the fundamental challenge to academic research library leaders.

Organizational politics and leadership: Politics is everywhere, ignore it at your peril

Whether you are at an academic institution, a for-profit, or a public setting, your organization is political. To be a leader you must become a very good politician in order to get things done. Often, most of us depend on people outside of our responsibility areas to assist us in navigating the politics of our organization. A leader needs to recognize who in the organization is essential to aid the library. For example, at academic institutions faculty are natural allies; in public settings, the Friends of the Library can and do exert political pressure for the good of the library. In for-profit environments there needs to be a champion allied with the library who acts as an advocate.

Change (i.e. disruption or turbulence) is a constant. The authors have worked with or studied several organizations where no one seems to really know who the key decision makers are for the library. This is often the result of the library leader's position on the organizational chart or of frequent personnel changes in the position of library leader as well as the position/individual to whom the library leader reports. The challenges in these positions are many and the pressures can be intense. Turnover in leadership both in the library and in the reporting upward structure are not unusual. New personnel in the position to which the library reports, will often exacerbate turbulence by driving a change in direction. Sometimes, though not always, the library can roll with this turbulence. In one instance, for example, the person to whom the library manager reported told us she was leaving. She had been with the organization for six years and was highly regarded for her expertise with people and resources. She said this firm changed every year and she could no longer take the radical changes of course. On the other hand, she said with great admiration, the library leader and her staff changed direction easily, likening them to a field of grain which bends with the wind but does not break. Is this the result of luck or good leadership?

Leadership is a contact sport. The role of the library leader is to decide on the group's goals, identify who above or beside them in the organization is needed to help achieve these goals, then motivate them to action. Leaders need to develop tactics to influence those in power to come over to their side, especially in the budget process. Those in power likely have no reason to vote against the library's budget except to ensure that there are enough funds left to fully support their areas of responsibility. If, for some

unfathomable reason, at this juncture of your leadership career, you are not aware of the internal competition for funding, let this be your wake-up call.

In our work on this subject, the authors hear reports from library leaders that this university president or that city manager was partial to libraries while other organizational leaders were ambivalent. The library's funding and its place in the hierarchy was often dependent on the ultimate head of the organization which changed with some frequency. One corporate library leader shared with us that she had reported to six different managers in five years, some who cared about the library and were engaged, others who could care less and simply saw the library as something they had to deal with. Such disruptions place the library in any organization in a constant state of catch-up from one favorable/unfavorable person to the next making the political acuity of the library leader even more essential.

Those in the know: Building your leadership power. Any organization has its unique culture of information sharing. Our experiences and research suggest that certain people at every location seem to know what is going on overall as well as who is responsible for making decisions. As a result, these individuals are able to be prepared before any announcements are made that might affect their department. Others with no role to play in decision making and no one to alert them to fundamental change must scramble and simply resign themselves to doing whatever is demanded. You cannot call yourself a leader if more often than not you find yourself in the latter situation.

The leader in charge of the library has to be at the top of their game in the profession. They must be recognized as a leader in the field by all at the organization. This is the foundation of the leader's power in their workplace. Leaders can then decide which individuals are influential and important to them in achieving their goal. What are their points of view likely to be? How do they feel about what you are trying to do? Are there others with power and influence who would oppose you? What other bases of influence can you develop to gain more control. After all of this, a leader can decide a course of action and work towards their goals.

Generally speaking, understanding the context within which you as a leader work and within which your information services/library team operates is a critical component of being able to successfully lead and especially so during disruptive times. To whom you report, who controls your budget, who is your champion, how you demonstrate your contribution are all key components in an environment where the

players are constantly competing against one another for resources and in which players come and go with regularity. Not recognizing the reality of your role in this competition can mean career suicide for yourself as well as for your IS team. As our colleague Yasuyo

Inoue confirms in her sidebar on leadership in Japanese libraries, regardless of your country and/or corporate culture, there are definite commonalities of thought and action shared by good leaders. (See Sidebar 5)

Sidebar 5: What is expected of leadership in library and information fields in Japan?

Yasuyo Inoue
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The Japanese way of management in business fields demands that a leader be a "coordinator" among organizations through "Hoh-Ren-Soh" (report, contact, and consult with the company's higher-ups) among workers. The same leadership qualities are expected of librarians in leadership positions in business organizations. They are not required to have strong character like Shima Kosaku, a protagonist in business Manga.

However, an active librarian as a leader among library and information workers and communities needs to have basic and advanced knowledge of librarianship, legal and political information, and have a strong passion for library and information works and communication skill. As for librarianship, leaders should recognize and demonstrate what libraries are for and whom librarians are working for.

Once a middle-aged woman library activist asked young librarian-to-be students, "Do you like books? Do you like people? Do you like libraries?" If you can answer those simple questions, and explain why and persuade the people who don't like to read books, don't like talking with unknown people, and never come to libraries you can be a good leader.

The politics of organizational health. Michael Bazigos et al. (2016) writing in the *McKinsey Quarterly* on the topic of leadership in context, noted that their research identified being able to recognize and respond to your organization's health as far more important than trying to follow some textbook formula for how to be a good leader. While there are constants such as demonstrating concern for people and offering a critical perspective that will always be part of being a great leader, the McKinsey authors note that the importance of other elements such as keeping groups on task and bringing out the best in others will vary depending on the organization's circumstances. Effective "situational leadership", they argue, adapts to changes in organizational health by "adapting and marshaling" the kinds of behavior to transition to a stronger, healthier state.

For library leaders this means not only understanding the overall economic situation impacting your organization and working as effectively as possible to contribute to its financial health, as we have discussed above, but also being able to anticipate, recognize, and react with honest self-reflection and a robust assessment of where IS can contribute to helping the organization move forward sustainably.

Obviously not all reasons for failing organizational health can be remedied by the library leader. In a "sickly" organization, however, there will be many behaviors necessary to help a leader identify

the best antidotes. A library leader who is savvy about the political environment within their organization, fosters strong alliances across the organization through networking and champions, and makes sure that their constituencies understand how they contribute to the greater good of the organization, will be better positioned to both weather the disruption caused by the illness that has threatened the organization's health and will also be able to contribute to the remedy in a very visible way. The McKinsey authors provide an excellent roadmap based on an extensive survey of leaders in multiple industries and geographies that library leaders might adapt for just this purpose.

Evaluation (demonstrating contribution, you are what you measure)

With geopolitical and economic pressures affecting revenues, profits, endowments, tax receipts and the like, one of the most awkward questions asked by organizational management has to be what is the value of the library and its services? This question leads to other questions: "What is value"? and "How do we measure it"? An important corollary to these questions of value and measurement is the notion that if you cannot measure something, i.e. you cannot determine its contribution to the success of your organization, you should not be doing it.

Information professionals have been trying to put the definition of value in a context that their customers can appreciate for as long as there has been a need to compete for budget dollars and other resources; in other words, for at least the past 100 plus years, or since Andrew Carnegie convinced cities and towns that a public library was a benefit to the community, and John Cotton Dana convinced businessmen of the same. For the purposes of this article we define the domain of "evaluation" as the role of the leader in understanding and conveying to myriad audiences what is being done and why it matters.

Defining value and demonstrating contribution are but two of the tools leaders must utilize as they work toward sustainability of their services. The authors would be foolish to argue that there is only one "correct" definition or one "best" tool for achieving this end. Context and alignment are what drive the definition and the choice of tools and it is up to the leader, especially during disruptive times, to choose the most relevant path to sustainability.

The strategic approach. The traditional way for most studies to approach evaluation is to estimate the economic replacement cost or to ask the customer directly to judge the utility of the service. In our view, both of these approaches have problems. Replacement costs could lead to an over-estimate or under-estimate of the value of the service. Conversely, asking the customer to evaluate avoids the cost issue but creates other problems of objectivity and comparability. Two individuals may perceive the same service differently.

In our view, as we have discussed above, library leaders, especially in disruptive times, would do well to create value and demonstrate contribution by aligning information services to the strategic goals and objectives of the institution served. Given the circumstances at your organization, what are the most effective services the library leadership needs to design and deliver in the most efficient manner possible? An excellent example of this is illustrated in the accompanying sidebar from our colleagues in New Zealand through their interview/profile of Judy Taligalu McFall-McCaffery. In describing her "gentle thought leadership – the Pacific way", the reader is given to understand the choices this leader has made to ensure that disruptions stemming from migration, immigration, and the need for cultural relativity and respect are addressed using an approach that is both contextual and aligned with the mission of providing her "customers" with sustainable services in the areas of education and literacy, and her colleagues and other stakeholders with an understanding of why it matters. The strategic thought process and lessons gleaned from Ms. McFall-McCaffery's approach to dealing with her particular kind of disruption can be adapted to any type of library environment. (See Sidebar 6)

Sidebar 6: Gentle thought leadership the Pacific way

Gillian Ralph
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Julie Sibthorpe
Fellow, Library and Information Association of New Zealand Aotearoa, Bribie Island, Australia

In the world today, there are large-scale migrations. This is not something new. People are leaving their homes, countries, and families to escape wars, famine, and poverty. Whether for political, economic, social, or religious reasons, people leave or migrate in the hope of a better future. From the 1960s onwards, Pacific Island people have migrated to New Zealand, particularly from Samoa, Tonga, Tokelau, Cook Islands, and Niue. In 2013 the current population of Pacific Islanders makes up 7.9% of the population of New Zealand. Of the total Pasifika population 38% is under the age of 18 so this is a very youthful population which is growing rapidly.

New Zealand is a bi-cultural and multi-ethnic nation, giving an equal significance to the indigenous Maori people. Pacific Islanders have a special constitutional and historical relationship with New Zealand, different from other migrant groups. The people of Tokelau, Nuie, and Cook Islands are New Zealand citizens and Samoa was administered by New Zealand from 1914 to 1962.

How then, does a member of a large community of Island- and New Zealand-born Pacific Islanders develop the kind of leadership to inspire their people to take part in important areas of education and literacy so critical to their future well-being? Traditionally Pacific Island communities are oral societies and many Pacific Islanders are still not engaging with libraries and reading, but rely on word of mouth, family, and relationships to make their way in New Zealand. One option could be to mount a crusade with flag flying, or to politicize, preach and demand attention to the challenges of first and second generation migrants from the Islands.

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Sidebar 6 (continued)

But one particular leader has emerged who leads with Island values and is to be credited with leading important developments in libraries and literacy. Her name is Judy Taligalu McFall-McCaffery and she is of Samoan ancestry. She is a librarian, fluent in Samoan and Tongan, with an understanding of other Pacific Island languages and was the first convenor and co-founder of the Pacific Information Management Network (PIMN).

Born as a middle child of 12, she quickly learned both to fit in and to put others first and believes you cannot achieve on your own compared with working with others. Personal and family honour is important in Samoan culture. Judy is working consciously with island values and leads by example. This is a not a conventional style of leadership, but involves a more persuasive "thought leadership". She is using these values to further librarianship, literacy, and Pacific Island recruitment into special and education libraries, an area which is so important for her people both in New Zealand and in the Islands.

Early in life Judy learned these island principles when dealing with people: Fa'aaloalo = Respect, Tautua = Service, and Va Feiloai = Relationships. She is also effective through academic scholarship. She organizes activities which involve sharing and reciprocity, practical help, and food! The Samoan and Tongan way is small talk first/talanoa and have food and get down to business later. Through talanoa you learn more about people and even your business is often done before you know it!

Fa'aaloalo = Respect. "You take people on a journey with you, before and after you meet them."

Many of Judy's activities tie in island traditions which instruct at the same time as you are entertained. Judy has a gentle approach and combines warm welcomes, and hospitality at all meetings. She speaks in the Pacific languages, dances for us, tells stories, wears island clothing. Everyone sings – while she interests and educates librarians about the Island viewpoint. Judy uses each occasion, email, and meeting to greet you in the beautiful Pacific languages of Samoa or Tonga as well as Maori and often other Pacific Island languages.

Tautua = Service. "Service is the pathway to authority if you are leading people."

An important activity every year is to return something to the Islands. Judy collects donations of unused text and other books in New Zealand and sends them to libraries in Samoa, Tonga, and other Pacific Islands. Judy has gently inspired a new way of looking at the islands as a place where we can go to obtain interesting and valuable printed materials for our libraries. Formerly the University of Auckland sent collection trips to obtain as much material as possible, but Judy would prefer New Zealand librarians see this as a chance to reciprocate and deliver materials, offer digitization and donate books to support the future of Island libraries. A book in the Islands may not last longer than a few years as the climate and humidity have a way of exhausting them! Ongoing sustainable reciprocal relationships are established and such networks are invaluable not only for collections but for Pacific researchers and other doing Pacific research at university.

Va and Va Feiloai = Relationships. "The more the University does to reach out to communities, the better its reputation will be."

Judy is highly regarded for her knowledge on matters concerning Pacific people. Her advice and thoughts are sought and valued by Pasifika communities both within and outside of the university. Working through professional and formal networks, such as the Library and Information Association of New Zealand Aotearoa (LIANZA), enables her to advocate and lobby for digitization and access of Pacific Islands materials by Pacific communities, e.g. for Pacific Islands newspapers to be included in the *New Zealand Papers Past* digitization project. A significant part of New Zealand history would be missing if the New Zealand citizens of Tokelau, Niue, and Cook Islands ethnicity were excluded. Judy networks in a subtle way, building respect and trust, and obtains assistance for furthering her projects by persuasion, and by inspiring and mentoring librarians in New Zealand and Pacific Islands libraries.

Through scholarship Judy shares Pacific knowledge by writing articles and presenting papers at seminars. She is an expert in the education of Island students, and their style of learning and is the Pasifika Advisor for the Open Polytechnic Library and Information Management undergraduate qualification, to review modules to be inclusive of Pasifika library users. A keen advocate of bi-literacy Judy presents at international conferences on bilingual education. The latest, the Oceania Comparative and International Education Society OCIES Conference held 3–6 November 2015 at the University of the South Pacific Emalus Campus in Port Vila, was a Pan Pacific event. In 2011 Judy organized and submitted a petition to the New Zealand Parliament with 7,000 signatures to have Pacific languages and literacies recognized in education and civic society.

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Sidebar 6 (continued)

New Zealand librarians now acknowledge a multicultural society and reach out to Pacific Island communities in a number of ways. They create reciprocal relationships with Pacific island groups and individuals, holding events in their libraries and focusing on encouraging Pacific people to come in and use their services. Public and academic libraries are setting up strategic programs to enhance Pacific Island language use in the staff, as well as building collections in Pacific languages in print and digital form.

The Pacific Information Management Network (PIMN) works with Pacific communities and educators, emphasizing the importance of collections, information and academic literacies, and the use and preservation of Pacific languages. The group also supports Pacific Island librarians who work with heritage and cultural materials in the Galleries, Libraries and Museums sector.

A critical factor in the success of Pacific Island peoples' use of libraries is for there to be Pacific Island staff working in them as role models and leaders. In 2013 there were 207 people of Pacific origin working in libraries compared with 156 in 2006. PIMN is strategically working to build capacity and capability for its members and those working with Pasifika peoples and information.

A Pacific Island librarian, leading from the middle, with persuasive and gentle Island ways of working, can take much of the credit for these developments. How does Judy achieve so much, besides working fulltime, with extended family, community and church responsibilities?

She says by "Having the vision in play – you do things with a purpose, and it will have an impact, if not now, somewhere later, it will happen."

The Balanced Scorecard. Regardless of the type of organization, one of the most effective tools a leader can use to demonstrate alignment and contribution is the Balanced Scorecard. It is a well-established tool both within and outside the information profession. The Scorecard can be used to track and evaluate all the domains we have discussed above and can be customized as needed. Matarazzo and Pearlstein (2007) have explored this approach in an article for one type of library which could be expanded to cover all library types. For instance, recall Figure 3 above and the role of IS management on the supply side. In the competition for resources, the primary and ongoing task of the library leader is to understand the strategy and goals of the parent organization. It is also critical to understand the information needs of IS customers within their work context. Whether this information is garnered from interviews with top management or ongoing networking with other decision makers and department heads and/or through focus groups or surveys with customers, the Scorecard provides a construct through which this data can be analyzed and incorporated into the leader's strategy.

The most important aspect of implementing the Scorecard, however, is that it is a strategic tool and its use must be ongoing. The leader and manager must put in place mechanisms to collect the data that populates the scorecard and regularly analyze that data for insights that drive sustainability.

The reality information services professionals face is that disruption is either imminent or already upon us. A successful library leader recognizes this and creates a strategy that incorporates ongoing data collection that anticipates the "what if" scenarios as well as the value of having the ability to demonstrate contribution in the context of achieving the parent organization's success, however that is defined and however often it might change.

Key takeaways

These are turbulent times. According to a recent McKinsey Global Institute report (Dobbs et al., 2015) "this is a moment for companies to rethink their organizational structures, products, assets, and competitors". If you are currently a leader in the information profession, or someone who aspires to a leadership role, you need to recognize that this "rethinking" must not be confined just to companies. Library leaders in all types of libraries and other information management-related situations need to be thinking about the "value" of the information and services that flow through their enterprise and how that value can be demonstrated to be aligned with the enterprise's definition of success. This is not the time for resting on laurels or waiting to see what might happen. Nor is it the time for information professionals to define their capabilities according to the strictures of a job description. Rather, leaders throughout the information professions must be focusing their longer term strategies on contributing to the sustainability of their employers and how the IS skill set

supports that sustainability despite the disruptive times. Here are some ways you can do that:

1. Successful leaders understand the impact of the economy at all levels on their organization and anticipate how to adapt to achieve sustainability;
2. Information professionals from around the world, from all types of environments, have provided Insights into how to lead in disruptive times. To benefit from these insights leaders must take the time to read their professional literature and network with peers;
3. Regardless of the type of organization supported, the competition for all resources is fierce so IS leaders who align their services with their employer's definition of success and who demonstrate how IS contributes to that success will be more likely to achieve sustainability;
4. The four domains of finance, fundraising, organizational politics, and evaluation are inextricably linked. Understanding their ebb and flow in your organization and mastering each domain are essential to formulating a sustainability strategy and to inspiring your team to operating on a daily basis in a way to help move toward the agreed upon goals;
5. Just as there is no one "right" model of service, there is no one "right" way to ensure financial sustainability for your IS. Creativity around fundraising (including the idea of cost recovery), and being willing to take risks are leadership qualities;
6. The leadership skill that underpins sustainability is political savvy;
7. If you cannot measure something you should not be doing it. Evaluation provides the ammunition you need to demonstrate your value (i.e. your contribution, what you bring to the table). Using the Balanced Scorecard, or some similar tool, incorporates into your strategy for sustainability the accrual and analysis of data in all the areas important to the success of your organization;
8. A leader needs to be guided by the answers to three questions:
   - How can we align our services with what our employer defines as success?
   - Who will make change happen?
   - How will we get there?

Declaration of conflicting interests

Funding

Notes

1. Here we are using soft dollars as a euphemism for funding that comes from outside your organization and is not guaranteed, but can be both impermanent and uncertain. For example, federal, state, or other types of grants. Also included in this definition are matching grants which require your organization to meet a specific budgetary amount to secure the grant and "seed" grants that fund an initial commitment but require your organization to continue permanent funding at some future date.
2. The definitions are quoted from Wikipedia.
3. The skill set is a combination of skills necessary for the completion of all tasks pertained to a specific function. Library services are regarded as functions.

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Approaches and considerations regarding image manipulation in digital collections

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Abstract
This article discusses image manipulation in the context of digital collections at academic and cultural heritage institutions. The nature of this manipulation is not intended to be deceptive or misleading. Instead it aids users in accessing information present in visual material collections. Although well intended, the manipulation of digital objects does beg some ethical considerations. In its discussion of image manipulation, this article highlights common approaches to image manipulation that may already be present in many digital collections and it is aimed at starting a larger conversation about post-processing standardization.

Introduction

Image manipulation is nothing new, only the process by which manipulation is performed has evolved, namely through the shift from manual adjustments to computer software (Bernstein 2012: 201). Just as the term *Google* has become a commonly used verb, so too has the term *Photoshop,* to express the concept of image manipulation. As a result of the common context in which modern image manipulation occurs, the reputation of this process often suffers from being associated with misrepresented, exaggerated, and false information. However, image manipulation, or image enhancement, is not always a bad thing; if applied in ways discussed in this article, it can reveal information that would otherwise not be visible (Maini and Aggarwal, 2010). This is particularly true in academic and cultural heritage institutions where historically and culturally significant photographic images are digitally converted into visually appealing and information-rich sources of local and cultural identification. At the same time, image manipulation can serve the academic community seeking visual information on a variety of historical interests. Written from my experiences in the field of digital collections, and from the perspective of a librarian rather than an imaging scientist, this article discusses relevant approaches to image manipulation that may occur during post-processing in heritage-based digital collections and how this manipulation, if done ethically, transparently, and sparingly, works together with accurate digital capture to aid in the increased yield of visual information from photographic digital collections.

Background

As the demand for digital collections grows (Novara, 2010), the accuracy of digital capture becomes more important. Fortunately, the tools and techniques of digital capture are steadily improving, allowing practitioners to meet evolving expectations. A high resolution image from 10 years ago may not compare to a high resolution image according to today's standards,

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simply because the technology and expertise were not as advanced as they are today. Despite improved technologies, accurate digital capture is by no means an easy task. Many elements of the capture-to-delivery process must be considered to provide the public with access to quality digital images that accurately represent historically and culturally significant objects. The quality of a digital capture is certainly impacted by the quality of equipment being used. Combining sufficient technical specifications, including everything from the lens, camera, and sensor, to the lighting, equipment profiling, and capture software, increases the probability that a resulting image will be of a quality that adheres to commonly accepted digitization standards.

Producing a digital image requires both hardware and software, arguably in equal proportions. Hardware, or digitization equipment, produces raw data and software makes those data usable. In making the data usable, software has multiple roles, such as allowing the capture device to operate; providing the ability to analyze the raw data received from the capture device to insure proper focus, color, and lighting; and allowing the user to manipulate the digital object from a standpoint of how the human eye interprets the information. This last step requires that "the observer … make a judgment under the prevailing viewing conditions, according to his or her visual acuity, experience, and preferences" (MacDonald and Jacobson, 2006: 357). With the proper integration of hardware, software, and skill, we can strive to make the final image accurate as compared to the physical object being captured.

Color management through the use of color profiles is an essential part of an ideal color managed workflow (Williams and Stelmach 2010: 46); however, despite its importance, "the effort of calibrating equipment and capturing [International Color Consortium (ICC)] colour profiles has not yet been universally adopted by all digitisation studios" (Grycz, 2006: 48). This may be due in large part to the historical availability and affordability of digital capture equipment and how equipment today is generally more accessible; but the theory behind digitization has not followed the same expansion and remains somewhat removed from the general librarian or archivist. With that, the understanding of how profiles are directly related to the rendering and transformation of colors from capture to output seems to have also been muted. The use of ICC color profiles along with the use of spectrophotometers, colorimeters, delta E analysis, color space and gamuts, and benchmarking are all common practices when emphasizing proper color management during the digital conversion process.

Finally, this article uses the RGB (red, green, blue) color mode when discussing approaches to post-processing. "All scanners and digital cameras create RGB files by sampling for each pixel the amount of light passing through red, green, and blue filters that is being reflected or transmitted by the item or scene being digitized" (Williams and Stelmach, 2010: 5). Bit-depth on the other hand relates to the amount of information a single pixel represents (Zhang and Gourley, 2008: 58). A bi-tonal image consists of 1-bit of information per pixel, represented as either a 0 or 1, black or white, respectively, and it can be thought of as having 2^1 possible shades; a grayscale image typically consists of 8-bits of information per pixel, represented as one of 256 shades between 0 and 255, or between black and white, and it can be thought of as 2^8 possible shades; and a color image most often consists of 24-bit, or 8-bits of information per pixel per color-channel, and it can be thought of as 2^{24} (2^8 x 2^8 x 2^8) possible colors (Williams and Stelmach, 2010: 4). For more in-depth information about the theories and their implementation in this section, the Federal Agencies Digital Guidelines Initiative (FADGI) *Technical Guidelines for Digitizing Cultural Heritage* (Williams and Stelmach, 2010) serves as a powerful resource tailored specifically to the cultural heritage field.

The importance of pre-capture setup

The process of digitization follows the linear progression of the numeric interpretation of light reflectance from an original source to a rendering (Burns and Williams, 2007), and ultimately to an output surrogate such as a printed or digital image. Using this perspective when performing digital conversion allows the imaging specialist to understand the image as information, or data, represented as color. The greater the bit-depth, or amount of information per pixel, the greater the yield of data in an image (Zhang and Gourley, 2009: 58). As a result, scanning in higher bit-depth helps to avoid posterization, particularly in high contrast images. Digital encoding is reliant upon equipment that is properly calibrated, as well as the proper use of profiling in an effort to reproduce as closely as possible a digital rendering that matches the reflected colors and properties from the physical item being captured. Emphasized earlier, the use of ICC color profiles is essential in maintaining a proper color-managed workflow. Phil Green gives a summary in his chapter titled "Colour management in heritage photography":

> The International Color Consortium … has specified a method for managing colour image reproduction in

digital systems. The key element is the profile – a data structure that contains the colour device characteristics. Profiles are linked through a profile connection space (PCS) which defines the colorimetry. There are two requirements for using ICC profiles in the colour imaging workflow: first, the set of profiles corresponding to each of the input and output devices in the imaging chain; and, second, an ICC-aware application which calls a colour matching module (CMM) to perform each of the colour transformations. (Green 2006: 314)

Employing a workspace that is color managed is one important step in the pre-capture setup. Combining this with adequate resolution as well as sufficient bit-depth will contribute to a more accurate digital capture, which in turn impacts the requirement for post-processing.

It is important to identify the desired informational output goals prior to performing digital conversion, such as access to specific information, preserving a physical object, or increasing general viewership (Stelmach, 2010). This is particularly relevant when examining materials that are damaged, as the objective enables the technician to take the necessary pre-processing steps to ensure the resulting image contains enough information to be enhanced during post-processing. Adjusting a scanner's internal histogram prior to performing a digital capture allows for greater sensitivity and control over the capture of highlights, midtones, and shadows. For example, since silver grains clustered together display as black in a negative image (Allen, 2011: 3), a dense negative, or one that contains a high concentration of silver grains, can exceed the capability of a scanner to capture, particularly in the highlights of the image. Without adjusting the scanner's histogram before scanning, the information present on the negative would not be captured or it would be incomplete. In this case, the highlights would be "clipped", or displayed at an RGB value of 255, or the threshold of pure white. Adjusting the histogram is essentially adjusting the tonal thresholds to make sure the highlight values are well below 255 and thereby becoming visible in a digital rendering (National Park Service, 2008). Figure 1 and Figure 2 illustrate a dense glass plate negative, and how making both pre- and post-processing adjustments yields an image with many elements that would have otherwise not been visible.[1]

Although using a scanner with a greater optical density range will help capture a greater tonal gradient (Epson America, Inc., 2010), when working with extremely dense negatives the capture technique will play a vital role in revealing information

Figure 1. Scan of a dense glass plate negative having undergone no post-processing other than being inverted.

Figure 2. The same negative in Figure 1 after having undergone histogram adjustments and post-processing.

that may otherwise be obscured. As in the example above, the concentration of silver grains may be so dense as to not allow enough light to pass through regardless of adjustments to a scanner's histogram. In this situation, the capture technique must again be altered to yield a more complete set of information, and overcoming this issue calls for a more intense or directed light source. This uses the same concept that scanners use to capture transmissive materials (i.e. the transmissive material being placed between a light source and a sensor), but instead of using a scanner, a mounted digital single lens reflex (D-SLR) camera or a digital back paired with an external light source are used. By placing the transmissive material between the light source and the camera, more information can be captured among highlight values in a dense negative. It should be noted, however, that without taking the proper pre-processing steps, as in the above example, retrieving lost highlights becomes a potentially impossible task. Furthermore, even if the highlights are not entirely clipped, artificially enhancing information that is not fully present during post-processing may result in degraded image quality.

Why do we bother? Some applications of image manipulation

Focusing on the post-processing component independent of the pre-capture and capture steps, there are many instances when image manipulation is needed to produce a desired image. This section focuses on three such examples.

Restorative manipulation, or "original accuracy"

The term "original accuracy" may not immediately be recognizable, but the concept likely is. The term refers to the idea of manipulating an image during post-processing in order to produce a final product most similar to how an artifact *may* have appeared at the time it was created. Figures 3, 4, and 5 demonstrate one example of restorative manipulation.

This concept presents many obstacles as the variables regarding the current state of an artifact may range from simply fading over time to actual physical damage. This method of post-processing may require knowledge of the chemistry behind photographic paper and color pigmentation. This example is more concerned, however, with the steps that can be employed to produce digital content that closely mimics how an artifact may have appeared at the time of inception. This appearance is based on accurate capture and photographic experience as it relates to common occurrences seen in the aging of visual materials, and as a result highlights the contrast between objective and subjective image quality (Frey and Reilly, 2006). Since it can be the case that those acting as digital imaging specialists in local and state heritage institutions do not have a background in the color or imaging sciences (Shreeves, 2004), focus should be placed upon accurate capture and understanding a few post-processing concepts, including: sharpness, contrast, saturation, highlights, and shadows.

A common example of performing steps to obtain original accuracy can be seen in the digital conversion of aged transparency slides. The different rate at which the dye layers degrade over time results in the increased or decreased appearance of particular colors based on the speed of degradation (Image Permanence Institute, 2004). In this situation, accurate digital capture will certainly present the artifact as it appears at the time of digital capture, but it will not necessarily produce the image as it likely appeared at the time it was created. To achieve original accuracy, the accurate digital capture will have to be manipulated during post-processing, and steps to correct the color will need to be taken. A resulting digital image is not a replacement of the physical

Figure 3. Scan of a circa 1907 photograph that has suffered physical damage.


**Figure 4.** Same photograph from Figure 3, but having undergone some digital restoration.

Figure 5. Same photograph from Figures 3 and 4, having been fully restored.

artifact, but simply an enhanced version of that artifact. In order to preserve credibility and trust, it is recommended that an online exhibit or digital collection display each image side-by-side for full
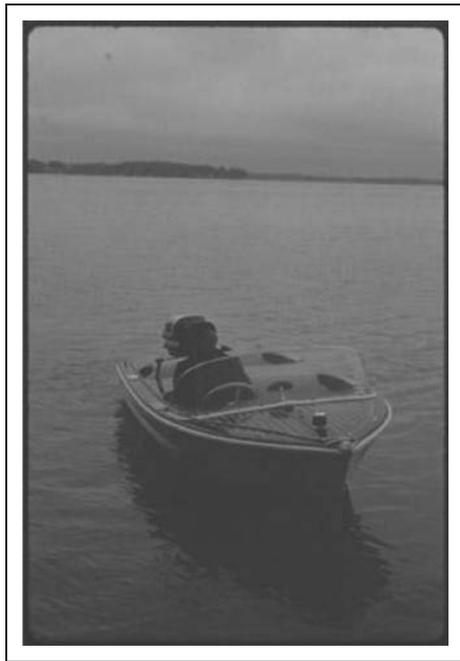
Figure 6. Transparency slide from circa 1960 showing signs of dye degradations.
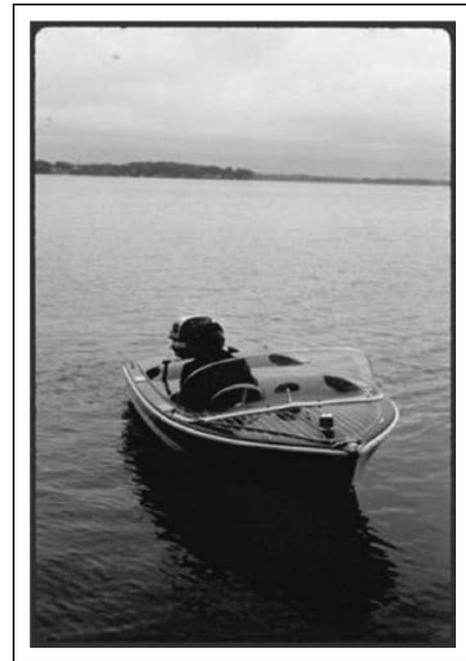
Figure 7. Same photograph as in Figure 6 after undergoing color adjustments.

disclosure and transparency. This best-guess approach has the potential to yield an image that may more closely resemble the original image when it was created, while also improving the aesthetic quality and the potential of increased informational properties. Figure 6 is an example of an aged transparency slide. As some transparency slides age, they undergo a chemical variety of environmentally induced decay that has expedited the dye degradation process (Adelstein, 2009: 2). A common pink or reddish hue can be seen in similar examples and is a result of the magenta dye fading more slowly than the cyan and yellow dyes (Image Permanence Institute, 2004). Figure 7 is a result of digitally manipulating the colors in post-processing using Adobe Photoshop, leading to a more relatable and lifelike image.

Similarly, this phenomenon of dye degradation is not limited to only transparency slides, but it extends to any photographic format that uses dye combinations to produce a color image (Image Permanence Institute, 2004). Reactions to external or environmental conditions such as light, humidity, temperature, and handling can result in the accelerated degradation of materials, as well as lead to additional reactions among materials (Image Permanence Institute, 2004). Through the thoughtful application of post-processing adjustments, some of these naturally occurring and environmentally induced physical alterations can be corrected or reduced in a digital rendering.

Compensatory enhancements

As the world of online information accessibility continues to grow, so does the role of and demand for digital content (Hughes, 2003: 4). Such demand has created a more diverse market for technology related to preserving and disseminating cultural heritage, with the cost of some of that equipment now being within the reach of smaller institutions (Ritchie, 2011: 16). As a result of this market diversity and equipment availability, it is relevant to discuss the role of post-processing in fixing rendering or capture inaccuracies and using software to compensate for ''inadequate'' equipment. As important as accurate digital capture is, ''an image digitization workflow invariably involves image processing beyond the original capture process'' (Jones and Honsinger, 2010: 92). A subjective approach to perceived image quality includes tone, sharpness, color, noise and graininess, and naturally occurring defects (MacDonald and Jacobson, 2006: 362–365), and there are many software applications out there that allow users to make adjustments that satisfy those aspects within an image. Capturing in RAW format, during which the sensor information is digitally converted ''without being subjected to any major processing by the camera's embedded software'', allows for even greater flexibility during post-processing (Verhoeven, 2008: 2010). Although flat field lenses are designed to eliminate most distortions (Ray, 2011:191), such as pincushioning and barrel distortions, Adobe Photoshop, for example, enables users to adjust for these

distortions if using lenses more prone to distortions when performing digital capture. The software Equal-ight makes it possible to capture large format items while ensuring light is equally distributed from corner to corner, thereby avoiding light falloff, which is inherent in all lenses (Goldman and Chen, 2010). These few examples of post-processing to compensate for capture inaccuracies serve as critical components during the process of accurate digital capture, and should be seen as a way for digital production units not using state-of-the-art equipment to accomplish accurate digital renderings of historically and culturally significant artifacts.

Public appeal, aesthetics, and academic pursuits

The result of accurate digital capture and variations of post-processing is digital content that provides varying aspects of access for users. In particular, access in the forms of public appeal, aesthetics, and research-oriented informational output can satisfy the ever-increasing group of online researchers, as well as serve as an important part of fundraising, allowing an institution to showcase materials that may have otherwise been uncataloged and unknown to the research community (Novara, 2010). However, providing access may require more than simply making a captured image available on the Internet. For the curious user browsing images in a collection, with no information or subject specific agenda, providing images that are aesthetically pleasing may have a greater potential to generate more views than other images lacking this appeal.

A relatively moderate example of improved aesthetics can be seen in Figures 8, 9, and 10. Figure 8 is a negative that was clearly not cleaned in any way prior to being scanned. As a result, in addition to any scratches that may be present, dust and hair are quite apparent on the resulting digital rendering. In fact, Figure 9 is a magnified view that makes clear the image of an ant that made its way onto the physical negative at some point in the negative's life. Although perhaps public appeal and academic pursuits are not inhibited as a result of visible dust particles, hair, or other defects, the overall aesthetics of the digital rendering are certainly improved by digitally "cleaning" the rendering during post-processing. Of course this raises the question as to whether attention should be given to those defects as part of the artifact or simply as foreign objects introduced into the image after the photograph was created. Depending on perspective, institutions may react differently in handling those defects. Figure 10 is the resulting image after having undergone this cleaning and other minor adjustments during post-processing.
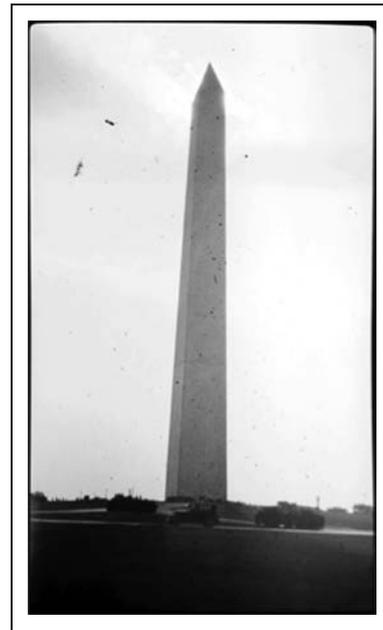
Figure 8. Black and white negative displaying numerous defects.
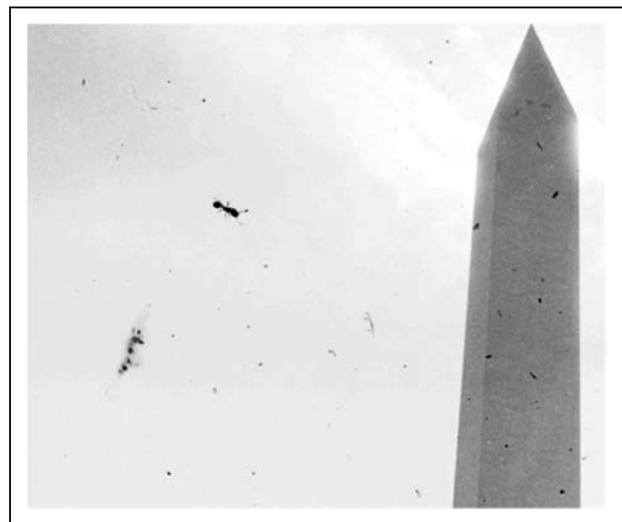
Figure 9. A close up of the upper left corner of Figure 8, highlighting some defects including an apparent ant.

Making adjustments during post-processing, if done in moderation and with a skilled eye, can enhance a user's experience from an aesthetic point of view. Viewing a once dye-faded transparency slide that now resembles color qualities of a photo taken yesterday; seeing an image once lost to an overexposed glass negative revealing details about an event 100 years earlier; or downloading an image that once was torn and scratched but is now digitally reassembled, are all examples of appealing to general users through applying moderate processes aimed at improving aesthetics. In the context of value, or impact, as it relates to a user's emotional response

Figure 10. The same photograph as Figure 8, but having undergone digital "cleaning" to remove artifacts and defects.

while satisfying a sense of curiosity, or knowledge (Chen and Granitz, 2012), it is easy to understand how enhanced aesthetics and informational output have the potential of generating increased and improved use among general users.

Some considerations

Of course the topic of image manipulation is not black and white, but very much a subject with many gray areas. Some of these areas are discussed in this section.

Master and derivative files

It should be noted that there may be more than one surrogate produced during the digital conversion process, namely the master file and its derivative files (Smith, 2006: 12). These can also be thought of as the preservation file and access files, respectively. The preferred preservation file format is more often than not a TIFF image file (Williams and Stelmach, 2010: 50), and it is designed to be of a superior resolution and bit-depth (Smith, 2006: 11) and undergo no alterations from the original capture. This file might also picture a grayscale or color bar to allow the future viewing of an object to be accurate with regard to color and grayscale values (Grycz, 2006: 47), and it can serve as a significant safeguard against color and tone manipulation.

The access files, on the other hand, are designed to provide easy web delivery of image files (Smith, 2006: 10), and as a result are often scaled-down versions of the preservation file including the file format, often a JPEG, JPEG2000, or PNG, as well as the resolution and bit-depth. Ideally it would be only these access files that undergo post-processing manipulation, such as sharpening, and would be delivered via a content management system (Van Dormolen, 2012). With this workflow in mind, there can in fact exist a digital conversion process that accommodates both accurate digital capture and image manipulation separately. So the question then lies in what happens before the preservation file is used to produce derivatives. Is the image converted from RGB to grayscale? Presumably the image is cropped and rotated, if need be. How about any adjustments to the shadow, midtone, or highlight values? Although these are seemingly minimal adjustments, at what point does the image cross the threshold from an accurate digital capture to a manipulated image? While it is possible to preserve the layers of adjustments within the image file, such as when using Adobe Photoshop, this adds to the file size and ultimately impacts storage capacity and costs. This reinforces the importance of documentation and transparency when making image adjustments during post-processing to ensure that regardless of whether a file is deemed a preservation or access file, the audience is informed of any alterations made post-capture.

There are limits

Finally, it probably goes without saying that not all damaged, overexposed, and underexposed images can be salvaged. Figure 11 is a typical example of a print photograph approaching 100 years of age displaying the likely symptoms of continuous exposure to sunlight. Some details may be recoverable, but the vast majority of the image, or what remains, is about as visible as it can be.

Although there are many steps that can be taken to correct deteriorating photographs, if the data, or information, are not present in the physical object, there is little that can be done during pre- and post-processing. This serves as a good reminder that performing accurate digital capture of aging photograph collections in our libraries and archives can help to preserve culturally and historically significant visual artifacts before they reach the unrecoverable stage of Figure 11.

The ethics

Naturally the concept of altering an image brings up ethical considerations. Since heritage institutions are

Figure 11. A photograph from circa 1925 that has become irreversibly faded over time.

designed to promote and support the public good (Bishoff and Allen, 2004), it is hard to imagine image manipulation as a tool for deception in the academic and cultural heritage fields. Rather, image manipulation in heritage collections should be approached with transparency in mind and result in providing greater access and an enhanced visual experience (Bishoff and Allen, 2004). The problem arises when manipulation crosses the line and becomes propaganda, misinformation, or downright forgery (Hofer and Swan, 2005). Although we hope that the cultural heritage field is insulated from such problems, there is currently no accepted industry standard for post-processing of digital images equivalent to the digitization standards published by expert entities such as FADGI and Metamorfoze. As a result, it becomes difficult to know how much is too much, or if any at all is too much. The hope of this article is that what many in the field consider typical adjustments during pre- or post-processing are recognized to be accepted elements of image manipulation. It is not intended to cast a negative light on these manipulations, but rather to highlight and acknowledge that these changes are occurring during normal digital production workflows, and perhaps any alterations should be reflected in a digital object's metadata or in a digital production unit's written policies and procedures.

Conclusion

The art of photography is certainly no stranger to photographic manipulation with a long history and countless examples beginning soon after the commercialization of photographic equipment to present day Internet posts (Webber, 2000). Whether the motivation behind the manipulation is aimed at deceiving, persuading, amusing, or informing the audience,

photographic manipulation is a reality in both the analog and digital realms of the photographic record. With this realization in mind, a great challenge facing academic and cultural heritage institutions is first understanding the complexities and multi-scenario applications of pre- and post-processing techniques, and secondly how to create industry standardization and application of those processes. Just as general digitization standards exist, including resolution, bit-depth, and file format, so too should similar standards be developed to compensate for the increase in digital content production throughout the library and archives industries.

In fact, such standards would not only serve as a form of instruction for heritage institutions producing digital content, but they would help these institutions protect themselves from their own post-processing workflows. After all, an accurate digital capture is designed to be a digital representation of an original artifact, and the purpose of reformatting in the first place is to provide access to and preservation of that object. So if the intent of those conducting the digital reformatting would be to provide an accurate representation of the object, then employing the use of post-processing standards would only enhance any digital collection and its output.

Although there is a pixel-level difference between making minor linear adjustments, such as brightness, and more selectively manipulative non-linear adjustments, such as curves, these sometimes common practices are still forms of post-processing that are subjective by nature and at the very least need to be documented in digital object metadata (Rossner and Yamada, 2004). That is not to say that these manipulations are "good" or "bad", but without an appreciation and understanding of the *what*, *why*, and *how* of image manipulation, we open ourselves up to the possibility of altering our own collective cultural memory (Nash et al., 2009).

Digital capture can create a highly accurate digital rendering of reflected light from an object's surface, "providing the most authentic capture of [an] original" (Van Dormolen, 2012). Although not always required, in its simplest form, post-processing as image manipulation is designed to bridge the gap between the physical appearance of an object and the digital rendering. Such manipulation certainly can and has been abused for a variety of motives; however, through careful and consistent application, image manipulation in digital collections has the capability of being central to the production, access, and preservation of digital content in academic and cultural heritage institutions, second only to the camera itself.

Declaration of conflicting interests

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Note

1. All physical photographs are owned, have been scanned, and have undergone processing by the author.

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A review of theory-driven models of trust in the online health context

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Abstract

Generally speaking, theory-driven studies are more successful in producing a desired result than those missing the theoretical grounds. This paper aims to provide an informal assessment of theoretical foundations of trust models in online health context. After a review of literature, 12 theory-driven models were analysed in detail. The findings showed that previous models benefited from different theories within different disciplines (mostly from psychology). The technology acceptance model, the elaboration likelihood model, the theory of reasoned action and the health belief model were the most frequently used theoretical frameworks. The reviewed models were able to account for 23–69% of variance in dependent variables. In conclusion, although the health studies are very open to interdisciplinary theories, the inclusion of institutional and national cultural theories in future researches may enrich the current individualistic perspective with a broader context of society that jointly form trust behaviour and credibility judgements of health consumers in digital health environments.

Introduction

Today the Internet often serves as a medical and health diagnosis tool. About 70,000 websites were providing health information in 2000 (Grandinetti, 2000) and the number of these online information providers is increasing daily. Googling the word *diabetes* resulted for example in 1,990,000 pages, which shows the huge amount of information on diabetes on the Web (searched by the author, 10 February 2015).

A recent report published by Pew Internet and American Life Project showed that '35% of US adults have gone online to solve a medical condition', while only half of them 'visited a medical professional' to check it up (Fox and Duggan, 2013). A previous report in this series also reported that 'three million adults said that 'they' or 'someone they know' have been seriously harmed by following online health advice' (Fox, 2006: 8). Hence, access to and trust in accountable online information is vital in the health domain.

However, finding credible online information is not so easy and requires different competencies or skills. Many situational and contextual factors have an influence on accessing the relevant information, evaluating the retrieved information, trusting and finally acting on it to solve the problem at hand (Xie, 2011).

In order to study individuals' interaction with health systems, several researchers have investigated the trust formation of users in online environments, and they agree that trust is a 'multi-dimensional' (Casaló and Cisneros, 2008; Casalo et al., 2007; Chen and Dhillon, 2003; Flavián et al., 2006) and contextual or context-specific construct (Frank, 1988; Seckler et al., 2015). Because of this contextual nature of

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trust, different models of trust in different disciplines have emerged.

The existence of such models motivated some researchers to review them in depth. Xie (2011) reviewed 10 models of information searching and concluded that 'very few findings of user studies have been applied in information retrieval systems' design', and that there is no comprehensive model of information searching that fits for all contexts. The researcher remarked the need for models for 'cross-language retrieval'. Järvelin and Ingwersen (2011) reviewed the user-oriented and cognitive model of information retrieval and they claimed that in order to understand human interaction with systems and the information search process, both the systemic context (system, network and information space) and the socio-cultural and organizational context need to be considered. In another review on human-computer interaction research in information retrieval, Lin (2009) described some of the models in this research domain. The researcher concluded that 'system-centred' and 'user-centred' information retrieval researches complemented each other. In his review on information behaviour models, Wilson (2009: 2399) divided these models into three categories: 'models of activity' (or descriptive models); 'models that connect information seeking of individuals to their characteristics, information source features, or other behavioural aspects'; and finally, 'hypothesis-testing models' that test the relationships between variables of models. Wilson finally concluded that in order to get an enriched research area in information behaviour, it is fruitful to 'move from descriptive models to the development and testing of theory-driven models'. In a recent review on theoretical models of health information seeking on the Web, Marton and Choo (2012) analysed four theory-driven models in the online health context. They found that the reviewed models used multidisciplinary frameworks and had good prediction power for targeting the complex behaviour of consumers in the online health context. The theories behind the models were reported as the theory of planned behaviour, the uses and gratifications theory, the technology acceptance model, the health belief model, the expectancy-value approach, the embedded media perspective and the behavioural model of information seeking on the Web. The survey was the only research method used to test the correlations of the variables in the models, and all of the reviewed models used multiple regression analysis. Finally, the included models accounted for between 23% and 50% of variance in dependent variables (Marton and Choo, 2012).

In summary, reviewing both general information behaviour models and models devoted to an online health context, suggests the current user-centred approach in information behaviour models could be improved by considering community, culture and societal factors in future modelling.

Problem statement

In order to advance our understanding of interactive health communications of users and systems, both descriptive statistics and conceptual studies derived from theories are necessary (Marton and Choo, 2012; Wilson, 2009). Based on the 'epistemic function of models, theory-driven models are direct descendants of theory', and they are directly extracted from related theories (Portides, 2014: 81). Generally speaking, theory-based studies in social and behavioural science are more successful in producing a desired or intended result, than those missing the theoretical grounds (Glanz and Bishop, 2010). The health domain in not an exception, and it has been confirmed by some researchers that theoretical models of health behaviour are more effective than other models (Ammerman et al., 2002; Glanz and Bishop, 2010; Legler et al., 2002; Noar et al., 2007). In addition, developing and testing the theoretical models of (health) information behaviour will enrich this research field (Wilson, 2009).

To the best of our knowledge, no review has so far been published on trust models in the online health context, although some studies reviewed general models of information behaviour (Järvelin and Ingwersen, 2011; Lin, 2009; Xie, 2011), or broad health information-seeking models (Marton and Choo, 2012).

The current study will draw a general picture of the building blocks and theoretical foundations of trust models in the online health context. It will identify the possible gaps in these modelling and testing processes, and it will guide future researchers in applying a robust theoretical foundation. In addition, it can help to implement better health programmes and to identify the influencing factors on individuals or community groups (Glanz and Bishop, 2010).

To this end, Case's (2012) framework for reviewing human information behaviour studies is followed. In Case's framework, information behaviour reviews are categorized into four areas: 'information seekers by occupation (e.g. scientists, managers); information seekers by role (e.g. patient, student); information seekers by demographics (e.g. by age or ethnic group); and theories, models, and methods used to study information seekers' (Case, 2012: 295).

In line with the fourth category (theories, models and methods), the theory-driven models of trust in

online health context are reviewed selectively, and the following questions are addressed:

> Which theories have been used in modelling trust in the online health domain?
>
> How were the theories included and tested in the models (participants, research design and data analysis)?
>
> Are there any similarities/differences in the modelling of trust in the online health context?

Method

To reach the goal of this study, recent (from 2000 to 2015) models of trust in the online health domain were reviewed.

This review is focused on those studies that tested a model in the online health context and the trust issue that was prominent in the model. The scope of models is limited to health science. Thus, models of trust in other disciplines such as information science, management, business, and so on were not included in this study. Furthermore, those models in the health context that did not consider trust in their modelling, or considered general modelling of information seeking were not included in the review.

The emphasis of this review is on theory-driven models in the online health context. The studies that used general conceptual or pure descriptive models (without empirical testing) were excluded. In addition, those models that were focused on trust but not theory driven were also omitted.

The search was performed with some general queries such as online health information seeking, trust in online health, credibility of online health information, interactive health communication models, and so on in Web of Science, Scopus, Google Scholar and Google (for in-progress or unpublished works) to trace and find the relevant studies for inclusion in the review. The relevant publications were not limited to any specific format, but English publications were chosen in order to have the same ground for analysis.

This review is selective, that is not a systematic one. However, we screened the studies and references included in previous reviews on online health information to find possible items for inclusion. These screened reviews are presented in Table 1.

Finally, 12 theory-driven models were included in this analysis. The sources of studies included in this review are shown in Table 2.

Analysis

In this section, each study included in this review is analysed based on the theoretical roots, the relationships of the variables of the model, the participants in the studies, research design, and model measurement and accountability.

Liang et al. (2005) used the theory of reasoned action and the theory of transaction cost economics to investigate trust antecedents in online prescription filling by consumers. An online questionnaire (survey) was distributed among 145 undergraduate business students at a university in the south-eastern region of USA. The students were 18–43 years old (average age = 21.58 years) and mostly male (59%). Most of the participants (89%) had previous online shopping experience. Two online pharmacy websites were introduced in the questionnaire and the participants were asked to surf them and to answer the questionnaire. In the estimated model, the antecedents of trust (i.e. calculus-based trust, knowledge-based trust and institution-based trust) significantly and positively influenced the students' trust in online prescription filling. The opportunistic behaviour of health service providers (drug retailer) influenced the perceived uncertainty of online prescription fillings by students. Trust reduced uncertainty and impacted on the intention to use the online prescription fillings. Finally, the high uncertainty resulted in reduced intention to use. The estimated model based on partial least squares regression accounted for 36% of variance in intention to use online prescription filling by students.

Mongeau and Stiff's (1993) model and the elaboration likelihood model were the foundation of an experimental study by Hong (2006). The participants in the study were 84 students (62% female) at a major university in California, USA, with mean age of 21.64 years. Three desktop computers with high-speed Internet connection were used for web searching by participants. The tracings of the search sessions were registered by a software program via log registration including time spent per page and number of visited pages. The respondents were asked to surf as many web pages as they liked to find the information in order to recommend it to a family member who required it. Two search tasks were provided for the participants: a general task that was to locate any 'tobacco cessation strategy', and a specific task that was to find a 'specific tobacco cessation method'. The task complexity were measured by time spent per web page in minutes, the number of pages used for each search, and some statements about the degree of difficulty of finding the required information. The final

Table 1. Previous reviews on online health information studies.

Author(s)	Databases (sources) searched	Number of included studies
Anker et al. (2011)	• PsychInfo (1978–2010)	129
Bernstam et al. (2005)	• PubMed (1995–2003), • Google, Lycos, Yahoo, Excite, and Webcrawler (July 2003) • proceedings of American Medical Informatics Association (1998–2003)	273
Eysenbach et al. (2002)	• MEDLINE and PREMEDLINE (1996–September 2001) • Science Citation Index (1997–September 2001) • Social Sciences Citation Index (1997–September 2001) • Arts and Humanities Citation Index (1997–September 2001) • LISA (1969–July 2001) • CINAHL (1982–July 2001) • PsychInfo (1988–September 2001) • SIGLE (1980–June 2001)	79
Marton and Choo (2012)	• The analysis of previous reviews of McMullan (2006), Anker et al. (2011) and Renahy and Chauvin (2006) • Scopus (2000–2011) • Web of Science (2000–2011) • ProQuest Dissertations & Theses (2000–2011) • Google	4
McMullan (2006)	• PubMed (1985–2005) • British Nursing Index (1985–2005) • CINAHL (1985–2005) • Ovid (1985–2005) • AHMED (1985–2005) • Google	Not stated
O'Grady (2006)	• MEDLINE (1966–2004) • PsychInfo (1840–2004) • ERIC (1966–2004) • ACM • Web of Science (2002–2004)	Not stated
Renahy and Chauvin (2006)	• MEDLINE (2000–2005) • Banque de Données en Sante Publique (BDSP, French public health databank) (2000–2005)	60

website selected by the respondents was used to measure the credibility, the intention to revisit the web page and the difficulty of finding required information. Then, the participants were asked to give their opinions about the credibility of web pages found based on a Likert-style questionnaire. Two models were estimated in this study, the general task model and the specific task model. In both of them, the website credibility is influenced by reliance on the Web for health-related information, and credibility dimensions (trust/expertise and depth) are significant predictors to revisiting a website in future. However, the knowledge is a significant predictor for the general tasks that require more cognitive ability. The models were tested through structural equation modelling, i.e. path analysis. The general search model accounted for 14% of variance in trust/expertise, 5% in goodwill, 9% in depth and 23% in intention to revisit a site. The specific search model accounted

for 9% of variance in depth, 9% of variance in trust/expertise, 4% variance in goodwill and 24% in intention to revisit a site.

In order to study trust attitudes towards health information sources, Song and Zahedi (2007) applied the technology acceptance model and the actor network theory in their survey. The participants in the study were 494 graduate and undergraduate students at two large US business schools (in the Midwest and South). The average age of participants was 21.1 years. The participants were asked to first choose a health/fitness problem based on their interest, and then to select one of the health infomediaries WedMD.com or MedPlus.com to find some general information about it. After visiting the website, they were asked to provide the retrieved information from the health infomediary and finally to fill in the questionnaire. In their proposed model, the health info mediary (HI) environment (including favourable rep

Table 2. The current review and the source of included studies in the review.

Study included in this review	Found in following source
Harris et al. (2011)	Scopus
Hong (2006)	Marton and Choo (2012)
Johnson et al. (2015)	Scopus
Liang et al. (2005)	Google Scholar
Lim and Kim (2012)	Scopus
Lim et al. (2011)	Scopus
Mou and Cohen (2014a)	Scopus
Mou and Cohen (2014b)	Scopus
Song and Zahedi (2007)	Scopus
Yi et al. (2013)	Scopus
Yun and Park (2010)	Marton and Choo (2012)
Zahedi and Song (2008)	Scopus

utation of HI, prior positive experience with HI and structural assurance of the Web), the information quality of HI (understandability, relevance, usefulness, reliability, adequacy), the system quality of HI (ease of use and interactivity), and the trust signs of health infomediaries had an influence on trusting beliefs (ability, benevolence, integrity), and consequently, impacted on intentions to use HI in health decisions. Furthermore, the web users' propensity to trust negatively impacted on the risk. Subsequently, the risk decreased the intentions to use HI for health decisions. The model was tested via a structural equation modelling, and it accounted for 39% of variance in intention to use the health infomediary.

Zahedi and Song (2008) applied agency theory and information integration theory to study the dynamics of trust in the online health context. They surveyed 209 students in two universities in USA (one in the Midwest and the other in the South). Their study was performed in a lab experiment in three phases. In the first phase (T1, at the beginning of a month), participants were asked to freely select one of the health infomediaries WebMD or MedlinePlus, and search the selected website to get the required information about health and medical problems in which they had an interest. Then, they were asked to answer some questions regarding the content of the chosen health infomediaries, and finally they were given an assignment to complete later (Phase 2). At the end of the month, those participants who had completed the assignments were allowed to take part in the final survey (T2, Phase 3), which was about their present perceptions and beliefs about the health infomediaries. Generally, this study presumed trust as an evolving phenomenon. It examined the trust-building process based on three estimated models: the analysis

of trust in episode T1 (the first assessment of participants' trust in health infomediaries); the analysis of trust in episode T2 (after one month, the second assessment of participants in health infomediaries); and the transition process from T1 to T2 (the evolution of trust over time). The comparative statistics analysis showed a strong relationship between trustworthiness beliefs and trust attitudes over time, and the increasing influence on information quality perceptions. The dynamic model of trust showed satisfaction as the outcome of information uses. The estimated model based on structural equation modelling, accounted for 65% and 52% of variance in trust attitudes in T1 and T2, respectively.

Through mixing the variables of the technology acceptance model and the health belief model, Yun and Park (2010) administered a survey with convenient sampling to further investigate the disease information-seeking behaviour of students. The eligibility of participants in this study was the age (20 years old and more) and previous search for disease-related online information during the past six months. Most of the respondents ($n = 212$) were women (62.7%), between 20 and 49 years old (about 95%), and college and university graduates (71.7% of the total). In the estimated model, the health belief model variables, health consciousness and perceived health risk, impacted on the perceived usefulness of information provided on the Web. Perceived usefulness, perceived credibility and perceived ease of use influenced on attitudes regarding online disease information, and finally they resulted in intention to use disease-related information on the Internet. In addition, perceived ease of use and perceived credibility of online information were affected by the Internet health information use efficacy of consumers. Although the model measurement was done via a structural equation modelling (path analysis), the R^2 was not reported in their study.

Harris et al. (2011) used the extended parallel process model and protection motivation theory to investigate trust in online health information and advice. They prompted an online questionnaire on the *hungersite.com website* and gathered 561 responses. The participants were mostly female (72%), ≥ 18 years old, with previous search experience for themselves, and mostly from USA (59%) and UK (17%). After a structural equation modelling, information quality and impartiality directly predicted trust in online health and advice. In addition, personalization and credible design of website had an indirect and mediating role on trust through influencing information quality and impartiality. Furthermore, threat and corroboration influenced

trust in online health and advice, and the readiness to act on advice. Finally, trust and coping influenced readiness to act on advice provided in a health website. It is worth mentioning that adding the eHealth variables (perceived threat, coping and corroboration) increased the prediction power of the model. The estimated model accounted for 66% of variance in trust ($R^2 = 0.66$), and 49% of variance in readiness to act on the advice ($R^2 = 0.49$).

Lim et al. (2011) used the technology acceptance model and social cognitive theory to study women's acceptance of using mobile phones to seek health information. The participants were requested to fill in the first part of a survey, then to work with a health application and finally to finish the survey. A convenience sampling was applied. The participants were 164 Singapore women (21 years and older). In the estimated model, the behavioural intentions to use mobile apps for health information search was dependent on perceived usefulness (PU) ($r = 0.59$, $p<0.01$) and perceived ease of use (PEOU) ($r = 0.37$, $p < 0.01$). Furthermore, the self-efficacy (SE) was positively correlated with behavioural intentions to use the mobile apps ($r = 0.54$, $p < 0.01$). The gathered data were analysed through a hierarchical regression analysis. Interestingly, including just the two variables of the technology acceptance model (PU and PEOU) in the regression model could account for 30% ($R^2 = 0.30$) of variance in behavioural intention to use mobile phones to search for online health information. But, importing self-efficacy, technology anxiety and prior experience into the model resulted in an increase in accountability of model up to 44% ($R^2 = 0.44$).

Lim and Kim (2012) selected the technology acceptance model as their theoretical ground and surveyed 274 undergraduates (45.2% male and 54.8% female) in March 2008. A total number of 500 questionnaires were sent out, and 274 complete questionnaires were returned (response rate 58%). The respondents were divided into two groups: high-trust and low-trust. In their estimated model, the information features (relevance, reliability and adequacy) influenced trust in health infomediaries. Trust in health infomediaries impacted on the intention to use. Furthermore, information relevance was an influencing factor on trust only for people with high trust, while information adequacy was an influencing factor for the low trust group. After structural equation modelling, the model accounted for 39.7% ($R^2 = 0.397$) of the variance in trust for the high-trust group and 25.3% ($R^2 = 0.253$) for the low-trust group. In addition the model accounted for 40.6% ($R^2 = 0.406$) and 8.6% of ($R^2 = 0.086$) of variance in the intention to use for the low-trust group and high-trust group respectively.

Based on the elaboration likelihood model and Toulmin's model of argumentation, Yi and colleagues (2013) proposed a model and tested it via field experiment. The participants were asked to first fill in a pre-test questionnaire including demographics and general Internet use, and then to browse three experimental web pages, and finally to report their attitudes. Three hundred health information seekers in Korea (150 men and 150 women) participated. The eligibility criteria were age ($\geq$ 20 years old) and previous search for online health information (82% reported personal previous search and 75.7% stated previous search for family members). In the estimated model, trust was positively dependent on perceived information quality and negatively influenced by perceived risk. Perceived information quality was positively influenced by argument quality and source expertise. In addition, the higher the perceived information quality, the lower the perceived risk regarding using the health information. Finally, perceived risk reduced trust in online health information. The model estimated by partial least squares regression accounted for 69% of variance in trust ($R^2 = 0.69$).

Mou and Cohen (2014a) included the theory of reasoned action, expectation-confirmation theory and the IS continuance model to investigate students' trust formation in online health services. The participants were 70 students of a large national university in South Africa (95% between 18 and 25 years; 41.43% female, 60% with previous online health information seeking). The study was done in a lab setting in two phases. In Phase 1, the participants were invited to select one of four provided health infomediaries' websites, and to surf the selected website for information on general health issues such as diet and nutrition, exercise and fitness, and to search for specific tasks adapted from a previous study of another researcher. Lastly, the participants answered a survey questionnaire about their trust beliefs, their perceptions about the surfed health website, their subjective norms and their possible future intention to use health infomediaries. Participants were asked to return to the lab after seven weeks, in order to complete the second-round survey that captured their present perceptions, beliefs and intentions regarding the health infomediaries. In the estimated model, in Time 1, continuance intention was affected by perceived usefulness and trust in the health infomediary website. Perceived usefulness was significantly influenced by trust in the health provider, and behavioural intention significantly influenced actual use of the health infomediary. In Time 2, perceived usefulness and

confirmation were significantly influenced by actual usage. Confirmation had significant influence on perceived usefulness and trust in the health infomediary website. Confirmation and perceived usefulness determined the satisfaction of the received online health service. Perceived usefulness, trust in the health infomediary website and satisfaction contributed to the intention to use the health infomediary. Generally, the model showed the importance of perceived usefulness and trust in consumer acceptance of services of the online health infomediary (in both stages). The structural equation modelling (path analysis) showed that the model could explain 65% of the variance in intention to use the online health infomediary ($R^2 = 0.65$).

In another study, Mou and Cohen (2014b) used the health belief model and the extended valence framework to investigate the role of trust, risk barriers and health beliefs in students' acceptance of online health services. They examined the online trust behaviour of 703 first-year undergraduates in South Africa (46.5% male; 97% between 18 and 22 years; 52.1% with previous experience of online health information seeking), based on a laboratory-based experimental design and a survey. First, students (based on their choice) navigated one of three online health services provided by the researchers to perform a number of tasks, and next they completed a survey questionnaire. The findings showed that perceived susceptibility, perceived severity and perceived benefit had significantly positive effects on the intention to use online health services ($\beta = .160$, $t = 3.941$; $\beta = .173$, $t = 3.736$; and $\beta = .107$, $t = 2.225$, respectively). Trust had positive effects on the intention to use ($\beta = .462$, $t = 9.476$) and perceived benefits ($\beta = .365$, $t = 6.118$), and a negative effect on perceived barriers ($\beta = -.368$, $t = 8.221$). Finally, self-efficacy moderated the effects of perceived severity on behavioural intentions ($\beta = -.121$, $t = 2.612$). The final model explained 44% of variance in intention to use online health services ($R^2 = 0.44$).

Johnson and colleagues (2015) used the elaboration likelihood model and administered a paper-and-pencil survey with a convenient sampling of 292 third-year undergraduates at a large metropolitan university in the UK. Most of the participants were 18 to 21 years old and male (56.5%). The participants were asked to assume their previous search for health information on the Internet (for general inquiry or for specific use of themselves or their family members) in order to answer the questions. In their estimated model (based on structural equation modelling, path analysis), the information quality including content and style, and peripheral clues, i.e. ease of access and brand, influenced credibility and usefulness judgement of the online health information. The final estimated model explained 53.6% of the variance in trust judgements by students ($R^2 = 0.53$).

Findings and discussion
Research design
As we see in Table 3, the studies included in this review ($n = 12$) mostly used surveys as their research method (seven studies). The others used lab experiments (three studies), or a combination of survey and lab experiment (two studies). This is similar to the previous finding that demonstrated the popularity of the survey method in testing theory-driven models in the online health context. For example, in their review of five theory-driven models of online health information, Marton and Choo (2012) found that the survey was the main research method used to test the relationships of variables in online health information seeking models. In addition, the focus on quantitative studies of information behaviour in the health context is a mainstream in this domain (Dorsey, 2008), and the tendency is for this to continue.

In the present study, students were the main participants of online trust modelling in the health context. Seven of 12 studies used students as survey or lab participants to test their models. A recent review also shows that students' studies shapes 19% of information seeking literature (Case, 2006). This approach seems to be an embedded habit in empirical studies in the online health domain and specially the study of trust (Bansal and Gefen, 2010; Batten and Dutton, 2011; Burger et al., 2015; Catellier and Yang, 2012; Douglas et al., 2004; Escoffery et al., 2005; Gray et al., 2005; Ivanitskaya et al., 2006; Jones and Biddlecom, 2011). This may be explained by the distinguished features of students. Students are well educated, very tech-oriented, and they are available and convenient to approach for investigating the health issues in online contexts. In addition, the cause may be the abundant interest in students' information seeking on the Web since 1995 onward, that is rooted in the consensus that students, and young people in general, seem to be more successful in 'everyday life' information seeking rather that in searching the Web for 'school-related assignments' (Limberg and Alexandersson, 2009: 3257).

However, using students to test the models is challenging. These models were designed based on some gaps in the online health domain, and then they were tested by the participation of students as well-educated individuals and digital natives as subjects.

Table 3. The theoretical framework and research design of reviewed studies.

Study	Theoretical framework	Research design	Participants (sample)
(Yi et al., 2013)	• Elaboration likelihood model • Toulmin's model of argumentation	Lab Experiment	300 health information seekers, 50% female, Korea
(Lim et al., 2011)	• Technology acceptance model • Bandura's social cognitive theory	Survey	164 women (86% Chinese, 6% Malay, and 8% Indian or Sikh), Singapore
(Song and Zahedi, 2007)	• Technology acceptance model • Actor network theory	Survey	494 graduate or undergraduate students, USA
(Lim and Kim, 2012)	• Technology acceptance model	Survey	274 undergraduates, 54.8% female, Korea
(Yun and Park, 2010)	• Technology acceptance model • Health belief model	Survey	212 participants nationwide, mostly women (62.7%), Korea
(Hong, 2006)	• Mongeau and Stiff's model • Elaboration likelihood model	Experiment + Questionnaire	84 students, mostly female (62%), (USA)
(Harris et al., 2011)	• Extended parallel process model • Protection motivation theory	Survey	561 participants, mostly female (72%), mostly from USA (59%) and UK (17%)
(Zahedi and Song, 2008)	• Agency theory • Information integration theory	Lab experiment	209 students, USA
(Liang et al., 2005)	• Theory of reasoned action • Theory of transaction cost economics	Survey	145 undergraduate business students (41% female), USA
(Johnson et al., 2015)	• Elaboration likelihood model	Survey	292 third-year undergraduate students (43.5% female), UK
(Mou and Cohen, 2014a)	• Theory of reasoned action • Expectation-confirmation theory • IS continuance model	Lab experiment	70 university students, mostly female (58.57%), South Africa
(Mou and Cohen, 2014b)	• Health belief model • Extended valence framework	Lab experiment + Survey	703 first-year undergraduates, female (53.5%), South Africa

Thus, the generalizability and testability of models for other people and contexts remains unclear. For example, how can we use the approaches of tested models in studies with different target groups? What can these models do for the general public, for culturally diverse groups, or those who do not have the features of students such as old people, housewives, people with a migration background or vulnerable people such as adolescents who have the competencies to use the technology but whose trust and judgments in online health domain differ?

The number of participants in the current review ranges from 70 participants in the study of Mou and Cohen (2014a), to 703 participants in the work of Mou and Cohen (2014b). Generally, the average number of participants in the included studies reviewed (with the assumption of survey method) is slightly more than 300, which is enough for studies with regression analysis and structural equation modelling (or path analysis).

In addition, more females than males participated in the studies. The higher participation rate of females in comparison with males is in line with previous findings (Cho et al., 2015; Ghaddar et al., 2012; Jones et al., 2011; Longman et al., 2012; McKinley and Ruppel, 2014; Neal et al., 2011; Oh and Kim, 2014;

Pariera, 2012; Senkowski and Branscum, 2015; Smart et al., 2012).

Theories behind the models

In general, different theories have been used to model trust formation of consumers in online health information. As shown in Table 3, most of the studies included in this review (10 of 12 studies) used at least two theories. The technology acceptance model used in four studies, the elaboration likelihood model used in three studies, and the theory of reasoned action and the health belief model applied in two studies, were the most used theoretical frameworks to study trust issues in online health settings.

Furthermore, it seems that mixing different theories to study trust in an online health context results in higher accountability of the estimated models. For example, in the study of Lim and colleagues (2011), mixing the approaches of social cognitive theory and the technology acceptance model increased the explained variance in the estimated model. Similarly, in the estimated model of Harris et al. (2011), adding the e-Health variables increased the prediction power of the model (i.e. increase in explained variance by independent variables). This is a clue for future studies of trust in online health contexts.

Table 4 shows the disciplinary origin of the theories applied in modelling trust in online health information. These theories are rooted in sociology, economics, psychology, marketing and consumer behaviour, communication, management, information systems and philosophy. Table 4 also demonstrates that online health behaviour studies are open to interdisciplinary theories. Nearly half of the theories are extracted from the psychology domain, maybe because of the task complexity in an online health context and the importance of individuals' cognitive factors and the behavioural perspective in this domain.

However, most of the models in this review have neglected the position of social and cultural influencing factors in trust formation. These models, less and more, were focused on the user-centric aspect of health information consumption. It should be noted, each interaction with an online health system includes the user, the system, the product (or content), and the institutional and social environment. In the current models, trust formation is regarded as a linear phenomenon that is formed by the interaction of user and the features of the system. This interaction has been measured just by the perceptions of the users regarding the information content, sources or the trustworthiness features of contents or sources.

As is shown in Table 4, the concentration of applied theories to modelling trust in an online health context is individualistic and mostly focused on the beliefs and perceptions of users to the system, its content and information sources.

Nevertheless, while acknowledging the efforts of previous researchers to apply user-centric theories and modelling the trust in online health, a broader understanding of how trust operates as a social and interactional phenomenon at community level is required for a comprehensive analysis of this complex issue, for example how the shared belongings of a community and the general trust in society lead to specific trust in digital artefacts.

In addition, the evolutionary nature of trust during time is neglected in most of the current models, and consequently, other important theories and models of online health information seeking were not included in the models. It worth mentioning that 'behavioural change is a *process*, not an *event*' (Glanz and Bishop, 2010), and it is not acceptable to say that at the time of X the target user trusted the health system based on some variables, and thus we can predict his trust behaviour for the future.

Accountability of models

The accountability of reviewed models, the statistical techniques to test the models and the final dependent variables are shown in Table 5. As can be shown, the final dependent variables in most of the models were intention to use or visit the online health websites, trust in online health infomediaries and readiness to act on online health information and advice.

Furthermore, most of the models included in the current review used a type of structural equation modelling to determine the predictor variables.

Generally, the R^2 (square of the correlation between the dependent and independent variables) was used to show the percent of variance explained by the estimated models. In the current review, it ranged from 0.23 in Hong's model (2006) to 0.69 in Mou and Cohen's study (2014a). This finding is in line with the findings of a previous review that reported the prediction power of models showing 23–50% of variance in the dependent variables (Marton and Choo, 2012). It is worth mentioning that the low or high R^2 value does not always equal the weakness or strength of the models or correlations of the variables, and some researchers (e.g. Frost, 2013) suggested that the *adjusted R^2* rather than R^2, and the standard error of the regression rather than the standard deviation of errors, should be considered. However, it is agreed that in social science, behavioural

Table 4. Applied theories in modelling trust in online health information.

Model / theory	Short summary of model or theory	Originated discipline	Theorist(s)/ developer(s)
Actor network theory (ANT)	In ANT it is assumed that there are different actor-networks in social relationships. It assumes that any actor (i.e. people, organization, and objects such as systems) in social links is similarly important. The interactions among the actors include both social and technical aspects, but the identification of these aspects is not always easy (Larsen et al., 2016).	Sociology	Latour, Callon and Law
Agency theory (AT), also called *principal-agent problem*	The AT was theorized based on employer-employee relationships. It is focused on the interactions (contracts) between employee and employer. The AT tries to resolve two issues in organization relationships: (1) the organization problem: when the wishes or objectives of the employer and employee are different or when verifying the performance of employee by the employer or principal is difficult) and (2) risk sharing: when the employer and employee have different risk preferences (or attitudes) and it may influence the actions of both parties (Eisenhardt, 1989).	Economics	Alchian, Demsetz, Eisenhardt, Jensen and Mekling
Elaboration likelihood model (ELM)	ELM is dual-process theory in which there are two routes towards persuasion: the central route and the peripheral route. By using the central route (that needs more cognitive processing) or the peripheral route (that requires less cognitive processing) the attitudes of individuals are changed and different judgements are made (Petty and Cacioppo, 1986).	Psychology	Petty and Cacioppo
Expectation-confirmation theory (ECT), also called *expectation disconfirmation theory*	In ECT, it is assumed that consumer satisfaction is the result of expectation and expectancy disconfirmation. The expectations, together with the perceived performance, influence on the consumers' satisfaction after purchase. The disconfirmation is assumed to affect the satisfaction, i.e. positive disconfirmation leads to satisfaction and negative disconfirmation results in dissatisfaction or low satisfaction. Finally, the degree of satisfaction influences attitudes and intentions of the consumer to purchase or not purchase a product (Oliver, 1980).	Marketing, consumer behaviour	Oliver
Extended parallel process model (EPPM)	The EPPM includes four perceptions of human being to predict the outcome of human behaviour in the communication process: self-efficacy (the perception of the competency to perform a task), response efficacy (the perception of risk control after	Speech communication	Witte

(continued)

Table 4. (continued)

Model / theory	Short summary of model or theory	Originated discipline	Theorist(s)/ developer(s)
	doing an action or task), susceptibility (the perception of the individual towards the impact of threat on him), and severity (perception regarding the harshness of health threat or disease) (Witte, 1992).		
Extended valence framework (EVF)	EVF was developed based on the theory of reasoned action (TRA) and the Valence Framework. In EVF, trust directly influences purchase intention, and indirectly (as a moderator) on perceived risk and perceived benefit. Perceived risk and perceived benefit have direct effects on the intention to use. Finally, actual purchases of users are predicted by intention to purchase by consumers (Kim et al. 2009).	Economics and Psychology	Andersen
Health belief model (HBM)	HBM is a psychological model that is focused on predicting health behaviour of individuals. The behaviour (act on health information or change in decision) is influenced by individuals' cognitive factors. In HBM, the individuals' perceptions (perceived susceptibility/seriousness of disease) affect the modifying variables (perceived threat of the health problem) and finally lead to likelihood of action (behavioural change or action) (Green and Murphy, 2014).	Social psychology	Rosenstock, Hochbaum, Kegeles and Leventhal
Information integration theory (IIT), also called *integrated information theory*	The IIT explains conscious experience of complex systems. It claims that 'consciousness is integrated information' and the amount of this consciousness is dependent on the amount of integrated information produced by a set of elements. The quality of experience is determined by a collection of informational relationships generated within a complex system (Tononi, 2008).	Psychology	Tononi
IS continuance model	This model was proposed based on the expectation-confirmation theory (ECT). It claims that users' level of satisfaction with initial information systems' use (i.e. expectation of the information system and confirmation of expectation) is positively associated with their information system continuance intention, that is users' intention to continue using e.g. the online banking system. The amount of confirmation of users is positively associated with their satisfaction with information systems and their perceived usefulness. Perceived usefulness of information system affects the IS continuance intention by the user (Bhattacherjee, 2001).	Management, online banking use	Bhattacherjee

Table 4. (continued)

Model / theory	Short summary of model or theory	Originated discipline	Theorist(s)/ developer(s)
Mongeau and Stiff model	The Mongeau and Stiff Model was developed based on the criticism of the Elaboration Likelihood Model (ELM). In this model, the issue involvement influences website credibility judgements by users and subsequently influences attitudes and intentions to use the received information (Mongeau and Stiff, 1993).	Communication	Mongeau and Stiff
Protection motivation theory (PMT)	In PMT, the perceived threat severity along with the perceived threat vulnerability affects the fear, results in protection motivation (threats for which there is an effective recommended response that can be performed by individuals), and finally leads to security-related behaviours (Boer and Seydel, 1996).	Health communication and social psychology	Rogers and Prentice-Dunn
Social cognitive theory (SCT)	Founded on Model of Causation, the SCT assumes human behaviour as mutual interactions between three entities: person, behaviour and environment. The person-behaviour interaction includes personal features such as thoughts and actions. The person-environment interaction focuses on human beliefs and competencies that are modified or changed by social factors in a context. Finally, the environment-behaviour interaction considers the relationships between a person's behaviour and the environment and their dual influences on each other (Bandura, 1989).	Psychology	Bandura
Technology acceptance model (TAM)	TAM is focused on the behavioural intention to use a system or product. This theory was adapted from the Theory of Reasoned Action (TRA). TAM assumes that peoples' intention to use a system is dependent on the perceived usefulness (the individual's belief that using a system will develop his or her job performance) and the perceived ease of use of the system (perceived degree of usability of a system by an individual). Perceived ease of use influence on perceived usefulness, and the user's behavioural intention to use the system influence on his or her actual use of the system (Venkatesh and Davis, 2000).	Information systems	Davis
Theory of reasoned action (TRA)	In TRA, the attitudes toward act or behaviour (i.e. the positive or negative feelings regarding performing an action), alongside the subjective norms (i.e. the beliefs of other individuals, that are important to the user, about performing a task or an action), affect the behavioural intention to use a system	Social psychology	Fishbein and Ajzen

(continued)

Table 4. (continued)

Model / theory	Short summary of model or theory	Originated discipline	Theorist(s)/ developer(s)
	and the final behaviour of the user regarding the system (Larsen et al., 2016).		
Transaction cost economics (TCE), also called *transaction cost theory*	In TCE, the uncertainty and asset specificity directly or indirectly (through influencing the transaction cost) influences on the acceptance of the transaction. Transaction costs consist of different costs, such as search and information costs, bargaining costs, and policing and enforcement costs (Walker and Weber, 1984).	Economics	Coase, Williamson, Klein, Crawford and Alchian
Toulmin's model of argumentation (TMA)	TMA is based on the elements of an argument. It was proposed to strengthen the effects of trust-assuring arguments on consumer trust in an Internet store. Based on this model, three types of arguments are commonly used in daily communications: Claim, Data (the grounds for a claim), and Backing (the reasons of accepting the data) (Kim and Benbasat, 2006).	Philosophy	Toulmin

Table 5. Statistical analyses and model accountability of reviewed studies.

Study	Statistical approach/test	Dependent variable	Model R^2
(Harris et al., 2011)	Structural equation modelling	Readiness to act on online health advice	0.49
(Hong, 2006)	Structural equation modelling	Intention to revisit a health infomediary website	0.23 for general search 0.24 for specific search
(Johnson et al., 2015)	Structural equation modelling	Trust judgements regarding online health information	0.536
(Liang et al., 2005)	Structural equation modelling	Intention to use online prescription filling	0.36
(Lim and Kim, 2012)	Structural equation modelling	Trust in online health information	0.397 for high-trust group 0.253 for low-trust group
(Lim et al., 2011)	Hierarchical regression analysis	Intention to use mobile apps for seeking health information	0.44
(Mou and Cohen, 2014a)	Structural equation modelling	Intention to use online health infomediary	0.65
(Mou and Cohen, 2014b)	Structural equation modelling	Intention to use online health services	0.44
(Song and Zahedi, 2007)	Structural equation modelling	Intention to use online health infomediaries	0.39
(Yi et al., 2013)	Multiple comparison test	Trust in online health	0.69
(Yun and Park, 2010)	Structural equation modelling	Intention to use health website to get disease information	Not reported.
(Zahedi and Song, 2008)	Structural equation modelling	Trust attitudes regarding health website	0.65 in Time 1 0.52 in Time 2

studies and psychology the R^2 value of under 0.50 is acceptable (Frost, 2013) because of the complexity of predicting human behaviour.

Conclusion

First, the current review draws a general picture of what has been done in modelling trust in the online health context until now. This may be useful for health information behaviour researchers searching for theoretical frameworks and research designs for their research.

Second, based on the assumption that predicting human behaviour (specifically in social science and psychology) is harder than establishing relationships of physical objects (in natural sciences) and the low R^2 values of the estimated models in the current review (under 0.50) is acceptable, it can be said that most of models in this review had relatively good prediction power and model accountability.

Third, the information search process is not static (Xie, 2011). Trust is evolutionary and it evolves over time. As Magrath and Hardy (1989: 393) state, trust is an 'ongoing' process, in which trust relationships develop 'continuously'. However, most of the models included in this review regard the information seeking and search as a static process that happens between the user and the system, and suggest that the users just formulate a single type of query in the search process. Thus, it is recommended that future researchers consider the dynamics of both trust formation and the information search process.

Fourth, the theory-driven models in this study have applied a broad range of theories to investigate the trust in an online health context, and it shows the complexity of health information-seeking behaviour and the need for multidisciplinary frameworks to target the issue (Marton and Choo, 2012). Nearly half of the applied theories in the current review were adapted from the psychology domain. This can be explained by the 'functionalist' perspective that assumes the individuals' 'cognitive processes' are equivalent to their interactions with systems (Capurro and Hjørland, 2003). As Capurro and Hjørland (2003: 367) clarified, psychology is a connector between 'natural sciences', 'humanities' and 'social sciences', in which the information plays a dominant part, and this emphasis finally shaped the 'information-processing paradigm'. The focus on cognitive processing of information has influenced the information behaviour modelling too. However the cultural belongings (along with the individuals' characteristics) are among the predictors of information behaviour, and the cultural differences of information

consumers lead to different information use and perceptions in the digital sphere. For example, Chau et al. (2002) found that the Internet use behaviour of Hong Kong consumers (with value preferences for shared loyalty and relationships), is different from that of USA consumers (that have value preferences for personal competence and loyalty to oneself). Moreover, these cultural differences influence the perceptions of information systems use and outcomes too (Calhoun et al., 2002; Leidner et al., 1999). As an example, Calhoun et al. (2002) found differences in IT use patterns between consumers of higher context cultures (Korea) and lower context cultures (USA). Furthermore, time-orientation as a cultural value is an influencing factor on information selection preferences in online environments. For instance, Rose et al. (2003: 38–40) showed that the people from so called 'polychromic cultures' (e.g. Egypt and Peru), who like to do multiple things at the same time, had different concerns regarding website 'delays' in comparison with people of 'monochromic cultures' (e.g. United States and Finland) who tend to do just one thing at a time. Therefore, considering the socio-cultural and ecological theories – such as the cultural dimensions of Hall (1976) and Hofstede (1980) – in future modelling of trust in online health systems will enrich the current models that were mostly focused on intention to use an online health system on an individual level, and it will supplement the individualistic perspective of models with a socio-cultural perspective that altogether shape the information behaviour of people in a surrounding context.

Fifth, trust formation in the online environment is very complex. It involves different interactions with systems, sources and information. Hence, we need more investigations on other aspects rather than the intention to use. For example, little is known on information rejection, mistrust and information avoidance behaviour of health consumers. There are different 'socio-cultural barriers' in the information-seeking process that possibly influence trust in online health information. Savolainen (2016: 57) has categorized these barriers into six main types ('language problems, social stigma and cultural taboos, small-world related barriers, institutional barriers, organizational barriers, and the lack of social and economic capital'), and mentions the negative influence of these barriers on information access and evaluation by users. Considering these barriers in following trust studies will help to better understand the issue.

Finally, based on the current review, it is not evident what will happen to individuals when they trust online health information, and what they really do after trusting the retrieved or exposed information. It is important to explore the post-trust decisions of

consumers regarding online health information in future modelling. This step is necessary because acting on information retrieved from inappropriate sources may lead to irreparable consequences for consumers of health systems in a digital world.

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Generation and management of scholarly content in Nigerian universities

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Abstract

The paper aims to investigate the generation and management of scholarly content at universities in Nigeria using quantitative and qualitative approaches with a total of 120 academic staff from the three universities randomly selected for the study. The study found that the majority of the academic departments had no academic journals, while the academics generated just two out of 12 scholarly contents in their scholarly activities. It was discovered that neither the universities nor the academic departments had digital archives for the effective preservation and management of scholarly content. The study revealed the challenges of scholarly content generation and management to include the absence of institutional repositories and reliable institutional websites owing to poor infrastructure. The contribution of this paper is that it investigated the generation and management of scholarly content at universities in Kano State, Nigeria, and no such study exists in the literature.

Keywords

Content management, Kano State, knowledge management, Nigerian universities, scholarly communication, scholarly content

Introduction

The study was based on three universities in Kano State, Nigeria. The most populous state in the country, with an estimated population of 9,383,683 (National Population Commission, 2006), Kano State, created in 1967, has an estimated land area of 20,131km^2 and is located in the north-western part of the country, a home to three universities, three colleges of education, three colleges of allied health sciences and one polytechnic. Bayero University, Kano (BUK) became a fully-fledged university in 1977, when it was upgraded from Bayero University College under the then Ahmadu Bello University, Zaria to full university status and renamed. At present, BUK has nine faculties with a student population of 37,747 and 1060 academic staff; Kano State University of Science and Technology (KUST) was established in 2001 as a specialized university owned by the Kano State Government initially with two faculties, Faculty of Agriculture and Agricultural Technology (FAAAT) and Faculty of Science and Science Education (FASSE). The university is a member of the Commonwealth Universities. North-West University, Kano was founded in 2012 to promote and enhance Nigeria's old province of the North-West as both a cynosure and pacesetter in the field of learning and scholarship in West Africa and beyond.

The development of today's scholarly endeavour, as we know it, started a long time ago. There has been progression from the oral discourses of the ancient Greek scholars to the printed periodicals and books made possible by Gutenberg's printing press up to the present digital scientific communications modes available to modern scholars (Ball, 2011). Western Libraries (2013) asserts that there are different stakeholders involved in the modern scholarly communication process, including authors, publishers, libraries, researchers, higher education institutions and funding agencies. The benefits of a sound scholarly content

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management regime are very profound, one of the greatest being the lowering of the cost of access to and/or utilization of information. Escalating prices of traditional print and electronic journal prices and unfriendly market models have increasingly meant that institutions must explore more sustainable strategies in their structure of scholarly communication (Crow, 2002).

The term 'scholarly content' implies formally published scholarly literature, in particular journal articles and conference proceedings (Research Information Network, 2011); editorial documents and doctoral dissertations (Royster, 2007); the contents of institutional repositories that could include any work generated by the institution's students, faculty, non-faculty researchers and staff. This content may include pre-prints and other works-in-progress, peer-reviewed articles, monographs, enduring teaching materials, datasets and other ancillary research material, conference papers, electronic theses and dissertations, and grey literature (Johnson, 2002).

Access to scholarly content has also undergone several transformations from the analogue information environment to the vigorous digital information environment. For example, digital libraries, such as the American Library of Congress Digital Collections and Services, have been offering online access to print, pictorial and audio-visual collections and other digital services since 1994 (Library of Congress, 2013). Similarly, Duke University's Digital Collections in the United States provide access to the university's unique library and archival materials for teaching, learning and research at Duke and worldwide (Duke University Libraries, 2013). In 2011–2012, the University was ranked 22nd globally by The Times Higher Education (2012).

However, Teferra (2004) asserts that Africa lies at the periphery of the knowledge and information market. Statistics on scientific knowledge production show that the entire African continent contributes approximately 0.13% of the scholarly publications on the Web and international bibliographic databases (Ubogu, 2001; Worldmapper, 2006). In Africa, the major centres of knowledge creation and scholarly communication are universities. However, most African universities have been reeling from problems that reduce their scholarly productivity and visibility. These include diminishing or total lack of research funding, escalating student enrolment, poor emoluments and low salaries for researchers and faculty, brain drain and lack of appropriate resources, such as laboratories, equipment, journals and access to online databases (Ondari-Okemwa, 2007). 'There is a marked division in the economies and politics of knowledge production and dissemination between the developed countries on one hand and developing countries on the other' (Adebowale, 2001: 4). Consequently, African countries have continued to rely on research emanating from elsewhere, which, to a large extent, may not be relevant to the problems facing the region.

Many factors were responsible for the challenges in scholarly generation and management in Nigeria and Africa in general. These have been reported in some of the literature (Bello, 2008; Murray and Crampton, 2007; Rosenberg, 1997). While Murray and Crampton (2007) argued that researchers on African topics need access to not only European and American sources but also to the publication outputs from Africa, Bello (2008) deplores the fact that, despite an enormous number of journals published in Africa recently, the majority of them are hardly accessible outside the institution(s) where they are published, leading to the duplication of research and the poor visibility of articles in such journals.

The limited circulation of scholarly publications in Africa has resulted in the call for a way of fashioning a proper method of disseminating scholarly research in developing countries, particularly Nigeria, so as to balance the global information equation and improve the visibility and impact of Nigerian research outputs (Ezema, 2011). It is in view of these prevailing circumstances that the present study focuses on the following:

- to examine the trend in scholarly content generation and/or production in universities in Kano State;
- to determine the extent to which institutional infrastructure in the universities supports scholars' research management and communication needs.

Review of related literature

The trend in global scholarship today is toward availability and accessibility to research findings, research reports and other forms of literary works. Hence, Nigerian universities cannot afford to be in a vacuum regarding their scholarly content generation, management and dissemination. An increasingly pressing priority of many governments around the world is to make sure that their top universities are actually operating at the cutting edge of intellectual and scientific development (Salmi, 2009). Ensuring that university researchers have the best access to scientific information and that their own research output is widely visible and accessible to the world should be the ultimate

goal of Nigerian universities in order to become active participants in the global scholarship race.

Several authors recognize scholarly communication as the exchange of ideas, thoughts, hypothesis and scientific results occurring between members of the scientific community (Association of College and Research Libraries, 2003; Ball, 2011). In this dynamic process, content is generated, reviewed, disseminated, acquired, preserved, discovered, accessed and assimilated for the advancement of scholarship (Western Libraries, 2013). This content may include pre-prints, peer-reviewed journal articles, monographs, enduring teaching materials, datasets and other research material, conference papers and proceedings, electronic theses and dissertations and grey literature (Johnson, 2002; Research Information Network, 2011; Royster, 2007).

A major challenge to Nigerian scholarship is the poor visibility of research findings coming out of the country. This has been documented in much of the literature (Bako, 2005; Ezema, 2010; Okebukola, 2002) and, therefore, has often given low impact to published works coming from the country. In addition to this, the quality papers from the country lack readership and, by extension, low citations from colleagues in and outside the country owing to their absence in the highly rated ISI/SCOPUS indexed databases. Visibility of publications is usually associated with the extent to which the said published work is read and/or cited by other scholars and, in a broader perspective, how much the paper contributes to the growth of human knowledge. Looking at journal visibility, Zainab and Nor (2008) remarked that it is sometimes synonymous with journals that have achieved some measure of impact in the global scholarly community. This means that for Nigerian publications to achieve visibility, they must have secured reasonable impact in the growth of knowledge and this cannot be obtained when the papers are neither read nor cited by others (Ezema, 2013).

In this regard, scholarly publications by faculty members could add impact to the prestige of the institutions they are associated with, but Christian (2008: 23) believes that 'an Information Repository stands to generate greater impact by centralizing research outputs generated by the institution's researchers, and thus serving as a much better and simpler metrics for gauging the quality of the institution's academic scholarship, productivity and prestige'.

Furthermore, advocates of open access emphasize the need for free and openly accessible research findings, especially those from publicly funded studies, such as those conducted in the public universities (Harnard, 2011; Suber, 2004; Willinsky, 2006).

Arzberger et al. (2004) argue that publicly funded research data are a public good produced in the public interest and, as such, they should remain in the public realm. Only legitimate considerations of national security restrictions; the protection of confidentiality and privacy; intellectual property rights and time-limited exclusive use by principal investigators should restrict their availability. Furthermore, Arzberger et al. (2004) emphasize that open access to, and the sharing of, data reinforces open scientific inquiry, encourages diversity of analysis and opinion, promotes new research and makes possible the testing of new or alternative hypotheses and methods of analysis. Additionally, it facilitates the education of new researchers, enables the exploration of topics not envisioned by the initial investigators and permits the creation of new data sets when data from multiple sources are combined.

Methodology

The main methodologies or research approaches in social research include the quantitative, the qualitative (Babbie and Mouton, 2001; Creswell, 2003; Myers, 1997; Sheppard, 2004) and mixed methods research (Creswell and Plano, 2007; Greene, 2008; Teddlie and Tashakkori, 2009). In the present study, the methodology adopted was the quantitative and qualitative method of data collection, using a questionnaire and content analysis based on stratified random sampling technique. A total of 120 academic staff in the three universities were involved. In this regard, 40 academic staff were randomly selected from each of the universities, namely Bayero University, Kano, Kano State University of Science and Technology and North-West University, Kano for data collection.

For the collection of data, Congress Meetings of respective branch chapters of the umbrella body of Nigerian university academics, known as the Academic Staff Union of Universities (ASUU), were used to randomly administer a questionnaire for the academics to collect data for the study (see Appendix). Institutions' annual reports/year books and websites were analysed to determine the number of academic journals available in each university and their publishing frequencies. All 120 copies of the questionnaire were completed and returned.

Generally, the questionnaire was organized in sections A–C, covering questions 1–10. The issues covered the following themes: journal production; type of scholarly content generated; knowledge sharing among academics; model(s) for publishing and preserving scholarly content for the academics and scholarly content management.

The data collected from the survey (questionnaire) were sorted, scrutinized, edited and analysed using the Statistical Package for Social Sciences (SPSS) version 20.0 for Windows 7 to generate descriptive statistics, including percentages and frequencies. The frequency and percentage displayed a number of occurrences side by side with the corresponding percentage, as well as relating this to the variables used in the research. Analysis of the qualitative data in this study involved the three steps of qualitative data analysis, as encapsulated in Miles and Huberman (1994: 11). These are data reduction, data display and conclusion drawing/verification.

Results and discussion

The profiles of the respondents

In this segment, the respondents' profiles, namely universities, gender, discipline, educational qualification and academic rank, are presented. A total of 120 academic staff participated and returned the questionnaire administered in the three universities. In this regard, the sample distribution on the basis of the universities revealed that 40 academics were drawn from each of the three universities. This means that the respondents were equally drawn from the three universities for the study. The gender distribution of the respondents reveals that 98 (81.7%) were male academics and 22 (18.3%) females. The overall results indicate that the majority of the respondents were male.

The study shows that 19 (15.8%) were in the discipline of agricultural sciences, 61(50.8%) the humanities and social sciences and 9 (7.5%) were academics based in the medical sciences. The findings further revealed that 31 (25.8%) of the respondents were in science and technology. The results show that the majority or 61 (50.8%) were in the field of humanities and social sciences of the three universities. This may not be unconnected to the fact that two of the three universities (Bayero University, Kano and North-West University, Kano) are conventional multi-disciplinary-based universities, while Kano State University of Science and Technology is a specialized university based on science and technology. The educational qualification of the respondents is that 44 (36.7%) are primary/Bachelor's Degree holders, 51 (42.5%) have Master's Degrees, 21 (17.5%) have a PhD, while four (3.3%) hold other qualifications, such as postgraduate professional diplomas and postgraduate medical qualifications. The distribution of their academic status shows that majority are holders of Master's and Bachelor's Degrees. The possible explanation for having few academics with a PhD

could be that the two of the three institutions studied (Kano University of Science and Technology and North-West University, Kano) are new, hence most of their lecturers are either pursuing their PhDs or have not even started. Research has shown that there is a high correlation between staff with doctorates and research output (Cloete et al., 2011). This suggests that the smaller number of teaching staff with PhD qualifications in universities in Kano is likely to impact negatively on the overall research productivity in the universities. The distribution of respondents by academic rank also reveals that 15 (12.5%) are Assistant Lecturers, 54 (45.0%) either Lecturer I or Lecturer II, while 27 (22.5%) are Senior Lecturers and 24 (20.0%) are Associate Professors in the three universities. The findings show that no full Professors participated. This could be attributed to the use of the random sampling technique in the study where every participant was accorded an equal opportunity of being selected.

Scholarly content generation

This section investigates the scholarly content generated in the three universities for enhanced knowledge sharing and dissemination.

Journal production by departments. The results indicate the level of journal production with the following responses: 66 (55.0%) said no to journal production and 54 (45.0%) yes to the production of academic journals in their departments. The findings show that most are of the view that their departments had no academic journals. This demonstrates the low level of scholarly content generation, particularly journals in the three universities. Their share of the global knowledge-base is minimal, thereby affecting local content dissemination to the global audience.

Related to the findings of the present study, Mohammed (2008) conducted a study to determine the academic journal production by institutions of higher learning in Kano State. The findings revealed that Bayero University, Kano had 15 active academic journals, Federal College of Education, Kano seven, Kano state College of Education, Kumbotso, four, and Federal College of Education Technical, Bichi and Kano State Polytechnic one each. Despite the fact that four of the five institutions studied by Mohammed (2008) were not the same as those in the present study, the findings of the two studies corroborated each other in that there were few academic journals produced by the institutions of higher learning in Kano State, Nigeria.

In contrast, Tijssen (2007), who examined the perspectives, trends and performance indicators of

Africa's contribution to the worldwide research literature, found that South Africa had 253 journals accredited by the Department of Higher Education and Training (DHET). Smart (2005) observed that the International Network for the Availability of Scientific Publications (INASP) estimated that there were about 400 journals published in South Africa, 300–400 in Nigeria and 400 in the rest of sub-Saharan Africa. Kidane (cited in Teferra, 2003) opines that the existence of professional journals is an indicator of the presence of highly trained manpower in several institutions that are capable of generating research output in sufficient quantity to warrant the regular production of a journal. It is evident from the results of the current study that the quantity of scholarly content, especially of journal articles, is not sufficient to sustain the regular production of scholarly journals in the different disciplines or subject specializations in the universities surveyed. This situation propagates a vicious cycle where locally produced articles are few. Therefore, the production of local journals, which depends on these for survival, is unsustainable. This situation in Kano State, in particular, may spell doom to the country's quest to venture and compete favourably in the global knowledge society, thereby further narrowing the availability and accessibility scope of her intellectual and scholarly output.

Academic journals available in the three universities. In this segment, data were collected through the analysis of the institutions' annual reports/year books and websites to verify the claims and opinion of respondents as expressed in the questionnaire. Results are embedded in Table 1.

Based on the findings, Bayero University, Kano has 29 journals managed by various departments, faculties, centres and institutes of the university; while Kano University of Science and Technology, Wudil has one journal being run by the university, whereas no department, faculty, centre or institute was publishing any journal. The study also revealed that no single journal was available in the North-West University, Kano save for the Conference Proceedings published by the Faculties of Science and Humanities. The researcher was informed that plans were underway to launch two journals in the Faculties of Science and Humanities. The findings of the content analysis corroborate those of the survey questionnaire in which a majority of the respondents 66 (55.0%) have no academic journals in their departments, while 54 (45.0%) do.

However, the researcher observed that the reason for the unavailability of academic journals, especially in the North-West University, Kano and just one journal in Kano State University of Science and Technology, Wudil, could be due to the fact that, compared to Bayero University, Kano both are new universities.

The types of scholarly content generated or participated in generating. The results show the types of scholarly content the respondents generated or participated in generating to stimulate intellectualism (see Table 2).

The responses were as follows: pre-prints 102 (85.0%), no, 18 (15.0%), yes; journal article, 21 (17.5%) claimed no to the generation, while 99 (82.5%) said yes to generation; working papers, 93 (77.5%), no and 27 (22.5%) believed they either generated or were involved in generating; technical reports 82 (68.3%) said no, while 38 (31.7%) commented yes to generation or participation in the generation; book chapters 68 (56.7%), no, 52 (43.3%) said yes; book, 97 (80.8%) claimed no and 23 (19.3%) indicated they generated or were involved in generating; book reviews, 109 (90.8%) said no, while 11 (9.2%) were either generating or involved in generating; thesis/dissertation, 46 (38.3%) claimed no, while 74 (61.7%) said yes; conference papers, 67 (55.8%) said no to generation or participation while 53 (44.2%) indicated yes to both; datasets, 115 (95.8%) no and 5 (4.2%) yes; software, 109 (90.8%) no to generation, while 11 (9.2%) yes for generation of scholarly content; multimedia, 112 (93.3%) no and 8 (6.7%) claimed yes to the generation and participation in generation of scholarly content.

Generally, the results show that the generation and production of scholarly content by academics in the three universities are low, as most of the respondents were not either generating or involved in generation.

The results of the present study bear some similarities to the results of the study by Lindholmet al. (2005) who carried out a national survey of American college and university faculty, examining how they spent their time, interacted with their students and methods of teaching, among other topics. The study covered a two-year period and revealed that 26% of faculty spent zero hours per week on research and scholarly writing, with only 15% spending more than 12 hours on those. Approximately 40% of faculty spent more than 12 hours a week preparing for teaching. The study further revealed that only 24% had conducted research or writing on international or global issues; 27% had not published articles in academic or professional journals; 57% had no chapters in edited volumes; 62% had not published any books, manuals or monographs and 86% had not produced any patents or computer software products.

In a comparative study by Lee and Bozeman (Duque et al., 2005) of US academicians, it was

Table 1. List of journals available in the universities.

S/No.	University	Journal	Production frequency
1.	Bayero University, Kano	1. Mambayya House: Journal of Democratic Studies	1. Biannually
		2. Harusunan Nigeria	2. Biannually
		3. Bayero Journal of Accounting Research	3. Quarterly
		4. Bayero University Journal of Public Law (BUJPL)	4. Biannually
		5. CHEMSEARCH Journal	5. Biannually
		6. Topics on the Nigerian Economy	6. Biannually
		7. Journal of Trends and Issues in Primary Education (JTPE)	7. Biannually
		8. Disarat Arabiyyah	8. Biannually
		9. Bayero Business Review	9. Quarterly
		10. Journal of Research in Health and Sport Science	10. Annually
		11. Bayero Journal of Physics and Mathematical Sciences	11. Annually
		12. Disarat Islamiyyah	12. Biennially
		13. Journal of Adult Education and Community Services: An International Journal	13. Annually
			14. Annually
		14. BUK Journal of Comparative Law	15. Biannually
		15. ALGAITA Journal of Current Research in Hausa Studies	16. Biannually
		16. KAAKAKI: A Journal of English and French Studies	17. Biannually
		17. Bayero Sociologist: A Journal of Sociological Studies	18. Annually
		18. Biological and Environmental Sciences Journal for the Tropics (BEST)	19. Annually
			20. Biannually
		19. Bayero Journal of Education in Africa	21. Annually
		20. Bayero Journal of Social and Management Studies (BAJOSAMS)	22. Annually
			23. Annually
		21. Bayero Journal of Pure and Applied Sciences (BAJOPAS)	24. Annually
		22. Journal of Engineering and Technology	25. Biannually
		23. FAIS Journal of Humanities	26. Biannually
		24. Readings in Applied Psychology	27. Annually
		25. Inter-Disciplinary Journal of Humanities and Social Sciences	28. Annually
		26. Bayero Journal of Interdisciplinary Studies	29. Biannually
		27. Kano Studies: A Bayero University Journal of Savannah and Sudanic Research	
		28. The Journal of General Studies	
		29. Bayero Journal of Library and Information Sciences	
2.	Kano University of Science and Technology, Wudil	1. Techno-Science	1. Biannually
3.	North-West University, Kano	Nil	Nil

revealed that an average of 14.40 papers for Assistant Professors to 25.75 papers for full Professors in five years was published. It is evident from these studies that disparities in the quantity of publications exist between the scholarly productivity of academics in developing countries compared to those from developed countries. As Ondari-Okemwa (2007) showed in an evaluation of scholarly publishing in sub-Saharan Africa between 1997 and 2007, developed countries, such as the US and the UK, each produced more publications in a year than those produced in the whole of sub-Saharan Africa in the 10-year period. The US had more than 100,000 records of scholarly publications in 2006 alone while the United Kingdom had 97,904 in the same year. The evaluation revealed that in the period stretching between 1997 and 2007, South Africa was leading in scholarly publication in sub-Saharan Africa with 51,738 publications while Nigeria and Kenya had 9540 and 6661, respectively.

Related to the findings of the present study, Wamala and Ssembatya (2013) analysed levels and patterns of scholarly productivity among doctorate holders in Uganda using a sample of 534 PhD holders. The study revealed that 27.9% had published articles and 20.2% (co)authored books, book chapters and/or monographs. Furthermore, about 71% of the doctorate holders had neither authored nor co-authored journal articles nor books (or book chapters and

Table 2. Types of scholarly content generated.

Pre-prints	Frequency	%	Valid %	Cumulative %
No	102	85.0	85.0	85.0
Yes	18	15.0	15.0	100.0
Total	120	100.0	100.0	
Journal article				
No	21	17.5	17.5	17.5
Yes	99	82.5	82.5	100.0
Total	120	100.0	100.0	
Working papers				
No	93	77.5	77.5	77.5
Yes	27	22.5	22.5	100.0
Total	120	100.0	100.0	
Technical reports				
No	82	68.3	68.3	68.3
Yes	38	31.7	31.7	100.0
Total	120	100.0	100.0	
Book chapter				
No	68	56.7	56.7	56.7
Yes	52	43.3	43.3	100.0
Total	120	100.0	100.0	
Book				
No	97	80.8	80.8	80.8
Yes	23	19.2	19.2	100.0
Total	120	100.0	100.0	
Book reviews				
No	109	90.8	90.8	90.8
Yes	11	9.2	9.2	100.0
Total	120	100.0	100.0	
Thesis/dissertation				
No	46	38.3	38.3	38.3
Yes	74	61.7	61.7	100.0
Total	120	100.0	100.0	
Conference paper				
No	67	55.8	55.8	55.8
Yes	53	44.2	44.2	100.0
Total	120	100.0	100.0	
Datasets				
No	115	95.8	95.8	95.8
Yes	5	4.2	4.2	100.0
Total	120	100.0	100.0	
Software				
No	109	90.8	90.8	90.8
Yes	11	9.2	9.2	100.0
Total	120	100.0	100.0	
Multimedia				
No	112	93.3	93.3	93.3
Yes	8	6.7	6.7	100.0
Total	120	100.0	100.0	

monographs). The findings demonstrated low scholarly productivity by PhD holders in the country. Wamala and Ssembatya (2013) attributed this situation to low levels of research activity caused by heavy teaching and supervisory workloads experienced by the academics and poor remuneration, thereby affecting the productivity and output of the scholars. Also related to the findings of the present study, Okafor (2011), based on data analysis using ANOVA, shows that there is no significant difference between the mean productivity of academics from different universities in southern Nigeria, as in the last 10 years mean publication in local journals by the academics was just 5.07 and that of articles in international journals 2.64. The researcher attributed the low level of publication, especially in international journals, to the high rejection of articles by such journals. Another study by Okafor and Dike (2010) examined the level of the research output of science and technology academics in the six Nigerian federal universities during 1997 to 2006. The study revealed that 30.6% of the academics published between 0 and 4 journal articles; that only 2.7% of them published 30 or more journal articles during the period; and that as many as 42.1% did not have any article in overseas journals. Even though the two studies (Okafor, 2011; Okafor and Dike, 2010) were conducted earlier than the present study, their findings bear similarities to that of the present study, regarding the low output and productivity of academics in Nigerian universities.

Furthermore, a bibliometric analysis of the SCOPUS affiliation index revealed that there are 984 articles/publications by 479 authors from Bayero University, Kano, mostly from the Faculties of Science, Medicine and Engineering.

Interaction with colleagues on scholarly matters. The findings describe the scholarly content generation through interaction among academics in the three universities. Based on the activities: discussing ideas, solutions and scientific proposals with colleagues was cited by 21 (17.5%) as rarely and 71 (59.2%) sometimes, while 28 (23.3%) said always; holding professional meetings with colleagues in the department based on a pre-planned schedule, 4 (3.3%) never, 27 (22.5%) rarely, 69 (57.5%) sometimes and 20 (16.7) always; holding professional meetings with colleagues from other departments based on a pre-planned schedule, 13 (10.8%) never, 49 (40.8%) rarely, 52 (43.3%) sometimes, while 6 (5.0%) claimed always; more qualified and/or experienced colleagues assisting others learning scientific issues, 4 (3.3%) never, 14 (11.7%) rarely, 56 (46.7%) sometimes and 46 (38.3%) believed it was always; colleagues sharing knowledge and resources with others, 3 (2.5%) never, 15 (12.5%) rarely, 53 (44.2%) sometimes and 49 (40.8%) always.

In spite of the evidence showing that knowledge was shared among the academics in the three universities, Garfield (2006) outlines 10 reasons that may prevent people from sharing knowledge in organizations: people are unwilling to share knowledge when they do not know why they should share it; when they do not know how to do it; when they do not know what they are supposed to do; when they think the recommended way will not work; when they think their way is better; when they think something else is more important; when there is no positive consequence to them for doing it; when they are rewarded for not sharing; and when they are punished for doing it.

Scholarly content management

This section investigates the management of scholarly content in the three universities through model(s) for publishing and preserving scholarly content.

Model(s) for publishing scholarly content in the universities. The findings show the model(s) through which the respondents publish their scholarly output in the three universities. The responses were as follows: personal websites cited by 94 (78.3%) as no and 26 (21.7%) as yes; traditional subject-based journals, 39 (32.5%) no, while 81 (67.5%) said yes; fee-based open access journals, 56 (46.7%) said no, while 64 (53.3%) claimed yes; free open access journals, 41(34.2%) no and 79 (65.8%) said yes; institutional repositories 95 (79.2%) no, while 25 (20.8%) yes; institutional websites, 97 (80.8%) no and 23 (19.2%) yes; conference proceedings, 45 (37.5%) said no, while 75 (62.5%) claimed yes.

Generally, the results show that traditional subject-based journals, fee-based open access (OA) journals, free OA journals and conference proceedings were the models used by the respondents to publish their scholarly output in the three universities. The respondents further indicated their choices were based on the accessibility and availability of these different avenues. The findings also reveal that Nigerian academics preferred to publish and source scholarly content from the traditional subject-based journals, as opposed to the newer OA model journals, although they have an inclination towards the OA journals. These results confirm the importance of the traditional scholarly journal and indicate that Nigerian academics continue in the global tradition of relying on journals for up-to-date scholarly information and knowledge.

Several authors (Dulle, 2011; Guardado and Borges, 2011; Xia, 2010) have shown that the OA business model, enabled by technology, is gaining increasing acceptance and use across the globe as an alternative way of distributing scientific literature. Xia (2010) applied a statistical time-series analysis of studies that had investigated attitudes and behaviours regarding OA in the period 1991 to 2008. The analysis discovered a steady increase in the awareness of OA scholarly communication, as well as an increase in the number of scholars participating in it. Guardado and Borges (2011) conducted a study examining trends in OA in Portuguese history journals and found that universities and history R&D units were increasingly embracing the free electronic access to historians' research results. Dulle (2011) examined the acceptance and use of OA scholarly communication by postgraduate students at the Sokoine University of Agriculture and the University of Dar es Salaam, Tanzania and found that the respondents' attitudes towards OA were generally positive. The fact that the OA model allows unrestricted, unlimited and free online access to scholarly content seems to be driving this acceptance globally. Ezema (2011), in a survey of local content materials for OA institutional repositories in seven universities in South Eastern Nigeria, found that only 15 local content materials were identified as relevant for publication in the institutional repositories. It was further revealed that increasing the visibility of the authors, the promotion of university ranking and efficient dissemination of research findings were among the benefits for publishing in institutional repositories.

Consistent with the findings of the present study, Chan and Costa (2005) conducted a study based on literature review to determine the mode of disseminating research output in developing countries. They found that the following media were used for the dissemination of local research and to bridge the south-north knowledge gap: Health InterNetwork Access to Research Initiatives (HINARI), Global Online Research in Agriculture (AGORA), Electronic Information for Libraries Net (elfl.net), Program for the Enhancement of Research Information (PERI) and other open access journals, such as Scientific Electronic Library Online (SciElo), BIREME/LILACS), Bioline International and the Directory of Open Access Journals (DOAJ).

Model(s) for preserving scholarly content in the universities. The result depicts the models used by the respondents to preserve the scholarly content in the three universities. The responses revealed that: computer at work/office, 31 (25.8%) said no, while 89 (74.2) said yes; university server, 106 (88.3) no and 14 (11.7%) yes; university digital archive, 102 (85.0%) no, while 18 (15.0%) yes; external web

Table 3. Model(s) for preserving scholarly content.

Computer at work/office

	Frequency	%	Valid %	Cumulative %
No	31	25.8	25.8	25.8
Yes	89	74.2	74.2	100.0
Total	120	100.0	100.0	
University server				
No	106	88.3	88.3	88.3
Yes	14	11.7	11.7	100.0
Total	120	100.0	100.0	
University digital archive				
No	102	85.0	85.0	85.0
Yes	18	15.0	15.0	100.0
Total	120	100.0	100.0	
External web server				
No	88	73.3	73.3	73.3
Yes	32	26.7	26.7	100.0
Total	120	100.0	100.0	
Hard copy e.g. print-outs, notebooks, etc.				
No	29	24.2	24.2	24.2
Yes	91	75.8	75.8	100.0
Total	120	100.0	100.0	
Portable storage device				
No	31	25.8	25.8	25.8
Yes	89	74.2	74.2	100.0
Total	120	100.0	100.0	
Computer at home				
No	38	31.7	31.7	31.7
Yes	82	68.3	68.3	100.0
Total	120	100.0	100.0	
Digital archive of discipline				
No	111	92.5	92.5	92.5
Yes	9	7.5	7.5	100.0
Total	120	100.0	100.0	
My blog				
No	97	80.8	80.8	80.8
Yes	23	19.2	19.2	100.0
Total	120	100.0	100.0	

server, 88 (73.3%) no, while 32 (26.7%) said yes; hardcopy, e.g. print-outs, notebook, 29 (24.2%) said no, while 91(75.8%) believed yes; portable storage devices, 31(25.8%) no and 89 (74.2%) yes; computer at home, 38 (31.7%) said no, while 82 (68.3%) claimed yes; digital archive of discipline, 111 (92.5%) no and 9 (7.5%) yes; my blog, 97 (80.8%) claimed no, while 23 (19.2%) said yes.

The overall results show that computer at work/ office, computer at home, hardcopy, e.g. printouts and notebooks and portable storage devices were the models used by the respondents to preserve their scholarly content. See Table 3.

Divergent with the findings of the present study were studies by Lord et al. (2004); Marshall et al.

(2006) and Groenwald and Breytenbach (2011). Lord et al. (2004) reported on a study that examined the status at the time of the provision and the future needs of the preservation of primary research data in the UK within the e-Science context. Marshall et al. (2006) conducted a field study to examine the current state of personal digital archiving in practice. The participants in the study had each owned multiple computers and other digital recording devices, such as digital cameras, camera phones, digital video recorders and CD or DVD burners. Groenwald and Breytenbach (2011) investigated the awareness about digital preservation and what must be done to preserve valuable original digital materials. The participants in the study were mostly from South Africa. These studies revealed that researchers and home computer users in general lacked knowledge, general awareness, and the consistent usage of preservation strategies and the management of the digital objects they had created on their personal computers.

In this context, other studies in university settings around the globe found challenges with the acceptance and use of digital preservation and archiving systems (Davis and Connolly, 2007; Johnson, 2002; Krevit and Crays, 2007; Lawal, 2002; Pelizzari, 2004; Rowlands and Nicholas, 2005; Van Westrienen and Lynch, 2005). These studies were conducted in universities using academic staff in America, Canada and Europe. In the studies, challenges with use of the digital archives were attributed to distrust, lack of awareness, fear of plagiarism, confusion about copyright, concerns about quality of the material in the institutional repository and questions of who would use the material deposited and how. Furthermore, the time and efforts required to deposit information resources into digital repositories was acknowledged as a challenge.

Furthermore, results from the current study indicate that computer users were increasingly becoming aware of the need to undertake personal initiatives that would ensure that their digital data and information remained consistently accessible and available for their use in the long term. Respondents used diverse preservation modes, ranging from home and work-place/office computers and portable storage. Some respondents still relied on hard-copy printouts for back up purposes.

Conclusion and recommendations

Nigerian scholars and their universities are grossly under-represented in the global information and knowledge industry because scholarly content in the country has remained poorly developed and

disseminated, owing to the decline in the research culture, poor infrastructure and the perennial funding problems for universities and other research centres. These have implications for knowledge growth and dissemination to the country, the continent and the world at large. This study has been able to identify the scholarly content generated, the models for publishing and preserving scholarly content and knowledge sharing and knowledge dissemination activities in the universities. The study recommends as follows:

> There should be a deliberate policy by the Nigerian Government through its universities for rejuvenating research culture among academics to engage in the massive production of scholarly output by providing them with an enabling environment, research funds and other incentives.
> University administrations should prioritize research management and infrastructural upgrade in order to facilitate scholarly content generation and dissemination via the universities' websites and related information and knowledge repositories to the global community.

Declaration of conflicting interests

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Author biography

Kabiru Dahiru Abbas is currently a lecturer with the Department of Library and Information Sciences, Bayero University, Kano, Nigeria. Dr Abbas received his PhD in Information Studies, with a specialization in Knowledge Management, from the University of KwaZulu-Natal, South Africa. He earned a BA in Library and Information Science with a major in Political Science and a Master's Degree in Library and Information Science from Bayero University, Kano, Nigeria. His areas of research interest include: indigenous knowledge systems; digital communication; digital literacy; scholarly communication; innovation and strategy management. Dr Abbas is a member of several international institutions and associations including the European Centre for Research, Training and Development, UK, Golden Key International Honour Society, USA, African Interdisciplinary Studies Association (AISA), Kenya.

Appendix

Questionnaire for academic staff

Dear Respondent,

I, Kabiru Dahiru Abbas, of the Department of Library and Information Sciences, Bayero University, Kano, kindly invite you to participate in the research project titled '**Generation and Management of Scholarly Content in Nigerian Universities'.**

It should take you about 5 minutes to complete the questionnaire.

Thank you for participating in this research project.

_____   _____
Signature   Date

SECTION A: Biographical Information
1. Name of university . . . .
2. Gender: a. Male ( ) b. Female ( )
3. Highest academic qualification:
    a. Bachelor's Degree ( ) b. Master's Degree ( )
    c. PhD ( ) d. Other (specify) . . . .
4. Academic rank at the university:
    a. Assistant Lecturer ( ) b. Lecturer ( ) c. Senior Lecturer ( ) d. Associate Professor ( )
    e. Professor ( )
5. Discipline of respondents:
    a. Agriculture ( )
    b. Humanities/Social Science ( )
    c. Medical Sciences ( )
    d. Science/Technology ( )

SECTION B: Scholarly Content Generation
6. Does your department produce any scholarly journals? a. Yes ( ) b. No ( )
7. What types of scholarly content have you generated or participated in generating? (Tick all that apply)
    a. Pre-prints ( )

b. Journal article ( )
c. Working papers ( )
d. Technical reports ( )
e. Book chapter ( )
f. Book ( )
g. Book reviews ( )
h. Thesis ( )
i. Conference paper ( )
j. Datasets ( )
k. Software ( )
l. Multimedia ( )
m. Other . . . .

8. Please respond to the following questions describing your interaction with colleagues on scholarly matters:

Statement	Never	Rarely	Sometimes	Always
How often do you spend time on personal interactions with colleagues so as to discuss ideas, solutions and scientific proposals?				
How often do you hold professionals meetings with colleagues in your department based on a pre-planned scheduled?				
How often do you hold professional meetings with colleagues from other departments based on pre-planned scheduled?				
How would you rate the willingness of your more qualified and/or experienced colleagues to assist others in learning scientific issues?				
How would you rate the willingness of your colleagues to share their knowledge and resources with others?				

SECTION C: Scholarly Content Management

9. Please indicate ($\sqrt{}$) your preferred model(s) for publishing your scholarly content (multiple answers possible)

Model	Yes	No	Reason(s) for use or non-use
Personal websites			
Traditional subject-based journals			
Fee-based open access journals			
Free open access journals			
Institutional repositories			
Institutional websites			
Conference proceedings			

10. What is your preferred mode of preserving scholarly content such as research data or any other SCHOLARLY output?

a. Computer at work/office ( )
b. University server ( )
c. University digital archive ( )
d. External web server ( )
e. Hard copy e.g. print-outs, notebooks, etc. ( )
f. Portable storage device ( )
g. Computer at home ( )
h. Digital archive of discipline ( )
i. My blog ( )

What makes academic librarians organizationally silent?

Heidar Mokhtari
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Abstract

Academic librarians' organizational silence has a bad effect on the service provision in academic libraries. This study aimed to investigate the status of organizational silence among academic librarians and the factors that influence it as perceived by them. Using the convenience sampling method, 118 academic librarians in the academic libraries of northern Iran were selected. They completed a questionnaire called "Academic Librarians' Organizational Silence Scale". The collected data was analyzed using descriptive and inferential statistic methods. Positively affecting academic librarians' organizational silence behavior, library managements' attitude to silence was the strongest predictor of the librarians' organizational silence. Negatively affecting their organizational silence behavior, the existence of communication opportunities in the library was another predictor. The consideration of organizational silence and weakening its influence among academic librarians is the motivator for their appropriate service provision. This exploratory research is the first step in the deep study of this construct in libraries and among librarians. This study has some implications for theory and practice in the Library Science field. In the former, it extends evidence in the literature aimed at library human resource management. In the latter, it informs library management of factors at work in librarians' organizational silence. Despite its limitations as to the study sample and geographically limited scope of libraries studied, this exploratory study can motivate researchers to consider librarians' organizational silence in different types of library.

Keywords

Academic libraries, Iran, librarians, organizational silence

Introduction

Modern organizations and their environments as well as their communication processes and working procedures have become increasingly more diverse, complex, competent and interactive. In such a complex mixture, employees are potential sources for feedback on addressing and solving the ever-increasing problems and issues of work (Detert and Burris, 2007). As determinant factors of organizational health, well-made decisions depend heavily on how employees contribute in bringing new ideas, considerable suggestions and necessary corrections into their organizations (Umar and Hassan, 2013). Then, employees need to adopt a loud organizational voice for active contribution to their organizational affairs rather than remaining "organizationally silent".

As a collective phenomenon, organizational silence can be defined as a collective behavior that appears when most members of an organization choose to be silent (Morrison and Milliken, 2000). When there is organizational silence in an organization, its members suppress their concerns about personal or organizational issues (McGowan, 2003). This kind of silence can result among other things in decreasing job satisfaction and commitment to the workplace (Vakola and Bouradas, 2005). Organizational silence is conceived as a behavioral attitude significantly related to other "external and internal behavioral factors" in organizations.

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Like other organizations, libraries of all kinds need creative, innovative and motivated librarians in order to succeed in our complicated information age. Innovation, creativity and attitudes toward change are major factors in library success and its dynamics. It requires librarians to choose to voice their opinions and concerns about various matters existing or occurring in their libraries and actively participate in developing library projects and plans. As Liu et al. (2009) state, organizations need staff to express their ideas openly and be responsive to the changes and challenges of their work environment. In our ever-changing world, this is true of libraries as potential dynamic organizations faced with other alternatives such the Net. Librarians should share their information and knowledge with their managers, users and colleagues, and even other related organizations to solve their work-related problems and echo their main social roles as radical librarians. The importance of speaking up for change in your broader information community begins in your local organizational context. The point is that if internal factors are silencing librarians then perhaps they are also becoming victims of a behavioral practice which also influences their ability to play a broader role in the community

If librarians decide to voice and express their opinions, especially when facing problematic situations at work, these situations can be detected and managed effectively on their own or with their managers. If they tend to be silent, problematic situations may remain and cause harm to them, their libraries and end-users in the long term. Some librarians may choose to be silent and not to speak, however.

What makes librarians organizationally silent? There is no research studying this main issue in library settings including those of academic libraries. Some researchers in the fields other than Library and Information Science (e.g. Vakola and Bouradas, 2005) argue that top managers' and supervisors' attitudes towards silence as well as communication opportunities can affect staff's organizational silence (Morrison and Milliken, 2000). This exploratory study aimed to investigate the probable effects of these variables on organizational silence in the academic library setting in Iran.

But why were academic libraries chosen to be studied? Academic libraries are changing in response to various evolutionary changes in technological, educational, social and research issues, as well as those in users' demands and habits. They need to justify their existence to their parent organizations and university administrators and have reasonable consensus on plans for the future. It necessitates the active involvement of academic librarians in decision making,

planning and demonstrating effective patterns as well as directing planned developmental programs and even showing the true path to the future. In addition, as noted by Vakola and Bouradas (2005), there is some pressure to express and share opinions in a change context. This further informs us about the importance of reinforcing voice and preventing silence in academic libraries in our ever-changing age. For these reasons, academic library and librarians have been chosen for this empirical exploratory study.

As the topic was investigated in the context of Iran's academic libraries, some information is needed for contextualization. In the case of Iran, as a developing country, all central and branch academic libraries work under the supervision of various small and big universities and scientific institutions, as their parent organizations. These universities and institutions are supported in turn by two scientific-research ministries (Ministry of Science, Research and Technology and the Ministry of Health, Treatment and Medical Education) and Islamic Azad University. These libraries vary in their criteria for library management, staffing and budgeting, with their relatively independent procedures and policies.

Regarding the above-mentioned remarks, this study can inform other researchers in the Library and Information Science field in similar countries as well as other types of libraries.

Theoretical framework and research hypotheses

It is widely agreed that it is important for all organizations that employees make voluntary contributions aimed at improving their current workplace practices (Knoll and Van Dick, 2013). Sometimes, employees remain organizationally silent and withhold their ideas, information and opinions on important work-related issues and problems in organizations.

Researchers have explained different reasons for employees' silence in their workplaces. Morrison and Milliken (2000) focus on internal and external forces and limitations, and argue that this sort of silence stems from top management that systematically reinforces silence among staff. They note that such a silence is due to employees' fear of negative repercussion and to the belief that their opinions are not sufficiently valued and seriously considered at all. This results in organizational silence in which most employees prefer to keep silent about organizational matters, problems and concerns.

It is an unwanted organizational behavior that wastes costs and efforts and negatively affects all facets of an organization. Hazen (2006) believes that

silence in organizations includes among other things quieting, censorship, suppression, marginalization and exclusion. When employees decide to be silent, they withhold information useful and valuable to the organization to which they belong (Tangirala and Ramanujam, 2008). This takes various forms such as collective silence in meetings, low level of participation in suggesting schemes, and so on (De Maria, 2006).

In spite of its pervasiveness in organizations – as noted by some researchers, for example Morrison and Millikan (2000), Pinder and Harlos (2001), employee organizational silence has not received the rigorous research attention that it deserves and has generally been neglected, especially in the Library and Information field. In addition, research on voice and silence behavior has some western bias as most studies were conducted in the West (Brinsfield et al., 2009).

Organizational silence has, however, some important implications for employee practices and organizational performances. Liu et al. (2009) regard organizational silence as a barrier to success in the workplace and note that how to break the culture of silence is a big challenge for many managers.

Morrison and Milliken (2000) consider organizational silence in the sociology of the workplace rather than the psychology of the individual employee. They argue that organizational silence is an outcome of managers' attitudes and originates from their implicit beliefs and extends to organizational practices. Managers' fears of negative feedback, their belief that people are naturally lazy, their own characteristics and some other organizational practices are at work in creating, perceiving and developing organizational silence among employees. Milliken et al. (2003) argue that in an organizational context where managers do not wish to hear about organizational problems and may punish staff for their speaking out, individuals choose to be silent. Donaghey et al. (2011) emphasize the role of managers' attitudes and behaviors in perpetuating a climate of silence through designing particular institutional arrangements.

In addition, the lack of supporting communication channels and openness by organizations is a reason for organizational silence (Vakola, and Bouradas, 2005). Communication opportunities relate to "openness and trust in communication, information sharing, perceived feeling of having a voice and being taken seriously" (Vakola and Bouradas, 2005: 445). When communication opportunities exist and are active, there is an increase in some involvement in decision making, active participation in discussions on organizational issues and trust in management (Smidts et al.,

2001). It can be concluded that employees' having an opportunity to share their information with their managers and colleagues via appropriate communication channels leads them to break organizational silence and to speak out.

Considering the theoretical framework briefly discussed above, it can be assumed that managers' attitudes toward employees' silence may develop employees' organizational silence behavior and the existence of communication opportunities may result in their using their voice and weaken their organizational silence behavior. Then, it was hypothesized that in the context of academic libraries:

1. Academic librarians' perception of library managers'/head librarians' attitudes to silence positively affects their organizational silence behavior.
2. Academic librarians' perception of existing communication opportunities in their libraries negatively affects their organizational silence behavior.

Methodology

Participants, settings and procedures

This study was conducted in the summer of 2015. The research sample consisted of 125 randomly-selected academic librarians working in various academic libraries of 18 small, middle-size or large universities located in northern Iran. Of these, 11 universities were under the supervision of the Ministry of Science, Research and Technology; six were part of the Islamic Azad University; and two under the Ministry of Health, Treatment and Medical Education. These libraries were selected by the convenience sampling method because the researchers had no direct access to all the academic libraries located in the region. After asking the library managers/head librarians for permission to conduct the survey, the librarians (anyone with the term librarian in the title of their job) were asked to complete an adapted anonymous paper-and-pencil questionnaire called ''Academic Librarians' Organizational Silence Scale''. A total of 118 fully completed questionnaires were gathered and analyzed. Of the subjects, 72 (61%) and 46 (39%) were female and male, respectively. Their mean age was 32.7 (SD = 12.1), ranging from 23 to 44 years old. Their working background ranged from three to 23 years with a mean of nine years (SD = 6.2). Regarding the nature of the study, head librarians and library managers were excluded and only staff librarians were asked to participate and complete the questionnaire.

Measures

A 17-item questionnaire was adapted from the main scale used by Vakola and Bouradas (2005) for measuring some antecedents and consequences of organizational silence in a company which was about to undertake a large-scale change. The original questionnaire in English was adapted for the academic library context (Appendix 1) and translated into Persian by a small group of three management researchers who were proficient in English as well as in Persian. Ease of understanding of the translated version in the context of Iranian librarians was considered, as well as retaining its essential meaning.

The scale included three main components. The component of "academic librarians' perception of library managers' attitudes to silence" was measured by a 5-item scale. This was a 7-point Likert-type scale ranging from 7 (strongly agree) to 1 (strongly disagree). The items were scored in a way that the higher scores represented more attitudes to silence.

The component regarding "academic librarians' perception of existing communication opportunities in their libraries" was measured by a 5-item, 7-point Likert-type scale ranging from 7 (strongly agree) to 1 (strongly disagree). The items were scored in a way that the higher scores represented more communication opportunity and openness.

The component of "academic librarians' organizational silence behavior" was measured by a 7-item, 7-point Likert-type scale ranging from 7 (always) to 1 (never) for the first four items and 1 (with great difficulty) to 7 (with great ease) for the last three items. The items were scored in a way that the higher scores represented more organizational silence behavior.

The highest and lowest scores of an individual in the questionnaire were 17 and 119, respectively. The total internal consistency of the scale in this study was $\alpha = .77$ ($n = 30$). The content validity of the scale was confirmed by four specialist researchers in Human Resource Management and Library and Information Science. The internal consistency (reliability coefficient) of the scale was averaged for an overall score of $\alpha = .89$, which is in accepted range. The internal consistencies of the three main components included in the scale are separately shown in Table 1.

Data analysis

By using SPSS 21 software, collected data was analyzed. Some descriptive and inferential statistic methods were used for summarizing data and testing the study hypotheses (including among others, multiple regression analysis).

Table 1. Means, standard deviations, number of items and reliability coefficients of the study components.

Study components	M	SD	No. of items	Alpha
1. Academic library managers' attitudes to silence	3.85	1.42	5	.75
2. Existence of communication opportunities among academic librarians	4.40	1.10	5	.79
3. Academic librarians' organizational silence behavior	4.10	.87	7	.81

$n = 118$

Table 2. Inter-correlation matrix of the study's variables.

Study variables	1	2
1. Academic library managers' attitudes to silence		
2. Existence of communication opportunities	-.45**	
3. Academic librarians' organizational silence behavior	.19*	-.34**

$n = 118$. *$p < .05$, **$p < .01$

Findings

The descriptive statistics, the number of the items of each component and their internal consistencies are shown in Table 1. As can be seen, the mean score of the component regarding "academic library managers' attitudes to silence" (M = 3.85, SD = 1.42) reveals that there was not a considerable attitude to silence among the academic library managers as perceived by the academic librarians in the studied context. This is also true in the case of their organizational silence behavior (M = 4.10, SD = .87). Regarding the mean score of existing communication opportunities perceived by academic librarians (M = 4.40, SD = 1.10), it can be contended that there were relatively open communication channels and opportunities among the academic librarians.

Table 2 shows the inter-correlation matrix of variables of the study. There was a positively moderate correlation between academic library managers' attitudes to silence and academic librarians' organizational silence behavior ($r = .19$, $p < .05$). This fully supported Hypothesis 1.

As the table shows, there was a negatively moderate relation between the perceived existence of communication opportunities among academic librarians and their organizational silence behavior ($r = -.34$, $p < .01$). Therefore Hypothesis 2 was also fully confirmed.

To further explore Hypotheses 1 and 2, a multiple regression analysis was conducted, entering academic

Table 3. Multiple regression analysis examining the effects of academic library managers' attitudes to silence and the existence of communication opportunities on academic librarians' organizational silence behavior.

Academic librarians' organizational silence behavior				
Independent variables	B	SE B	β	t
Academic library managers' attitudes to silence	.44	.04	.31	5.20[**]
Existence of communication opportunities among academic librarians	-.68	.05	-.39	-6.71[**]

$n = 118$. $R^2 = .35$, **p** = .00, $F_{(2, 116)} = 26.41$. *$p < .05$; **$p < .01$.

library managers' attitudes to silence, and the existence of communication opportunities as independent variables and that of academic librarians' organizational silence behavior as a dependent variable. As depicted in Table 3, the results of regression analysis showed that these two predictors accounted for about one-third of the variance in test scores ($R^2 = .35$), which was highly significant ($F_{(2, 116)} = 26.41$, $p = .000$). As a result, the lack of communication opportunities among academic librarians as an independent variable was the strongest significant predictor of academic librarians' organizational silence behavior as the dependent/criterion variable ($\beta = -.39$, $p < .01$), followed by that of academic library managers' attitudes to silence ($\beta = .31$, $p < .01$).

Discussion and conclusion

This study examined the effects of possible "silence climate" created by academic library managers' attitudes to silence on the one hand and the existence of communication opportunities among academic librarians on the other hand on their organizational silence behavior. Regarding a positive relation between academic library managers' attitudes to silence and a negative relation between communication opportunities among academic librarians as perceived by them and their organizational silence behavior, it can be said that the results are consistent with the propositions noted by Morrison and Milliken (2000) and accord with the empirical study by Vakola and Bouradas (2005). It is worth noting that the silence behavior is a result of external factors as well as internal ones. The former are not examined in this study. However, external factors such as cultural context are at work in organizational behavior, as reviewed by Gelfand et al. (2007) and noted by Nikmaram et al. (2012) in an Iranian academic setting. However, the importance of speaking up for change in the broader

information community begins in the local organizational/in-house context. If internal factors are silencing, then librarians are also becoming victims of a behavioral practice which also influences their ability to play a broader role in the community. Studying possible external factors could be a subject for further research. This is so in regard to demographic information on subjects (e.g. their gender, academic level, career status) and background of organizations (e.g. their management policies, hierarchical structures, etc.). As a result, it is necessary to seriously consider these relations in the context of libraries of all kinds, especially that of academic libraries in other social, economic, cultural and political contexts.

Fear of negative consequences, lack of open communication, library managers' non-supportive behavior to changing ideas and sharing information are all probable factors at work when academic librarians choose not to express their opinions, views and disagreements. As library managers' attitudes to silence were found to be one of main predictors of academic librarians' organizational silence, it can be concluded that the directness and frequency of relationships and contacts among academic librarians and their managers/head librarians highlight the importance of such attitudes in librarians' deciding on whether or not to speak out. As a result, if academic librarians perceive their manager to be a supporter of voice behavior, they are encouraged to voice their concerns and express library-related issues.

As it was found, the existence of communication opportunities among academic librarians negatively related to their organizational silence behavior. This is the strongest predictor of academic librarians' organizational silence behavior. In order to make librarians highly motivated to speak out, library authorities should ensure that communication opportunities do exist in their libraries and try to create networks for exchanging ideas among them. In addition, further research is needed for studying organizational commitment to communication opportunities by analyzing organizational charts and institutional policies in libraries of all kinds and their effect on organizational silence. The latter in particular provides us with cross-validation as to whether there were communication opportunities enshrined in the policy and practices of the libraries studied.

If we want creative, innovative, committed and satisfied academic librarians, some efforts are needed to eliminate or weaken factors affecting or leading to their organizational silence. Initiatives such as continuously facilitating communication among librarians, fundamentally changing library practices and structures, and increasingly improving the attitudes

of library authorities can help us to remove a climate of silence and result in increased effectiveness and satisfaction of librarians. Academic libraries are increasingly demanding more and more participation from their librarians in the age of ever-increasing change we live in. More intensive competition with other alternatives, end-users' higher expectations and various needs, the necessity of high quality service provision appropriate for a constant environment of change, and so on necessitate librarians being innovative and responsive to various challenges of the information environment and speaking out against library issues. In order to survive and become best, academic libraries need librarians who share their information and knowledge for the better performance of the library. This can cause change management programs in academic libraries to develop in favor of library service improvement. Organizational silence is one of the major obstacles to success and dynamics. The continuation of this silence creates silent norms and reinforces an environment of dissatisfaction which is harmful for the library climate. This can result in low-quality service for end-users. In an ever-changing context, managers in libraries of all kinds must try to hear the truth and realities from staff librarians to be able to manage changes effectively.

This exploratory study is the first to test the effects of organizational climate of academic libraries on librarians' organizational silence in the context of a developing country. The findings are of particular relevance when considering the status of academic libraries in our ever-increasing world of change and users' higher expectations throughout the world. As an early step, this study can provide an impetus for further research in other libraries of all kinds and in countries with different cultural, social and economic backgrounds.

The study suggests an interesting topic that implies practical usefulness for libraries as well as opportunities for further research. It bridges a gap between theory and practice. The theoretical ideas of organizational silence were translated into specific practical suggestions. The ideas in this paper could have a positive effect on the organizational structure of academic libraries which could result in improved functioning of the libraries.

The main and considerable limitation of this study is that data was gathered from the academic librarians working in some limited universities and academies in Iran and with specific cultural norms. In addition, the findings were confirmed from fields other than Library and Information Science, due to the lack of similar studies in the field. Any generalization or evaluation of this study should be done with this in mind. The collected data was based on perceptions of academic librarians at "that moment". As a cross-sectional study, this survey needs to be deepened by conducting other longitudinal studies in other contexts. In addition, we did not consider the possible effect of macro level factors (such as a university's top management and macro-level organizational sphere) on organizational silence. Other studies are needed to investigate such factors. The consequences of organizational silence for librarians and their workplace (e.g. their commitment, job satisfaction, and so forth) need some deep studies in similar and different library contexts.

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Author biography

Heidar Mokhtari received his PhD in Library and Information Science from Ferdowsi University of Mashhad, Iran, in 2012. He has authored some articles, one co-authored book and translated four books from English into Persian in the field. His research interest is mainly human information behavior as well as library management. He is now an Assistant Professor in the Library and Information Science Department, Pyame Noor University, Iran.

Appendix 1: Academic Librarians' Organizational Silence Scale

Component 1: Academic librarians' perception of library managers' attitudes to silence

Items:

(1) The library manager/ head librarian of this library encourages me to express my disagreement on library issues and problems.

(2) In this library, I feel free to express my ideas.

(3) If one disagrees on library issues, they can be labeled as troublemaker by the library manager/head librarian.

(4) If one expresses their disagreement on library issues, they may suffer from negative consequences coming from the library manager/ head librarian.

(5) If one disagrees on library issues, it can be perceived as lack of loyalty by the library manager/head librarian.

Component 2: Academic librarians' perception of existing communication opportunities in their libraries

Items:

(1) Communication with colleagues from other libraries in and out of the University is satisfactory.

(2) There is a systematic and organized exchange of knowledge, expertise and experience among library staff in this library.

(3) There is adequate communication between employees and library manager/head librarian in this library.

(4) Organizational changes are adequately communicated to the library staff.

(5) The library informs employees of its mission, programs, plans and actions.

Component 3: Academic librarians' organizational silence behavior

Items

How often do you express your disagreements to the library managers/head librarian regarding the following issues?

(1) Library issues

(2) Organizational issues

(3) Issues related to your job

(4) Issues related to job satisfaction.

How easily do you express your disagreements to the library managers/head librarian regarding the following issues?

(1) Library issues

(2) Organizational issues

(3) Issues related to your job.

Personalization vs. privacy: An inevitable trade-off?

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Abstract

This article explores the issue of online privacy and personalization in light of the new possibilities the Internet and other available technologies provide. Search engines and social networks are increasingly customizing our search results, advertisements and contact networks, making each user's experience unique. Since Snowden's revelations people have taken a deeper interest in what kind of data third parties are gathering from us, and for what reasons. Despite their concerns, people still seem willing to trade their privacy and data for convenience. In an online world that becomes more personalized every day, where all our activity can be tracked, stored, analyzed and used by providers and governments, where do we draw the line between personalization and surveillance and people's rights?

Introduction: The filter bubble

Open your web browser and Google "oil". Do you think the results you are now seeing are the same as a person across the globe from you is seeing? The same as your neighbor's or the person's in the nearest desk at work? Most people will think when searching for a term in Google we all see the same objective list of results, based on the search engine's famous Page-Rank algorithm. But since Google launched its personalized search in December 2009, this is no longer true. The same happens with Facebook, YouTube, Amazon, eBay, Apple and many other companies. These sites gather as much information from you as they can and use it to provide you with a personalized list of results, or advertisements. Now you get the best results you could have based on what the algorithm (basically, a set of rules to be followed by a computer) thinks you will like.

Eli Pariser, senior fellow at the Roosevelt Institute, reflects in his book *The Filter Bubble*:

> a huge majority of us assume search engines are unbiased. But that may be just because they're increasingly biased to share our own views. More and more, your computer monitor is a kind of one-way mirror,

reflecting your own interests while algorithmic observers watch what you click. (Pariser, 2011b: 2)

According to Pariser, your filter bubble is your own personal information universe. The contents of your bubble depend on who you are, your online activity and even who you befriend.

One of the main issues here is that people are not able to see how this selection is being done and which are the parameters used to filter our information. The technology behind it is invisible to the end user, so we cannot be sure how it is classifying us and if it is getting our interests right. If we take away the human factor by leaving the responsibility to choose, edit and suppress the content we see to an algorithm only, we take the risk of not knowing why we are being shown certain things and not others. Furthermore, as the machine that defines our experience is ultimately

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created by corporations we can never rule out biased and profit-driven results as well.

We could end up with an opaque system that instead of fostering serendipity and relevance will only leave us wondering what is happening behind the scenes. What can be seen as an attempt to deliver more relevant search results, save us time and navigate us through an ocean of information, has its downside too. Which are the criteria used to personalize our results? Are we even aware that this is being done? And most important: can we turn this option off if we want to?

This article aims to address these and other questions from a critical perspective, providing a timely revision of literature and regulations, as well as some tips on how to deal with this reality, which hopefully will be helpful and thought-provoking for librarians.

Personalized results or bias?

Personalization can be described as "the ability to proactively tailor products and product purchasing experiences to tastes of individual consumers based upon their personal and preference information" (Chellappa and Sin, 2005: 181). This means gathering and analyzing an individual's information and preferences to deliver offers users will find themselves more willing to click on.

One of the problems of personalization algorithms is that they have a way of narrowing down our information universe without us even noticing. You are not able to see what is edited out, and ultimately you may be shown only results that corroborate your own point of view of the world. There may be nothing to challenge your ideas, nothing to take you out of your comfort zone, no serendipity. A dangerous thing, if you come to think of it. Personalization is based on your previous activity on the Web. For a researcher or a librarian, however, past history is not always relevant to their present interests and information needs. When addressing a new topic, you might want to be free of previous assumptions. Librarians should not forget that this trend aims primarily to make better advertisements, not to give the user a better search experience.

Google uses more than 50 signals to personalize its search results, and that is when you are not even logged in. They cover from the computer you are using to your browser and location, and many of the signals are still undisclosed. Researchers tested Google's case and arrived at the conclusion that:

> personalisation is a far from unambiguous process simply delivering better results to the user. At the moment personalisation is both taking place to a surprising extent (. . .), but with relatively trivial results (. . .) most likely reflecting the fact that we are in the early stages of the

process and that, at least, some of the benefits of personalisation will not accrue on the side of the end user, but on the side of the advertisers and thus Google itself, which sells these personalised audiences. (Feuz et al., 2011)

Furthermore, they found evidence that:

> Google is actively matching people to groups, which are produced statistically, thus giving people not only the results they want (based on what Google knows about them for a fact), but also generates results that Google thinks might be good to users (or advertisers) thus more or less subtly pushing users to see the world according to criteria pre-defined by Google. (Feuz et al., 2011)

Of course Google is not the only one, but its dominance and huge user base places it right into the spotlight.

Facebook, for instance, slowly starts hiding updates from friends with whom you do not frequently interact and the same happens to your statuses not showing on some of your friends' walls. As noted by Pariser (2011a):

> Facebook was looking at which links I clicked on, and it was noticing that I was clicking more on my liberal friends' links than on my conservative friends' links. And without consulting me about it, it had edited them out. They disappeared.

Proprietary databases like EBSCO and online library catalogs have enhanced the search experience so that you are more likely to be directed to what you are actually looking for, and not what an algorithm thinks you want. This is made possible thanks mainly to the metadata added by information professionals to each resource cataloged. Unfortunately search results personalization is not the only issue that prevents us from finding important stuff. The vast amount of content available online is in itself a drawback in any search. Valuable information is buried among lots of noise. Is this just something we have to learn to live with? Not necessarily. Unwanted personalization can be defeated to a certain extent by using simple tricks that will get you out of the bubble.

An example of a tool that can help you achieve an anonymous experience online is The Onion Router or TOR, free software that directs Internet traffic through a worldwide network, to conceal users' location and avoid surveillance and tracking. Another is DuckDuckGo, an alternative search engine that does not collect or share personal information and delivers the same results to every user. Omlet, a new approach to mobile social networking, gives the user the ability

to communicate and share media without being monitored and monetized. Media and messages sent are stored in the Cloud, but in a third-party provider the user can choose, helping to avoid, for example, targeted advertising (see Boxes in Appendix for more information).

Also, there are a great number of resources that you may not be able to find using a general web search engine. Some examples include: dynamic content pages, dynamic databases, unlinked pages, sites that require registration or login to access, internal pages belonging to a private company or organization, pages outside the HTTP and HTTPS protocols and other material published in non-standard formats.

Google indexes only a small percentage of the World Wide Web. The huge amount of information left out, several times bigger than the Web we see, is known as the invisible web or deep web, and it is not indexed by standard search engines like Google (see Boxes in Appendix for examples of resources that search the deep web and/or protect your privacy). Also, there are some Google tricks available online you can use to search beyond its basic features and get better and more relevant results.

In general, some techniques like deleting your browser history and cookies regularly, using the incognito navigation, clicking on links that are not in your usual area of interest in order to make you harder to stereotype by the machine, and so on, are helpful to prevent excessive personalization. Social sites where people share links, like Twitter or Delicious, are also a good place to find relevant information. Let other people discover interesting sites and share them with you. Take advantage of the "wisdom of the crowds".

The best way to avoid being wrapped in the bubble is by becoming a savvy searcher, and librarians play a key role in helping citizens achieve this goal. Information literacy is crucial in all stages of education, and it should be an integral part of our education in order to embrace an active and responsible digital citizenship. Democracy, innovation, discovery, tolerance, all require us to be exposed to multiple and diverse points of view. Searchers should not hesitate to experiment and go beyond their usual places in the Web, after all: "A world constructed from the familiar is a world in which there's nothing to learn" (Pariser, 2011c).

The new currency: Your data

Another drawback of personalization is that companies and governments are able to gather more data and insights about you than you may realize. The risks of this huge amount of data available online being harvested and analyzed without your knowledge or consent are great. Our data are not only available for sale; the risk of them being available to anyone through hacking or accidental disclosures (e.g. Facebook's glitch that made private chat messages appear in public timelines) is huge. Stories like this are almost everyday news, a remarkable example being the Heartbleed encryption bug which affected almost a fifth of the Web's secure servers making passwords vulnerable to theft.

When you accept someone as a friend, when you click on an advertisement, when you "like" something that someone else has published you are creating a relationship, an edge. This information alone could mean nothing, but combined with millions of other people's data, it is really valuable indeed. Do not be fooled into thinking these sites are free; you are paying a price: your data. The quite recent acquisition of WhatsApp by Facebook is proof of that. What was Facebook paying $19 billion for – a mobile messaging service provider? Hardly. Among other things, they were paying for more than 500 million users' data, including phone numbers that users were sometimes reluctant to give to the social network site (Solon, 2014).

A recent study about Facebook's "likes" proved that they can reveal vital information about people's location, sexual orientation, ethnicity, religious and political views, intelligence and even happiness, without these information being expressly disclosed (Kosinski et al., 2013). This makes the unsuspecting user a target for advertising with information they have not intended to make public in the first place, and could even pose a threat to their safety.

However, no matter how high the risks, people are usually willing to trade their information for convenience. This is known as the "privacy paradox", the situation in which online users are concerned about their privacy but do not act accordingly. This is illustrated every time an app is downloaded and the user accepts all its conditions before installing, in most cases without reading them. These conditions would probably include things such as access to your location, to all kinds of data stored in your phone, and even to some system tools that allow the app to take pictures, record audio and videos with your phone's camera.

As most people have never experienced the downsides of a situation where their privacy was directly infringed, they tend to see the case as something that happens to other people, and not to themselves. Recent research developed a framework to explain the individual's information disclosure behavior. The author found that two interrelated trade-offs take

place before users make a decision: the "privacy calculus" (that means the trade-off between expected benefits and privacy risks) and the "risk calculus" (meaning the trade-off between privacy risks and efficacy of coping mechanisms). The author called the two trade-offs together "the dual-calculus model" (Li, 2012). Another study found that companies offering their customers individual-level control over their privacy settings reduce their privacy concerns – "therefore one potential, practical way of resolving the informativeness and intrusiveness tradeoff is to give consumers explicit control over how their information is used in the hope of reducing the disutility that results from intrusiveness" (Tucker, 2012: 5).

In fact, when asked about government surveillance and data mining, people usually recited the "I've got nothing to hide" mantra. According to this notion "there is no threat to individual privacy unless the government uncovers unlawful activity, in which case a person has no legitimate justification to claim that it remain private" (Solove, 2007: 746). Solove strongly critiques this argument by stating that "the problem, in short, is not with finding an answer to the question: 'If you've got nothing to hide, then what do you have to fear?' The problem is in the very question itself" (p. 748). The deeper problem within this argument is that:

> it myopically views privacy as a form of concealment or secrecy. But understanding privacy as a plurality of related problems demonstrates that concealment of bad things is just one among many problems caused by government programs such as the NSA surveillance and data mining (p.764).

Solove thinks a simple singular and narrow definition of privacy is not enough so he presents instead a taxonomy, which includes things as information collection, surveillance and interrogation, among others, and which can be amended as new privacy issues arise. Privacy should not be weighed as an individual right against the greater social good, because even when it protects the individual, it does so for the sake of society. One of the major problems in the taxonomy is referred to as "exclusion" and it cover cases when people are prevented from knowing how their information is being used and are also unable to access and correct errors in it. This goes hand in hand with another problem, named "secondary use", meaning a situation where data are obtained for one purpose and end up being used for a different, unrelated purpose without the person's knowledge or consent. Solove's approach to privacy as a pluralistic conception leads to his belief that we cannot fix it as a whole, but rather we need to focus on each specific privacy problem at hand and address it individually.

Online privacy: The Internet of Things as the world's greatest surveillance tool

We have reached a time when the Internet is almost ubiquitous, facilitated mainly by the rise in mobile and wearable technology. This technology is able to capture not only information about users, but information about their surroundings and the people there without their knowledge or consent in a seamless, unnoticed way. The degree to which technology permeates our everyday life generates such dependence on our devices – sometimes even to the point of addiction – that it may well be true what Julio Cortázar (1999: 24) described in one of his short stories about being given a wrist watch as a gift: "they aren't giving you a watch, you are the gift, they are giving you yourself for the watch's birthday".

According to Landau (2016), this was facilitated by a combination of changes, including "free" Internet services, increasing use of mobile devices and the development of the Internet of Things (IoT) which, in conjunction, made surveillance much easier to achieve and privacy more difficult to protect. "Privacy versus surveillance in Internet communications can be viewed as a complex set of economic tradeoffs – for example, obtaining free services in exchange for a loss of privacy" (p. 54). Landau explains that, as far as application design goes, the possibilities are there, but, after all; "privacy has always been about economics", so as long as our Internet model remains "free" and advertising based, it is unlikely that the tracking parties will stop and, in this regard, people's demands are as important as government regulations.

In the near future, the already present IoT will penetrate even more aspects of the physical world, including healthcare, homes and cities. "Smart" things' capabilities for ubiquitous and pervasive data collection will represent bigger challenges and threats to privacy if not implemented correctly. Ziegeldorf et al. (2014: 11) summarize these threats into seven categories in the light of the evolving IoT. From those, identification, tracking and profiling are the ones which will be mostly aggravated by the IoT, they argue, profiling being one of the most severe. As "business models that depend heavily on profiling have enjoyed tremendous success and so the trend for big data continues, fueled by the IoT's central promise for fine-grained and ubiquitous data collection" (p. 11), it is necessary to find privacy-aware solutions for the IoT that balance business interests and customers' privacy rights and requirements.

Combining data from different sources (social media, purchasing history, personal and professional networks, geolocation, etc.) companies can predict and influence customer behavior. In some stores, mannequins equipped with facial recognition software have tracked the age, sex and race of walk-in customers in a store, so that the owner could change his marketing efforts accordingly or send an advertisement to a potential customer's phone right while he is passing by. Klout scores are used to get upgrades in hotel rooms, VIP treatment in airports and other gifts (Stevenson, 2012). Businesses know that by rewarding influential users they would gain more publicity at a far cheaper cost. A study found that retailers' prices would vary according to users' characteristics. For instance, travel websites would increase their prices if the user had already visited their site, thus revealing that they were interested in buying (Valentino-Devries et al., 2012). Google's wide array of services, in an effort to monopolize the market, allow for users' data to be consolidated across all of them, giving a very complete picture of each one. These are just some examples of the need to be aware of which data we are giving away, which data they are collecting without our knowledge and what we could do about it.

Vance Packard's 1957 book *The Hidden Persuaders* described marketers' strategies to shape consumers' behavior and highlighted:

> the way many of us are being influenced and manipulated – far more than we realize – in the patterns of our everyday lives. Large-scale efforts are being made, often with impressive success, to channel our unthinking habits, our purchasing decisions, and our thought processes by the use of insights gleaned from psychiatry and the social sciences. Typically these efforts take place beneath our level of awareness; so that the appeals which move us are often, in a sense, 'hidden'. (Packard, 1957: 11)

This is not a new trend; crucially, though, today there are better and perhaps more intrusive ways of achieving the same goal.

It would be ideal if companies could also be encouraged by citizens and governments to behave responsibly. Whilst trying to find ways to gain the competitive advantage they are looking for, they must take care not to infringe people's privacy and rights. It may be true that receiving personalized, relevant offers could save you time and improve your shopping experience, but just the access to all that data is a responsibility in itself for the company. We all need to be careful where to draw the line.

Online privacy protection in the US, for instance, relies mostly on the notice-and-consent approach, despite its weaknesses. Nissenbaum (2011) presents an alternative approach within the framework of the contextual integrity theory. She argues that the mere improvement of this technique by making policies clearer and information practices fairer will not be enough since individuals cannot "understand all the facts relevant to true choice at the moment of pairwise contracting between individuals and data gatherers" (p. 32). If, as some have defined it, privacy stands for the right to control information about oneself, then the transparency-and-choice option should be enough. But this take-it-or-leave-it approach leads the author to think "whether individuals freely choose to transact – accept an offer, visit a website, make a purchase, participate in a social network – given how these choices are framed as well as what the costs are for choosing not to do so (p. 35)". The author suggests that the online realm is no different or separated from social life and legislation should apply in both equally. Whenever a situation arises online with no social precedent, relevant actors should construct new norms starting with ends, purposes and values.

Nissenbaum (2009: 3) does not try to define privacy, recognizing the difficulty in the task and the multiplicity of factors involved, but rather to address "why the huge and growing set of technical systems and technology-based practices have provoked and continue to provoke anxiety, protest, and resistance in the name of privacy". As she recognizes: "as troubled as we might be by technologies that diminish control over information about ourselves, even more deeply troubling are those that disregard entrenched norms because, as such, they threaten disruption to the very fabric of social life". In her view, technology provokes anxiety by properties it acquires when becoming a system – connected to a larger network and webs of meaning beyond normal human reach. She identifies two general approaches to the value of privacy: supporting moral and political rights and values; and its critical role in protecting the sphere of the private. What people actually care about is not the sharing of information per se, but the inappropriate, improper sharing of information.

Professor Alan Westin (2003) is another expert to criticize the notice-and-choice approach to consumer information privacy, where "the rational consumer is expected to negotiate for privacy protection by reading privacy policies and selecting services consistent with her preferences" (Hoofnagle and Urban, 2014: 1). This is the assumption on which regulations are based, although it is hardly the case. Based on survey data, Westin segments consumers into three types: privacy pragmatists, privacy fundamentalists, and

privacy unconcerned. Most people, according to him, are pragmatists about privacy, willing to trade personal information for certain benefits.

Westin (2003: 3) defines privacy as "the claim of an individual to determine what information about himself or herself should be known to others. This, also, involves when such information will be obtained and what uses will be made of it by others". He further identifies four psychological conditions or states of individual privacy: solitude, intimacy, anonymity, and reserve. Each individual's needs are different in each state and are in constant change. For instance, they may want to be alone and then require the presence of a friend or a larger group of people:

> such changing personal needs and choices about self-revelation are what make privacy such a complex condition, and a matter of personal choice. The importance of that right to choose, both to the individual's self-development and to the exercise of responsible citizenship, makes the claim to privacy a fundamental part of civil liberty in democratic society. If we are switched on without our knowledge or consent, we have, in very concrete terms, lost our rights to decide when and with whom we speak, publish, worship, and associate. Privacy is therefore a social good in democratic societies, requiring continuous support from the enlightened public. (Westin, 2003: 6)

Of course big data can also be used to achieve some positive effects for the users as well. A lot of its applications can be seen in the health care sector, predicting and preventing disease outbreaks, in natural disaster prevention and response, in weather forecasting, in crime fighting, in traffic monitoring, in improving public services, and more generally in new research in social sciences and anthropology, among other fields.

The maxim of this new era seems to be that if you are willing to be part of the digital world you should be prepared to waive any kind of digital privacy in favor of convenience and just assume that everything you have online is (potentially) public. If governments and big companies are on the other side of the line, there is no one left to look after the best interests of the citizens. We can only hope that people continue to take this issue seriously and demand from their services providers and governments the ethical and appropriate behavior they should show and the corresponding laws to provide the strong regulatory framework needed.

The promises of privacy initiatives and regulations

Edward Snowden and the US National Security Agency (NSA) triggered a massive debate among the public in 2013. In June of that year, Snowden – an NSA contractor – traveled to Hong Kong and once he was safe and far from the US penal system, he disclosed a shocking truth: a top secret program had been authorized by the US Government to conduct mass surveillance on foreign and national communications. Phone records, emails, instant messages, online clicks, everything was susceptible to being heard and recorded using big companies like Apple, Microsoft, Yahoo and Google's data centers (Rispoli, 2013). Even though the NSA declared it was a matter of national security, the truth is that the ordinary people who were monitored far outnumbered the intended surveillance targets (D'Orazio, 2014).

Suddenly, ordinary citizens who may have never given much thought about online privacy started to think about the services they used on a daily basis and all the data they were carelessly giving away without a second thought. This triggered the reaction of citizens as well as organizations, with many initiatives starting across the world to defend the rights of the private citizen.

Although people talk about privacy, as we discussed earlier there is not a clear definition of what it means, and thus, not an easy way to put it into practice. When we worry about privacy "we are left with a feeling of vague unease. We are afraid of losing our privacy. And yet we struggle to define what that even is" (Kift, 2013: 2). But online privacy in many cases depends on the circumstances; the context, the legislation and each individual's expectations. People tend to be more self-conscious about their privacy when something tangible happens – like somebody opening our mailbox to read a letter in front of us – whereas the lack of physical invasiveness of someone browsing our search history or email inbox remotely may seem less intrusive or real (Kift, 2013).

The right to privacy was stipulated in Article 12 of the United Nations Universal Declaration of Human Rights: "No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks" (United Nations, 1948). In Europe, it was defined in Article 8 of the European Convention on Human Rights:

> Everyone has the right to respect for his private and family life, his home and his correspondence. There shall be no interference by a public authority with the exercise of this right except such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic wellbeing of the country, for the prevention of

disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others. (European Court of Human Rights, 2010: 10)

But privacy is not only an individual right, it is fundamental to democratic societies. UK's privacy expert Paul Bernal (Clark, 2014) states that privacy is not just an individual issue:

> privacy provides key protection for collective rights such as freedom of assembly, association and of expression. Internet surveillance doesn't just impinge on privacy, it impinges on all of these. Society simply functions better when people have a reasonable expectation of privacy – so to characterise the right as an individual one, suggesting even that it's 'selfish' is to miscast the debate.

Although Bernal believes that it is reasonable to assume that "pretty much every system has been compromised, and pretty much every activity is monitored", he calls for transparency as a first step in the way to earn people's trust (Clark, 2014).

One of the initiatives that address privacy issues is the International Principles on the Application of Human Rights to Communications Surveillance (IPAHRCS). The 13 Principles present guidelines to ensure surveillance activities are consistent with human rights in an effort "to update understandings of existing human rights law to reflect modern surveillance technologies and techniques" (EFF et al., 2014). The development of these Principles was led by Privacy International, Access, and the Electronic Frontier Foundation (EFF). Today, they are supported by more than 400 organizations and experts, along with 350,000 individuals. The International Federation of Library Associations and Institutions (IFLA) is one of the signatories to IPAHRCS (IFLA, 2014).

IFLA issued a Position on Internet Governance in 2005, endorsing a revised statement in January 2013. The Federation represents associations and institutions around the world whose main job is to provide access to information in any format. In such capacity, IFLA "opposes any measures which would lead to control of information access and freedom of expression by commercial, governmental or sectoral interests, or hinder the development of the Internet as an enabler of human rights''. It supports a multistakeholder approach regarding Internet governance which would involve governments, civil society, business, academia and the technical community, and which encourages participation from all society actors (IFLA, 2013). In line with this position, it also committed to "promote and protect the rights to freedom of expression, freedom of information, right to

privacy and confidentiality, ethical principles and other rights'' as part of the Moscow Declaration on Media and Information Literacy, a proposal produced collaboratively with participants from 40 countries, during the 2012 International Conference "Media and Information Literacy for Knowledge Societies'' (IFLA, 2012).

Other global and regional frameworks worth mentioning, and on which many legislations and guidelines are based, are the *OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data* (OECD, 2013), the EU Data Protection Directive, the Federal Trade Commission's Fair Information Privacy Principles (FIPPs) and the Generally Accepted Privacy Principles (GAPP), created by the American Institute of Certified Public Accountants.

The OECD guidelines define seven principles for data regulation (Parlorama, 2010):

- Notice: subjects should be given notice when their data are being collected.
- Purpose: data should only be used for the purpose stated.
- Consent: data should not be disclosed without the data subject's consent.
- Security: collected data should be kept secure from any potential abuses.
- Disclosure: subjects should be informed as to who is collecting their data.
- Access: subjects should be allowed to access their data and make corrections to any inaccurate data.
- Accountability: subjects should have a method available to them to hold data collectors accountable for following the above principles.

The EU Data Protection Directive, created by the European Commission in 1995, sets rules for data protection in the private and public arena on the principles of purpose limitation, data minimization, and the rights of the data subject. As an evolution of the 1995 Directive, in 2014 the European Commission wanted to unify data protection in the European Union with a single law: the General Data Protection Regulation (GDPR) (European Commission, 2014). This new legislation takes into account key aspects like globalization and technological developments not contemplated by its predecessor. It also introduced the "data protection by design and by default" concepts (Article 23) that require data privacy settings to be set at the highest level by default, leaving the option to "opt-out" instead of having to "opt-in" as before. This regulation will not only apply to EU citizens, but also to any organization that processes

EU citizens' data, no matter where it is located. It was adopted in 2016, not without controversy, and it is expected to apply from 2018. However, no law is perfect and the possibilities of the Internet are endless, so in the future we must be careful not to pass a law that cannot be technically applied in practice, inhibits legitimate initiatives or undermines freedom of expression, among other concerns.

In December 2013, the United Nations' Third Committee (Social, Humanitarian and Cultural) adopted Resolution 68/167, entitled "The right to privacy in the digital age". It was sponsored by Germany and Brazil, and it aimed to protect the right to privacy against illegal surveillance, giving people the same rights they have offline, in the online world. The resolution reaffirms the human right to privacy noting that due to the fast pace of technological development the capacity of governments and other entities to "undertake surveillance, interception and data collection, which may violate or abuse human rights" has been greatly enhanced, potentially endangering these rights (United Nations, 2013).

Other developments in the data privacy and protection legislation are the amendment passed in June 2014 by the US House of Representatives and the proposal of the USA Freedom Act of 2014. The amendment:

> would block the NSA from using any of its funding from this Defense Appropriations Bill to conduct such warrantless searches. In addition, the amendment would prohibit the NSA from using its budget to mandate or request that private companies and organizations add backdoors to the encryption standards that are meant to keep you safe on the web. (Donohue, 2014)

The Bill's supporters include the American Civil Liberties Union, the Liberty Coalition, the Electronic Frontier Foundation (EFF), Google and the Center for Democracy and Technology (Donohue, 2014). The Freedom Act, supported by the American Library Association (ALA) and passed in 2015, bans bulk collection of data, requiring that the Government narrow the scope of its collection and expanding government and company reporting to the public, although it would only apply to US citizens.

Sir Tim Berners-Lee, the inventor of the World Wide Web, celebrated its 25th anniversary proposing the creation of a "Magna Carta" – a bill of rights to protect its users. In this bill the principles of privacy, free speech and anonymity would be explored, as well as copyright laws and the cultural-societal issues around the ethics of technology.

> Our rights are being infringed more and more on every side, and the danger is that we get used to it. So I want to

use the 25th anniversary for us all to do that, to take the web back into our own hands and define the web we want for the next 25 years. (Kiss, 2014)

Although natural variations across different cultural background are bound to arise, Berners-Lee believed that a core document of principles could provide the base for the development of international standards (Kiss, 2014).

All these advancements on the path to a privacy protected world are based on the reasonable premise that everyone should have the right to be informed in a clear and understandable way when their personal data or "personally identifiable information" (any information that can be used to identify an individual, such as name, age, gender, phone number, email address, etc.) are being processed, to have access to their own data, to be assured that their data are being collected only for specified, explicit and legitimate purposes, to be confident that they are kept accurate and up to date and that they are deleted after their purpose is met (European University Institute, 2013). These principles call for what is known as "surveillance minimization" (Clark, 2014), meaning that for every data request there must be a valid and concrete reason, and that controls are in place to make sure that there is indeed.

Even though technology evolves faster than any legislation and in most cases laws do not have the time to catch up with the latest online developments, the speed at which our data are being collected increases every day, making the need for privacy regulations more urgent than ever. Technology does not respect country borders and escapes single nations' regulations. It is undeniable that big data analytics will continue to advance, providing better solutions and outcomes that generate economic and social value. However, the success of this future scenario will rely heavily on the ability to ensure that individuals' privacy and rights are respected. Educating the public and keeping them informed about privacy issues and their rights is one step in the right direction, as it is to think about Internet governance as a whole new governance paradigm, not just applied to punitive and corrective issues. At any rate, we should not relinquish our privacy rights without giving a second thought to the long-term consequences.

The principle of irreversibility: Once online, always online?

Some may think that as more people are born in a world where technology is almost ubiquitous – like a post "privacy issues" era – they will grow up having

fewer concerns and expectations about it. People born today start their digital lives very early; there are pictures of them online since they are babies and even before that. Their educational portfolios and records are digital, and so are their embarrassing party pictures and other things they may regret having shared later in life. Most users never change their default privacy settings, nor read the terms of use before agreeing to them. Even if you do not have an account in any of the services available, you can still be there through material shared by family, friends or people you do not know.

Today employers are using social network profiles to background check potential hires; there are known cases of people not being hired or being fired because they have an online picture or video that is not quite professional. Being able to construct a profile of a user from the data he or she posts online can also lead to discrimination in many forms. Not only because of their gender or ethnicity, for example, but it may also mean that an insurance company might deny you an insurance policy because they had access to your bio-health data (medical and fitness health information), or a bank can deny you a loan because your Facebook friends are not that good at paying their debts.

What happens to users' profiles after they die is still unsettled; in most cases there is no expressed provision in their terms of use to terminate their contract with the service provider. These terms are in place to protect the company from any liability, not to protect the user. This has led to companies hiding behind their policies, terms and conditions of use to justify any kind of data misuse including fake endorsements and social experiments. Facebook, for instance, has been known for "recycling" people's "likes" in posts they may not have even seen or agreed with, just because the unaware user had liked something else from the same site before, or counting links shared in private messages as likes to the site in question (Kosner, 2013). As for social experiments, one of the latest pieces of research made public by the company studied how people's mood changed by showing on their feeds only positive or negative posts. Needless to say, this was done without the users' knowledge or consent.

As a way to address the difficult issue of escaping your online trail, the European Union proposed the controversial "Right to be forgotten" ruling. This law, effective May 2014, requires that search engines like Google receive and evaluate requests from people who want specific search results about them to be deleted. This would apply in cases where the personal information is considered inadequate, irrelevant, excessive, or thought to infringe privacy in any way. It is worth mentioning that the ruling applies only to search engine results, and not to the actual site hosting the information. This sparked an ongoing debate as to the balance between the right to privacy and freedom of expression. While Europe sees this law as the logical online expansion of current offline data protection legislation, the US classifies it as a threat to freedom of speech on the Internet. As much as people can argue that everyone should be allowed to have a fresh start, the public interest has to be taken into account when deciding what people have the right to know (for example, should a public figure or a politician be allowed to delete negative information about them? Or should criminal records be erased at someone's request?). Otherwise, we could be looking at new ways of censorship, while at the same time putting search engines in the position of arbiters of what should or should not be forgotten.

Given this approach of the Internet as a commercial service and the increasing power of companies, it is unthinkable that governments – acting in the best interest of the people – should not regulate what until now has depended on each service provider's will. We cannot forget that corporate boards change over time, so the right mechanisms have to be in place to prevent data abuse. The lines between the digital and the physical world are getting more blurred every day, and there is no doubt that our digital life has a real, tangible impact on our physical daily life. People may learn the hard way that imprudent use of these technologies could affect and threaten their professional identities, as well as their personal ones. In this scenario, learning how to manage your digital identity and footprint has to be a must for citizen education.

Conclusion

Personalization, be it on your search results or the use that is made of your data, is an issue that should not go unattended. There are not real reasons for personalization and privacy to be antagonists; good governance and regulation are the starting points that will allow the right controls to be in place for data to be collected in a meaningful and ethical way. Privacy, online and offline, is not about not sharing information or leaving people alone, but about transparency on the methods used and the purposes sought. It is about each person's right to decide, free from commercial and governmental pressures and interests.

There is some consensus about what good data governance should include: it should compel the collector to ask the user for explicit and informed consent before assembling the data, to state the purposes of the gathering and how data will be used, and to explain all this in a clear, easy to understand way. Anyone

collecting personal data should be responsible and accountable for that and for providing the adequate anonymity and security required in each case. In this way, you would know exactly what you are disclosing and what you are getting in return, being free to leave a provider and take your data with you if you do not like the proposed deal.

Companies should see this not as a threat, but as an opportunity to innovate in the privacy arena and win consumers' trust back. The "Ranking Digital Rights" project from the New America Foundation (2014) developed a benchmarking system to rank the world's most powerful technology companies depending on how well they protect their users' free of expression and privacy. The ranking is a powerful tool to encourage companies to improve their current practices and will shed some light into how companies exert their control over the public's use of the Internet.

This article is not meant to be naïve or alarmist about the digital future that awaits us, neither to be exhaustive in addressing the topic at hand. It just wishes to make the reader think and reflect about these issues and issues yet to come. The truth is that we are just beginning to understand the consequences of the loss of control over personal information once it is online and the impact this may have on our lives and the lives of the people around us.

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Author biography

Sandra Garcia-Rivadulla holds a Bachelor's degree in Library and Information Science from Universidad de la República (UdelaR), Uruguay, and a Master's degree on Digital Libraries and Information Services from Universidad Carlos III de Madrid, Spain. She has more than 10 years' work experience in different types of libraries: university, research centers, popular and schools libraries, later joining Willis Towers Watson's Research and Innovation Center. Since 2010 she has been part of the research group Information Literacy and Reading Competences supported by the Program for the Academic Development of Information and Communication (PRODIC), an initiative of the Faculty of Information and Communication (FIC), UdelaR. The group aim is to contribute to the information literacy (infolit) literature as well as develop an infolit model for the Plan Ceibal initiative (OLPC in Uruguay). Her research has focused on information literacy and the social web in relation to libraries. She has presented her work at workshops and conferences. In 2008, she created the first Information Literacy blog in Uruguay and one of the firsts in the region: Alfin en Uruguay http://alfinuruguay.blogspot.com. Her research interests include information literacy, social web, digital libraries and data and information visualization.

Appendix

Box 1. Some resources worth a try – to escape the filter bubble

DuckDuckGo: A search engine that claims not to track you, to get your answers quickly and display fewer ads. https://duckduckgo.com

DeepDyve: Provides affordable access to peer-reviewed journals. http://www.deepdyve.com

OAIster: A union catalog with millions of open access resources, created by The University of Michigan. http://oaister.worldcat.org

QSensei Scholar: A search engine covering 40 million data records on books and scholarly articles from selected databases. http://scholar.qsensei.com

BizNar: A federated search application that searches multiple deep web collections related to business. Developed by Deep Web Technologies. http://biznar.com/biznar

DOAJ: Directory of Open Access Journals. Free, full text, quality controlled scientific and scholarly journals. http://www.doaj.org

CompletePlanet: The deep web directory, covering over 70,000 searchable databases and specialty search engines. http://aip.completeplanet.com

Box 2. Privacy tools

Chat/text messages:
Cryptocat: https://crypto.cat
Omlet: http://www.omlet.me
Pidgin: http://pidgin.im
TextSecure: https://whispersystems.org
Operative systems
TOR: https://www.torproject.org/
TAILS: https://tails.boum.org/download/index.en.html
Other
RedPhone: Secure phone calls. https://whispersystems.org/

OpenPDS: Designed by MIT's Media Lab, OpenPDS sits in between the apps and your data. http://openpds.media.mit.edu/

GPG: A way to encrypt your emails. https://www.gnupg.org/

Ghostery: A compilation of networks and publishers showing which ones track their users' information. https://www.ghostery.com/en/

Box 3. Privacy initiatives

Reset the Net https://www.resetthenet.org/
The Profiling Project http://profiling-project.eu/
Fight for the Future https://www.fightforthefuture.org/
Privacy International https://www.privacyinternational.org/
The 'Web 2.0 Suicide Machine' http://suicidemachine.org/
The Europe versus Facebook project http://europe-v-facebook.org/
Me & My Shadow https://myshadow.org/resources/all
Web We Want https://webwewant.org/

Abstracts

قتطفات

Leadership in disruptive times

دور القيادات في الأوقات المضطربة

James Matarazzo, Toby Pearlstein

جيمس ماتاراتزو، توبي بيرلشتاين

مجلة الإفلا، العدد رقم 42-3،

المُستخلص:

نعيش حاليًا أوقاتًا من الاضطراب الاقتصادي على الصعيد الدولي، والوطني والإقليمي والمحلي، وسيأثر هذا الاضطراب المُستمر حتمًا على مكتباتكم بغض النظر عن نوع المؤسسة التي تدعموها. وتتفاقم عواقب انعدام الاستقرار الاقتصادي المُستمر بحجم الدوران الوظيفي غير الاعتيادي للقيادات المكتبية، ولذلك يتطلب هذا الدوران إمدادات مُنتظمة للقادة الجدد ليحلوا محل من يتقاعدوا عن العمل أو من يضطروا لترك مناصبهم لأسباب أخرى. وتواجه مهنتنا اليوم مسألة وجود أو عدم وجود عدد كافي من القادة الجدد أو المديرين الحاليين ليتقلدوا المناصب القيادية لدفع عجلة الاستدامة لخدمات المعلومات؟ وسُتطرح هذه المسألة بالنظر في أربعة مجالات حيث يوجد حاجة ماسة للقادة الحاليين والمُتطلعين في مجال المعلومات بغض النظر عن نوع المكتبة، وهذه المجالات هي التمويل، وجمع التبرعات، والسياسة التنظيمية، والتقييم.

Approaches and considerations regarding image manipulation in digital collections

المناهج والاعتبارات المُتعلقة بمعالجة الصور في المجموعات الرقمية

David Mindel

ديفيد ميندل

مجلة الإفلا، العدد رقم 42-3،

المُستخلص:

تناقش هذه الدراسة موضوع معالجة الصور في إطار المجموعات الرقمية في المؤسسات الأكاديمية والمؤسسات المعنية بالتراث الثقافي، ولا يُقصد بمفهوم المعالجة هنا التلاعب أو التضليل، بل تلك المعالجة التي تساعد المُستخدمين على الوصول إلى المعلومات الموجودة في مجموعات المواد البصرية. وعلى الرغم من النفع الذي تقصده معالجة المواد الرقمية، فهي تُثير بعض التساؤلات حول الاعتبارات الأخلاقية،

لذا، تُسلط هذه الدراسة الضوء في مناقشتها لموضوع معالجة الصور على المناهج المُشتركة في معالجة الصور والتي قد تكون مُتبعة بالفعل في العديد من المجموعات الرقمية، كما أنها تهدف إلى فتح مجال أوسع للحوار عن توحيد معايير مرحلة ما بعد المعالجة.

A review of theory-driven models of trust in the online health context

عرض لنماذج ثقة تَقُودها الرؤية النظرية في إطار الصحة الإلكترونية

Mahmood Khosrowjerdi

محمود خسروجردى

مجلة الإفلا، العدد رقم 42-3،

المُستخلص:

تُعتبر دراسات السلوك الصحي التي تَقُودها الرؤية النظرية أكثر نجاحًا في إحراز النتائج المرجوة من تلك الأبحاث التي تفتقر إلى المرجعية النظرية. ويهدف هذا البحث إلى إجراء تقييم غير رسمي للأسس النظرية لنماذج الثقة في إطار الصحة الإلكترونية. وبعد النظر في الدراسات السابقة، خُللت بيانات اثنا عشر نموذجًا، ذو رؤية نظرية، تحليلاً تفصيليًا، وأظهرت النتائج أن النماذج السابقة قد استفادت من نظريات عديدة من مختلف التخصصات؛ معظمها من علم النفس، فكان نموذج قبول التقنية technology acceptance model ونموذج بلورة الأرجحية elaboration likelihood model ونظرية الفعل المعقول theory of reasoned action ونموذج القناعات الصحية health belief model أكثر أطر العمل النظرية استخدمًا، وتوصلت النماذج لحساب التباين في المتغير التابع بنسبة تقدر بـ 23-69 بالمئة. وختامًا، على الرغم من أن الدراسات الصحية أصبحت مُنفتحة للغاية على النظريات البيئية، سيساعد اشتمال الأبحاث المستقبلية على النظريات المؤسسية والوطنية الثقافية في إثراء المنظور الفردي الحالي بإطار أوسع من المجتمع، وسُتشكل هذه النظريات معًا سلوك الثقة وأحكام المِصداقية لدى مُتلقي الخدمات الصحية في البيئات الصحية الرقمية.

Generation and management of scholarly content in Nigerian universities

وضع وإدارة المحتوى العلمي في الجامعات النيجيرية

Kabiru Dahiru Abbas

كبيرو داهيرو عباس

مجلة الإفلا، العدد رقم 42-3،

المُستخلص:

يتناول هذا البحث موضوع وضع وإدارة المحتوى العلمي في الجامعات النيجيرية بتطبيق المناهج الكمية والنوعية على عينة إجمالية مؤلفة من مائة وعشرين (120) عضوًا من أعضاء هيئة التدريس من الجامعات الثلاث المُختارة عشوائيًا لهذه الدراسة. توصلت هذه الدراسة إلى أن الغالبية العظمى من الأقسام الأكاديمية ليس لديها مجلات أكاديمية، كما تبين أيضًا أن أيًا من الجامعات أو الأقسام الأكاديمية لديها أرشيفات رقمية للحفاظ والإدارة الفعالة للمحتوى العلمي. وكشفت الدراسة أن التحديات التي تواجه عملية وضع وإدارة المحتوى العلمي تتضمن غياب المستودعات المؤسسية والمواقع الإلكترونية المؤسسية الموثوق بها؛ نظرًا لضعف البنية التحتية.

What makes academic librarians organizationally silent?

ما الذي يجعل أمناء المكتبات الأكاديمية صامتين تنظيميًا؟

Heidar Mokhtari

حيدر مختاري

مجلة الإفلا، العدد رقم 42-3،

المُستخلص:

الغاية: ربما ينعكس الصمت التنظيمي الذي ينتهجه أمناء المكتبات الأكاديمية على الخدمات التي توفرها المكتبات الأكاديمية بشكل سلبي، وتهدف هذه الدراسة للبحث في وضع الصمت التنظيمي بين أمناء المكتبات الأكاديمية والعوامل المؤثرة عليه من وجهة نظرهم.

المنهج/خطة البحث: أُختيرت عينة من 188 أمين مكتبة أكاديمية من شمال إيران عن طريق الاعتيان الملائم

convenience sampling method، وأجابوا على استبيان بعنوان «مقياس الصمت التنظيمي لأمناء المكتبات الأكاديمية»، وحُللت البيانات التي جُمعت باستخدام أساليب الإحصاء الوصفي والاستدلالي.

النتائج: تبين أن مؤشر تعامل إدارة المكتبات مع الصمت التنظيمي هو أقوى مؤشر لسلوك الصمت التنظيمي لأمناء المكتبات الأكاديمية وجاءت نتيجته موجبة، بينما كان لمؤشر للتواصل داخل المكتبات، وهو مؤشر آخر لقياس الصمت التنظيمي للمكتبيين، أثر سلبي على سلوك الصمت التنظيمي لأمناء المكتبات الأكاديمية.

Personalization vs. privacy: an inevitable trade-off?

التخصيص مقابل الخصوصية: هل هو تبادل حتمي؟

Sandra Garcia-Rivadulla

ساندرا غارسيا-ريفادويا

مجلة الإفلا، العدد رقم 42-3،

المُستخلص:

تبحث هذا الدراسة في مسألة الخصوصية والتخصيص الإلكتروني في ضوء الإمكانيات الجديدة التي يوفرها الإنترنت والتكنولوجيات الأخرى المتاحة. وتعمل محركات البحث وشبكات التواصل الاجتماعي بشكل متزايد على ملائمة نتائج البحث والإعلانات وشبكات الاتصال لكل شخص مما يجعل تجربة كل مُستخدم تجربة فردية. ومنذ تسريبات سنودن، أصبح الأشخاص أكثر اهتمامًا بنوعية البيانات التي تجمعها الأطراف الأخرى منهم والغرض منها، ورغم مخاوفهم، مازال يبدو أنهم على استعداد لأن يفصحوا عن خصوصياتهم وبياناتهم لأسباب عملية. وفي العالم الإلكتروني الذي بات أكثر فردية يومًا بعد يوم، وحيث يُمكن تتبّع وحفظ وتحليل واستخدام كل بيانات نشاطنا من قِبل مقدمي الخدمات والحكومات، أين يمكننا وضع الخط الفاصل بين التخصيص والمراقبة وحقوق الأفراد؟

Sommaires

Leadership in disruptive times

[Le leadership en période de crise]

James M. Matarazzo, Toby Pearlstein

IFLA Journal, 42-3, 162-178

Résumé :

Nous traversons une période de crise sur le plan économique, que ce soit au niveau mondial, national, régional ou local. Ces difficultés persistantes vont inévitablement avoir un impact sur votre bibliothèque, quel que soit le type d'organisation à laquelle vous collaborez. Les effets d'une instabilité économique persistante sont accentués par un renouvellement sans précédent au niveau des directions des bibliothèques. Il faut donc de nouveaux dirigeants pour remplacer ceux qui partent à la retraite ou quittent leur poste pour d'autres motifs. Aujourd'hui, notre profession est confrontée à la question de savoir si nous disposons ou non d'un nombre suffisant de leaders nouveaux ou déjà en place, capables d'assumer des fonctions de direction afin d'assurer la continuité des services d'information. Cette question est examinée au regard de quatre domaines – finances, collecte de fonds, politique organisationnelle et évaluation – où il existe un besoin urgent de leaders existants ou potentiels au sein

de la profession des bibliothèques et de l'information, indépendamment du type de bibliothèque.

Approaches and considerations regarding image manipulation in digital collections

[Approches et considérations relatives à la manipulation des images dans les collections numériques]

David Mindel

IFLA Journal, 42-3, 179-188

Résumé :

Cet article traite de la manipulation des images dans le contexte des collections numériques des institutions universitaires et patrimoniales. Cette manipulation n'a pas pour but d'être trompeuse ou mensongère. Au contraire, elle vise à aider les utilisateurs à accéder aux informations qui se trouvent dans les collections de documents visuels. Bien que partant d'une bonne intention, la manipulation des objets numériques suscite cependant quelques considérations d'ordre éthique. Tout en discutant de la manipulation des images, cet article s'intéresse aux méthodes habituelles de manipulation qui sont peut-être déjà utilisées dans de nombreuses collections numériques, et cherche aussi à susciter un débat plus large à propos de la standardisation du post-traitement.

A review of theory-driven models of trust in the online health context

[Examen des modèles de confiance fondés sur la théorie dans le contexte des services de santé en ligne]

Mahmood Khosrowjerdi

IFLA Journal, 42-3, 189-206

Résumé :

Les études fondées sur la théorie du comportement de santé produisent de meilleurs résultats que celles qui n'ont pas de fondements théoriques. Cet article évalue de façon informelle les fondements théoriques de modèles de confiance dans le contexte des services de santé en ligne. Après un passage en revue de la littérature, douze modèles fondés sur la théorie sont analysés en détails. Les résultats montrent que les modèles précédents s'inspiraient de différentes théories au sein de différentes disciplines (principalement du domaine de la psychologie). Les cadres théoriques les plus fréquemment utilisés étaient le modèle d'acceptation de la technologie, le modèle de la probabilité d'élaboration, la théorie de l'action raisonnée et le modèle des croyances relatives à la santé. Les modèles examinés ont permis de constater une variance des variables dépendantes allant de 23 à 69 %. En conclusion, bien que les sciences de la santé soient particulièrement ouvertes aux théories interdisciplinaires, y compris théories culturelles institutionnelles et nationales, des recherches futures peuvent venir compléter la perspective actuelle individualiste dans le cadre d'un contexte social plus large, qui tienne compte aussi bien du comportement de confiance que des jugements de crédibilité des consommateurs de services de santé dans des environnements numériques relatifs à la santé.

Generation and management of scholarly content in Nigerian universities

[Production et gestion d'un contenu savant dans les universités nigérianes]

Kabiru Dahiru Abbas

IFLA Journal, 42-3, 207-219

Résumé :

Cet article étudie la production et la gestion d'un contenu savant dans les universités au Nigeria en utilisant des approches quantitatives et qualitatives; au total cent vingt (120) membres du personnel universitaire des trois universités ont été sélectionnés de façon aléatoire pour cette étude. L'étude permet de constater que la majorité des départements universitaires ne possèdent pas de revue universitaire. Il apparaît que ni les universités, ni les départements universitaires, n'ont d'archives numériques pour conserver et gérer avec efficacité le contenu savant. L'étude révèle les défis qui accompagnent la production et la gestion de contenu, étant donné l'absence de dépôts institutionnels et de sites web institutionnels fiables due à une infrastructure défaillante.

What makes academic librarians organizationally silent?

[Qu'est-ce qui suscite le silence organisationnel des bibliothécaires universitaires ?]

Heidar Mokhtari

IFLA Journal, 42-3, 220-226

Résumé :

Objet : le silence organisationnel des bibliothécaires universitaires a un impact potentiellement négatif sur la prestation de services dans les bibliothèques universitaires. Cette étude a pour but d'examiner le niveau de

silence organisationnel des bibliothécaires universitaires et les facteurs qui suscitent ce silence selon eux.

Méthodologie/Conception : 118 bibliothécaires de bibliothèques universitaires du nord de l'Iran ont été sélectionnés selon la méthode d'échantillonnage de commodité. Ils ont rempli un questionnaire intitulé « Échelle de silence organisationnel des bibliothécaires universitaires ». Les données rassemblées ont été analysées en utilisant des méthodes statistiques descriptives et inductives.

Constatations : influençant de façon positive le silence organisationnel des bibliothécaires universitaires, l'attitude des directions des bibliothèques à cet égard était le meilleur indicateur de ce silence de la part des bibliothécaires. Influençant de façon négative leur comportement de silence organisationnel, l'existence de possibilités de communication au sein de la bibliothèque était un autre indicateur du silence organisationnel des bibliothécaires.

Personalization vs. privacy: an inevitable trade-off?

[Personnalisation ou confidentialité : un compromis inévitable ?]

Sandra Garcia-Rivadulla

IFLA Journal, 42-3, 227-238

Résumé :

Cet article s'intéresse au problème de la confidentialité et de la personnalisation en ligne, à la lumière des nouvelles possibilités offertes par Internet et autres technologies disponibles. Moteurs de recherche et réseaux sociaux personnalisent de plus en plus nos résultats de recherche, les publicités qui nous sont proposées et nos réseaux de contact, rendant unique l'expérience de chaque utilisateur. Depuis les révélations de Snowden, les gens s'intéressent bien plus au type de données rassemblées par des tierces parties à leur sujet, et à pourquoi elles le font. Bien qu'inquiets, les membres du public semblent toujours disposés à échanger leur confidentialité et leurs données à des fins pratiques. Dans un monde connecté qui devient chaque jour de plus en plus personnalisé, dans lequel toutes nos activités peuvent être suivies à la trace, sauvegardées, analysées et utilisées par des prestataires et des gouvernements, où se situe la limite entre personnalisation, surveillance et droits de l'homme ?

Zusammenfassungen

Leadership in disruptive times

Führungsverhalten in widrigen Zeiten

James M. Matarazzo, Toby Pearlstein

IFLA Journal, 42-3, 162-178

Abstrakt: Die heutige Zeit wird durch wirtschaftliche Probleme auf regionaler, nationaler und globaler Ebene geprägt. Es ist unvermeidlich, dass sich diese anhaltende Krisensituation auf Ihre Bibliothek auswirkt, ganz gleich, was für eine Organisation Sie unterstützen. Die Folgen dieser andauernden wirtschaftlichen Unsicherheit werden dadurch verstärkt, was ein nie dagewesener Wandel bei der Führungsrolle von Bibliotheken zu sein scheint. Dieser Wandel macht es unabdinglich, dass ständig neue Führungskräfte nachrücken, um in die Fußspuren derjenigen zu treten, die pensioniert werden oder ihre Tätigkeit aus anderen Gründen aufgeben. Unsere Branche sieht sich heute mit der Frage konfrontiert, ob sich genügend neue Führungskräfte finden lassen oder die derzeitigen Manager eine Führungsrolle übernehmen, um auch in Zukunft das Angebot an Informationsdiensten zu gewährleisten. Eine Antwort auf diese Frage soll durch die Prüfung der vier Bereiche gefunden werden, in denen - ganz ungeachtet der Art der Bibliothek - der Bedarf an bestehenden und künftigen Führungskräften im Informationsbereich ein kritischer Faktor ist. Finanzen, Fundraising, Organisationspolitik und Auswertung.

Approaches and considerations regarding image manipulation in digital collections

Ansätze und Aspekte bei der Bildbearbeitung in digitalen Kollektionen

David Mindel

IFLA Journal, 42-3, 179-188

Abstrakt: Dieser Artikel erläutert die Bildbearbeitung im Rahmen digitaler Kollektionen in Universitäten und Einrichtungen für das Kulturerbe. Diese Formen der Bearbeitung sollen nicht einer Irreführung oder Täuschung dienen, denn stattdessen helfen sie Benutzern, auf die in den Kollektionen mit Bildmaterial

vorhandenen Informationen zuzugreifen. Trotz aller guten Absichten wirft die Bearbeitung digitaler Objekte dennoch einige ethische Fragen auf. In der Diskussion über die Bildbearbeitung beschreibt dieser Artikel einige übliche Vorgehensweisen bei der Bildbearbeitung, die in vielen digitalen Kollektionen oft schon üblich sind, aber er soll auch dazu dienen, eine umfassendere Debatte über Standards für die Nachbearbeitung anstoßen.

A review of theory-driven models of trust in the online health context

Eine Besprechung der theoriegeleiteten Vertrauensmodelle in der Online-Welt der Gesundheit

Mahmood Khosrowjerdi

Abstrakt:

Bei theoriegeleiteten Studien über das Gesundheitsverhalten gelingt es besser, ein gewünschtes Ergebnis zu erreichen, als es bei solchen ohne theoretische Basis der Fall ist. Dieses Papier zielt darauf ab, eine informelle Einschätzung über die theoretischen Grundlagen von Vertrauensmodellen in der Online-Welt der Gesundheit zu bieten. Nach einem Einblick in die einschlägige Fachliteratur werden zwölf theoriegeleitete Modelle im Einzelnen analysiert. Die Ergebnisse zeigen, dass die vorherigen Modelle von unterschiedlichen Theorien in verschiedenen Bereichen (vor allem in der Psychologie) profitierten. Das Technologie-Akzeptanz-Modell, das Ausarbeitungs-Wahrscheinlichkeits-Modell, die Theorie des überlegten Handelns und das Gesundheits-Glaubens-Modell bildeten die am häufigsten genutzten Rahmen. Die überarbeiteten Modelle betrugen 23 - 69 Prozent bei den Abweichungen der abhängigen Variablen. Zusammenfassend lässt sich sagen, dass, obwohl die Gesundheitswissenschaften interdisziplinären Theorien einschließlich der institutionellen und national-kulturellen Theorien aufgeschlossen gegenüber stehen, die künftige Forschung den derzeitigen individualistischen Blickwinkel durch einen weiter gefassten sozialen Kontext verstärken könnte, bei dem sowohl das Vertrauensverhalten als auch die die glaubwürdigen Einschätzungen der Nutzer des Gesundheitsangebots in einer digitalen Umgebung berücksichtigt werden.

Generation and management of scholarly content in Nigerian universities

Erarbeitung und Management akademischer Inhalte an nigerianischen Universitäten

Kabiru Dahiru Abbas

Abstrakt:

Das Papier untersucht mit Zuhilfenahme quantitativer und qualitativer Ansätze die Erarbeitung und das Management akademischer Inhalt an Universitäten in Nigeria. Dafür wurden insgesamt mehr als hundertzwanzig (120) willkürlich für die Studie ausgewählte akademische Mitarbeiter/-innen von drei Universitäten befragt. Bei der Studie stellte sich heraus, dass die meisten Fachbereiche keine wissenschaftlichen Zeitschriften hatten. Es wurde festgestellt, dass weder die Universitäten noch die Fachbereiche über digitale Archive für eine effektive Aufbewahrung und Verwaltung wissenschaftlicher Texte verfügten. Die Studie zeigte die Herausforderungen auf, vor denen die wissenschaftliche Generation und das Management stehen, mit dem Fehlen institutioneller Repositorien und verlässlicher institutioneller Websites aufgrund einer schlechten Infrastruktur umzugehen.

What makes academic librarians organizationally silent?

Warum sind wissenschaftliche Bibliothekare organisatorisch kaum zu hören?

Heidar Mokhtari

Abstrakt:

Zweck: Das Schweigen der wissenschaftlichen Bibliothekare könnte das Serviceangebot in wissenschaftlichen Bibliotheken beeinträchtigen. In der Studie soll der Status der organisatorischen Stille unter wissenschaftlichen Bibliothekaren und deren Auswirkungen, wie diese von ihnen wahrgenommen werden, untersucht werden.

Methodologie/Aufbau: 118 willkürlich ausgewählte wissenschaftliche Bibliothekare aus Universitätsbibliotheken im Norden des Irans wurden dafür befragt. Sie füllten einen Fragebogen mit der Bezeichnung „Die organisatorische Skala der Stille bei wissenschaftlichen Bibliothekaren" aus. Die gesammelten Daten wurden anhand deskriptiver und interferentieller statistischer Methoden analysiert

Ergebnisse: Mit einem positiven Effekt für das organisatorische Schweigen wissenschaftlicher Bibliotheken war die Haltung des Managements von Bibliotheken der deutlichste Faktor, um das organisatorische Schweigen von Bibliothekaren vorherzusagen. Als negativer Einflussfaktor für die Stille der Organisation stellte sich

das Vorhandensein von Kommunikationsmöglichkeiten in der Bibliothek als Indiz für dieses Schweigen heraus.

Personalization vs. privacy: an inevitable trade-off?

Personalisierung versus Datenschutz: ein unvermeidlicher Kompromiss

Sandra Garcia-Rivadulla

IFLA Journal, 42-3, 227-238

Abstrakt:

Der Artikel beschäftigt sich vor dem Hintergrund der neuen Möglichkeiten, die das Internet und andere verfügbare Technologien bieten, mit der Frage des Datenschutzes und der Personalisierung online. Suchmaschinen und soziale Netzwerke bestimmen unsere Suchergebnisse, Anzeigen und Kontaktnetzwerke immer stärker, sodass das Benutzererlebnis immer individuell wird. Seit den Veröffentlichungen von Snowden interessieren sich Menschen verstärkt dafür, welche Daten Dritte über sie aus welchen Gründen zusammentragen. Trotz ihrer Sorgen scheinen Menschen auch weiterhin bereit zu sein, ihre Privatsphäre und den Datenschutz für einen gewissen Komfort aufzugeben. In einer Online-Welt, die jeden Tag persönlichere Züge bekommt, und in der all unsere Aktivitäten von Anbietern und vom Staat verfolgt, gespeichert, analysiert und verwendet werden können, stellt sich die Frage, wo die Grenze zwischen Personalisierung, Überwachungsstaat und Menschenrechten gezogen werden soll.

Рефераты статеИ

Leadership in disruptive times

Лидерство в период дестабилизации

Джеймс М. Матараццо, Тоби Пеарлстейн

IFLA Journal, 42-3, 162-178

Аннотация:

Наступило время экономической дестабилизации в глобальном, национальном, региональном и локальном масштабах. Текущая нестабильность неизбежно скажется на вашей библиотеке, независимо от того, с организацией какого типа вы взаимодействуете. Последствия продолжающихся экономических колебаний усугубляются текучестью руководящих кадров библиотек, которая, кажется, приобрела необычайные масштабы. Вследствие такой текучки существует необходимость в постоянном притоке новых лидеров, способных примерить на себя роль тех, кто уходит на пенсию или по иным причинам оставляет свои должности. Сегодня люди нашей профессии столкнулись с вопросом о том, будет ли у нас достаточно новых лидеров, либо действующих руководителей, готовых выступить в роли лидеров, для того, чтобы способствовать стабильному развитию информационных услуг. В поиске ответа на данный вопрос будут рассмотрены четыре области нашей деятельности, в которых потребность в существующих и амбициозных лидерах в области профессиональной деятельности, связанной с информацией, имеет определяющее значение, независимо от типа библиотеки: Финансы, Привлечение денежных средств, Организационная политика и Оценка.

Approaches and considerations regarding image manipulation in digital collections

Подходы и факторы, которые необходимо учитывать при обработке изображений в цифровых коллекциях

Дэвид Миндел

IFLA Journal, 42-3, 179-188

Аннотация:

В статье рассматривается тема обработки изображений в контексте цифровых коллекций в учебных заведениях и учреждениях по сохранению культурного наследия. Целью такой обработки не является введение в заблуждение или дезинформирование. Напротив, она помогает пользователю в получении доступа к информации, содержащейся в коллекциях наглядных материалов. Но невзирая на благие намерения, при обработке цифровых объектов все же следует учитывать некоторые этические факторы. В ходе обсуждения темы обработки изображений в настоящей статье подчеркиваются общие подходы к обработке изображений, которые, вероятно, уже используются во многих цифровых коллекциях, и цель данной работы заключается в том, чтобы дать толчок началу более масштабного обсуждения стандартизации в постобработк.

A review of theory-driven models of trust in the online health context

Обзор основанных на теоретической базе моделей доверия в отношении товаров и услуг в сфере здравоохранения в онлайн-контексте

Махмуд Хосровьерди

Аннотация:

Исследования в области поведения в отношении здоровья, основанные на теоретическом материале, чаще приводят к желаемым результатам, чем исследования, не имеющие теоретической базы. Целью данной работы является неформальная оценка теоретической базы моделей доверия в контексте интерактивной картины поведения в отношении здоровья. После обзора литературы был выполнен подробный анализ двенадцати моделей, основанных на теоретическом материале. Результаты показали, что в предыдущих моделях успешно использовались материалы различных теорий в рамках разных дисциплин (преимущественно из психологии). Наиболее часто используемыми шаблонами из области теоретических знаний были: модель принятия технологии, модель наиболее вероятного пути обработки сообщения, теория аргументированного действия, а также модель восприятия вопросов, связанных со здоровьем. Рассмотренные модели позволили объяснить 23-69 процентов расхождений в зависимых переменных. В заключение, несмотря на то, что медико-санитарные области науки чрезвычайно открыты для междисциплинарных теорий, включая коллективные и национальные теории в сфере культуры, последующее исследование может расширить текущую индивидуалистическую перспективу более широким социальным контекстом, затрагивающим как доверительное поведение, так и оценку степени надежности с точки зрения потребителей товаров и услуг в области здравоохранения в соответствующей цифровой среде.

Generation and management of scholarly content in Nigerian universities

Формирование учебного материала и управление им в университетах Нигерии

Кабиру Дахиру Аббас

Аннотация:
В данной работе рассматривается процесс формирования учебного материала и управления им в университетах Нигерии с использованием количественного и качественного методов оценки, для чего в рамках исследования в случайном порядке были выбраны 120 (сто двадцать) сотрудников из научно-педагогического состава. Исследование показало, что у большинства кафедр учебных заведений нет научных журналов. Также выяснилось, что ни университеты, ни кафедры не имеют цифровых архивов для эффективного хранения учебного материала и управления им. Исследование показало, что к требующим решения проблемам относятся отсутствие информационных хранилищ для учебных заведений, а также надежных интернет-сайтов учебных заведений, что объясняется недостаточно развитой инфраструктурой.

What makes academic librarians organizationally silent?

Что заставляет библиотекарей учебных заведений коллективно молчать?

Хейдар Мохтари

Аннотация:

Цель: Коллективное молчание библиотекарей учебных заведений потенциально оказывает отрицательное воздействие на качество предоставления услуг в библиотеках учебных заведений. Целью настоящей работы было изучение состояния коллективного молчания среди библиотекарей учебных заведений, а также факторов, которые с точки зрения самих библиотекарей оказывают влияние на ситуацию.

Методология/Модель: Методом нерепрезентативной выборки были отобраны 118 библиотекарей учебных заведений северного Ирана. Они заполнили анкету, озаглавленную "Шкала коллективного молчания библиотекарей учебных заведений". Собранные сведения были проанализированы с использованием описательного статистического метода, а также метода логического выведения.

Результаты: Фактором, оказывающим положительное воздействие на явление коллективного молчания библиотекарей учебных заведений, оказалось отношение руководства библиотек к молчанию. Фактором, оказывающим отрицательное воздействие на их коллективное молчание, оказалось наличие в библиотеке возможности общаться.

Personalization vs. privacy: an inevitable trade-off?

Индивидуализация в обмен на личную информацию: неизбежный компромисс?

Сандра Гарсиа-Ривадулла

IFLA Journal, 42-3, 227-238

Аннотация:

В данной статье рассматривается вопрос сохранения личной информации и персональных данных в электронной среде в свете новых возможностей, которые предоставляются сетью Интернет, а также иными доступными сейчас технологиями. Поисковые системы и социальные сети все активнее подстраивают под нас результаты поиска, рекламу и контактные сети, что делает опыт каждого отдельного пользователя неповторимым. Со времени разоблачений, сделанных Сноуденом, в обществе растет интерес к тому, сбор каких именно сведений о нас осуществляют третьи стороны, и для чего это делается. Несмотря на свою обеспокоенность, люди, кажется, все еще готовы делиться своими личными данными и информацией в обмен на удобство. В мире сетевых технологий, который день ото дня становится все более персонифицированным, когда любое наше действие может быть отслежено, сохранено, проанализировано и использовано провайдерами и правительственными органами, где же мы проводим черту между индивидуализацией и наблюдением, и правами человека?

Resúmenes

Leadership in disruptive times

Liderazgo en tiempos perturbadores

James M. Matarazzo, Toby Pearlstein

IFLA Journal, 42-3, 162-178

Resumen:

Estos son tiempos de perturbaciones económicas mundiales, nacionales, regionales y locales. Esta turbulencia que estamos presenciando afectará inevitablemente a su biblioteca, independientemente del tipo de organización al que preste apoyo. Las consecuencias de la inestabilidad económica actual se exacerban en lo que parece ser una pérdida extraordinaria de liderazgo en las bibliotecas. Esta pérdida requiere un suministro constante de nuevos líderes que asuman el papel de los que se jubilan o abandonan sus puestos por otros motivos. En la actualidad, nuestra profesión se enfrenta a la pregunta de si dispondremos o no de nuevos líderes, o de directivos actuales que asuman los puestos de liderazgo, para impulsar la sostenibilidad de los servicios de información. Esta cuestión se abordará a través del análisis de cuatro dominios en los que la necesidad de líderes, actuales o en ciernes, en la profesión de la información es fundamental, independientemente del tipo de biblioteca: finanzas, captación de fondos, políticas organizativas y evaluación.

Approaches and considerations regarding image manipulation in digital collections

Métodos y consideraciones relativos a la manipulación de imágenes en colecciones digitales

David Mindel

IFLA Journal, 42-3, 179-188

Resumen:

Este artículo trata sobre la manipulación de imágenes en el contexto de las colecciones digitales de instituciones académicas y de patrimonio cultural. Estas manipulaciones no están destinadas a engañar ni a falsear sino que, por el contrario, su objetivo es ayudar a los usuarios a acceder a la información presente en las colecciones de material visual. A pesar de su buena intención, la manipulación de objetos digitales merece algunas consideraciones éticas. En su exposición sobre la manipulación de las imágenes, este artículo resalta los métodos habituales de manipulación, que pueden estar ya presentes en multitud de colecciones digitales, y su objetivo es iniciar un mayor debate sobre la estandarización del post-procesamiento de la imagen.

A review of theory-driven models of trust in the online health context

Un análisis de los modelos de confianza basados en la teoría en el contexto de la salud online

Mahmood Khosrowjerdi

IFLA Journal, 42-3, 189-206

Resumen:

Los estudios sobre comportamiento de salud basados en la teoría tienen un mayor éxito a la hora de lograr el resultado deseado que aquellos que ignoran las bases teóricas. El objetivo de este documento es ofrecer una evaluación informal de las bases teóricas de los modelos de confianza en el contexto de la salud online. Después de revisar la documentación se llevó a cabo un análisis detallado de doce modelos basados en la teoría. Los resultados demostraron que los modelos

anteriores se beneficiaban de diferentes teorías encuadradas en distintas disciplinas (principalmente en la psicología). El modelo de aceptación tecnológica, el modelo de probabilidad de elaboración, la teoría de la acción razonada y el modelo de creencias de salud fueron los marcos teóricos que se utilizaron con mayor frecuencia. Los modelos revisados contabilizaron el 23-69 por ciento de la varianza de las variables dependientes. En conclusión, aunque las ciencias de la salud son muy permeables a las teorías interdisciplinares, incluyendo las teorías culturales institucionales y nacionales, las futuras investigaciones enriquecerán la perspectiva individualista actual dentro de un contexto social más amplio que trate tanto la conducta de confianza como las opiniones de credibilidad de los consumidores de sanidad en entornos de salud digitales.

Generation and management of scholarly content in Nigerian universities

Generación y administración de contenidos académicos en universidades nigerianas

Kabiru Dahiru Abbas

Resumen:
El documento investiga, utilizando métodos cuantitativos y cualitativos, la generación y la administración de contenidos académicos en universidades de Nigeria. En él participaron un total de ciento veinte (120) empleados de tres universidades seleccionadas aleatoriamente para el estudio. La investigación puso de manifiesto que la mayoría de los departamentos académicos carecen de publicaciones académicas. Se descubrió que ni las universidades ni los departamentos académicos cuentan con archivos digitales para la conservación y la administración efectivas de los contenidos académicos. El estudio reveló los retos a los que se enfrentan la generación y la administración de contenidos académicos entre los que se incluye la ausencia de repositorios institucionales y de sitios webs institucionales fiables debido a las deficiencias de su infraestructura.

What makes academic librarians organizationally silent?

¿Qué genera el silencio organizativo de los bibliotecarios académicos?

Heidar Mokhtari

Resumen:

Finalidad: El silencio organizativo de los bibliotecarios académicos afecta negativamente a la prestación de servicio en las bibliotecas académicas. El objetivo de este estudio fue investigar el estado del silencio organizativo entre bibliotecarios académicos y los factores que le afectan según ellos mismos lo perciben.

Metodología/Diseño: Se seleccionaron 118 bibliotecarios académicos de bibliotecas situadas al norte de Irán mediante el método de muestreo por conveniencia. Respondieron a un cuestionario denominado "Escala de silencio organizativo de los bibliotecarios académicos". Los datos recogidos se analizaron utilizando métodos estadísticos descriptivos e inferenciales.

Conclusiones: Con efecto positivo en la conducta del silencio organizativo de los bibliotecarios académicos, la actitud de las direcciones de las bibliotecas con relación al silencio fue el indicador más remarcado del silencio organizativo de los bibliotecarios. Con efecto negativo para su conducta del silencio organizativo, la existencia de oportunidades de comunicación en la biblioteca fue otro indicador del silencio organizativo de los bibliotecarios.

Personalization vs. privacy: an inevitable trade-off?

Personalización vs. privacidad: ¿una contrapartida inevitable?

Sandra Garcia-Rivadulla

Resumen:

Este artículo aborda el problema de la privacidad y la personalización online a la luz de las nuevas posibilidades que ofrecen Internet y las otras tecnologías de las que disponemos. Los motores de búsqueda y las redes sociales personalizan cada día más los resultados de nuestras búsquedas, anuncios y redes de contactos, lo que permite proporcionar una experiencia única a cada usuario. A partir de las revelaciones de Snowden, la gente ha adquirido un mayor interés por conocer qué tipo de datos relativos a nosotros mismos recogen terceros y por qué motivos. A pesar de su preocupación, la gente aún parece dispuesta a cambiar su privacidad y sus datos por conveniencia. En un mundo en línea que se personaliza día a día, donde proveedores y gobiernos pueden rastrear, almacenar, analizar y utilizar todas nuestras actividades, ¿dónde trazamos la línea entre la personalización, la vigilancia y los derechos de las personas?