

Metamorphosis of the Information Professional

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Abstract

The role of information professionals in leveraging technology for innovation within their organization as well as in the larger information community and industry is undergoing a metamorphosis. The information content and technology industry continues to change at warp speed. The roles of the information user and the information professional are morphing into new identities to keep pace with developments in the information industry. What lessons were learned from past technology transitions that can be applied to future shifts? How will current trends impact the roles of all participants in the information marketplace? Which core skills of information professionals will enable them to not only successfully ride the waves of change but to steer the direction of technological transformations?

The four building blocks of Future Ready will be explored in the context of leveraging technology for innovation. **Collaborative** techniques can accelerate the deployment, acceptance and incorporation of information tools into the workflows of an organization. **Adaptability** and resiliency are cornerstones of an information professional's skill set to position themselves and their organizations to take full advantage of emerging information solutions. **Alignment** with the values and culture of the organization within which an information professional operates is essential to achieving short-term goals and long-term viability. **Connecting** all stakeholders within an organization as well as those key players in the larger

information community and industry through mutually beneficial alliances will mitigate risk and maximize potential for success.

Information professionals must prepare themselves and their organizations to collaborate, adapt, align and connect to be ready for the future.

This paper will include examples of how information professionals are applying the tenets of Future Ready to change their roles to ensure professional growth and benefit the organizations they serve.

Introduction

The rate of change in the information content and services industry seems to accelerate with each passing day. New products emerge, industry players consolidate, new players appear on the scene and information users find novel ways to incorporate content into their work processes or daily lives. The role of information professionals continues to be transformed to keep pace with these changes and leverage the power of information through technology innovations to deliver value to their organizations.

Metamorphosis, in a biological sense, is a profound change in form from one stage to the next in the life history of an organism. (Dictionary.com 2011) Metamorphosis also implies a complete change in form, appearance, substance, character or structure. Throughout history, the role of information professionals has changed in response to changes in their institutional environment, format of content or media, user expectations or requirements, technology solutions and other factors (Gharst 2010). From the ancient libraries of Alexandria, to the exclusive collections of the rich, to public libraries founded by Andrew Carnegie, to digital libraries of today, change and transformation have occurred and will continue to occur. At each stage in the evolution of content and collections, the role of information professionals has morphed to remain relevant to user needs, align with organizational goals and become viable for the next stage of evolution.

Leveraging Technology for Innovation

Emerging technologies can cause disruptions as well as offer new opportunities. Those who remember 8-track cartridges, Betamax videocassettes or microcards will endorse the necessity of industry-wide accepted standards to ensure compatibility, interoperability, and long-term accessibility. Part of the value information professionals can provide is helping to separate the wheat from the chaff, determining which technologies offer real and lasting improvements. As knowledgeable and future ready thinkers, information professionals can help organizations learn from the past to avoid similar mistakes in the future.

Ubiquitous access to information is an opportunity for users that is provided by mobile devices, but may also pose a threat to information professionals who become invisible on the smart phones of their client base (Boone 2011) as these devices become the preferred access mode to information on the Internet and in institutional repositories. Information providers permeate the content space with applications that facilitate access, local storage on users' devices and functionality to embed information into the users' workflows. The potential threat to information professionals occurs when information providers short-circuit the relationship between users and the information source, thereby causing the information professional to disappear from the user's view. In fact, information professionals need to raise their visibility, for example, by leveraging social media applications to reach out to their users, to guide users through the myriad of content providers, and also collaborate with information providers to customize their applications to direct users to the library's technical support staff and remind users of the library's funding for the content being provided.

Not all technological advances are disruptive. Even as mobile technology poses some threat to libraries, it also opens up new opportunities for libraries to provide improved service environments and totally new services. By making the library's service environment more mobile, information professionals enable users to search the library catalog, obtain information from research databases, download ebooks and journal articles, verify library hours, check out or renew library

materials, pay fines, chat with a reference librarian, and access services that have not yet even been imagined. As any technology develops and is adopted, it progresses through the Hype Cycle, developed and publicized by Gartner, Inc. (Gartner, Inc. 2011) from the technology trigger, over the peak of inflated expectations, down into the trough of disillusionment, regaining ground on the slope of enlightenment and finally reaching the plateau of productivity. Information professionals should be cognizant of the characteristics of each stage and how these factors impact users' adoption of new technologies during each stage. Furthermore, information professionals need to develop and apply success metrics for each stage to evaluate the performance of library mobile applications (Washburn 2011) and ensure that these applications meet user needs. New roles are envisioned by researchers for information professionals who acquire programming skills to foster the development of open application programming interfaces (APIs) for search and discovery of scientific information (Special Libraries Association 2010).

One technique that can mitigate the risk of new technologies and increase the probability of a successful implementation is employing pilot projects to test product features, functionality and user acceptance prior to a full deployment. The Digital Engineering Library at Stanford University opened in August 2009, after four years of planning, and defined itself as a place for innovation and experimentation (Josephine 2011). One of its initial experiments is with e-readers, both tethered and circulating units, to understand the information needs of current and future students.

New challenges await information professionals as the generation called the "Digital Natives" enters the workforce (Law 2009). Rather than agonizing over the intergenerational discrepancies with a user population (and future professional colleagues) who have grown up with technology devices providing their preferred access to information, information professionals must develop their roles in building and curating digitally created collections, adding value to content, training users on information fluency, and advising organizations on information policies and standards.

Four Building Blocks of Future Ready

COLLABORATION

Collaborative techniques can accelerate the deployment, acceptance and incorporation of information tools into the workflows of an organization. Many knowledge-intensive organizations adopt a collaborative work culture to facilitate sharing of expertise. Information professionals can connect through their organizations' Best Practices and Lessons Learned forums to engage the expertise and perspectives of client groups to which they want to deploy information tools. Other social media platforms can enable information professionals to tap internal as well as external experts. Christy Confetti Higgins embedded information resources into the corporate social media sites at Sun Microsystems, now part of Oracle, (Higgins 2011) to connect with her internal customers, engage them in conversations around information and ultimately deliver value to the company. Another way to promote information tools to specific groups of users within an organization is to get involved in project teams or work groups either as a fully engaged or an ad hoc member (Salonen 2011). Sometimes information professionals can take advantage of work space proximity to a key customer group to diplomatically insert themselves into work discussions and suggest information solutions to problems the users encounter on a project (Miller 2011).

Such on-going collaborations, whether they are formal or informal, sometimes result in the information professional becoming embedded in the work group of a key client. An SLA 2007 Research Grant funded a study of embedded librarians to identify success factors for embedded service models and requirements for initiating and sustaining these programs (Shumaker and Talley 2010). Attributes of successful instances of embedded librarianship were found to be:

1. frequent person-to-person marketing and promotion techniques,
2. evaluation of services using financial outcomes and metrics,
3. provision of value-added services that involve judgment and expert analysis, and
4. strong engagement between the management of the librarian/information services group and the customer group.

In 2007 Mitre Corporation's Information Services Department created research clusters as part of their new operational model to support corporate objectives of

collaboration and knowledge sharing (Trimble 2010). Experiences of a research/competitive intelligence analyst who became embedded in a Brand Communication Unit due to a re-organization at her company revealed that she could create new value and leverage the complementary skill sets of her partners to perform strategically important roles (Heinze 2010).

Collaboration with other information professionals and information industry experts extends beyond the confines of the organization. Successful information professionals have found that active participation in a variety of associations has expanded their knowledge, helped them to gain expertise in new areas, provided answers to immediate questions, yielded advice for solving longer term problems, and incorporated sustainability into their career plans. In the past, these interactions occurred as person-to-person engagements or used a minimum of technology tools (telephone, facsimile, electronic mail). Today, technology has opened up a wide range of options for engaging with the information professional's collegial universe through discussion lists, teleconferencing, distance learning, mobile devices, and social media (blogs, wikis, as well as LinkedIn[®], Facebook[®], Twitter[®] to name just a few). These technologies bridge the former barriers of time and space, while introducing new challenges of equipment compatibility, techno-savvy gaps, differentiating between work and personal time, sensitivity to cultural norms, and time management issues. In some organizations, professional collaboration and reputation are key factors for hiring decisions and performance measurements affecting achievement of tenure (in the academic environment) and career advancement.

Continuous learning is closely coupled with professional involvement. Employer expectations have shifted toward individuals being responsible for self-directed career planning and learning objectives. These precepts are incorporated into SLA's "Competencies for Information Professionals of the 21st Century" (Special Libraries Association 2003). "SLA's 23 Things" (Special Libraries Association 2010) and "SLA Innovation Laboratory" (Special Libraries Association 2009) are tools for information professionals to explore, experiment, learn and apply new technologies to stay current and relevant in the fast-paced swirl of technological innovation.

ADAPTABILITY AND RESILIENCY

Since technology by its nature, results in change, adaptability and resiliency are cornerstones of information professionals' skill set to position themselves and their organizations to take full advantage of emerging information solutions. Sustainability requires having options and pursuing those options when appropriate. Early warning signals, tactics and strategic decisions are discussed in "Corporate Librarian's Survival Kit for Organizational Realignment" (Ryder 2011), based on the experiences of corporate information professionals who have experienced the full spectrum of organizational changes during the past decade. Key success factors from these interviews were:

- Organizational positioning – being in the “right” place within the organization at the “right” time
- Strategic intent – running the information management function like a business
- Service portfolio – aligned to the goals and mission of the organization
- Marketing acumen – marketing to the decision-makers not just the internal clients
- Financial savvy – every business decision is based on financial impact
- Value measurement – expressed as business value to the organization
- Innovation – being known as a thought leader in information management

Paul Jackson (Jackson 2011) reinforced the need to be flexible, inquisitive, mentor others, a problem-solver and contribute solutions to the organization in order to be resilient throughout one's career.

One technique to become adaptable and resilient is to practice scenario planning when thinking about the future (Matarazzo and Pearlstein 2009). The Association of College and Research Libraries (ACRL) released a report, *Futures Thinking for Academic Librarians: Higher Education in 2025*, (Association of College and Research Libraries 2010) to prompt academic librarians to consider what trends may impact the future of higher education in order to take strategic action regarding the affect of these trends on academic libraries.

ALIGNMENT

Alignment with the values and culture of the organization within which an information professional operates is essential to achieving short-term goals and long-term viability.

Demonstrating the value of the information professional and the library to the overall institution, community that is served, or funding source has become a requirement for all types of information professional. Initially this phenomenon was evidenced solely in the corporate segment, with that sector's focus on monetary values. The drive towards measuring value in corporate libraries surfaced during the 1990s and accelerated more rapidly as corporations faced pressures on their profitability. A newly published book, *Best Practices for Corporate Libraries*, (Kelsey and Porter (Editors) 2011) contains several chapters that focus on measuring the value proposition in corporate libraries. The chapter "Measuring Value in Corporate Libraries" (Ryder 2011) provides an overview of various techniques for measuring value, illustrated with sample metrics and graphs that are aligned to particular corporate goals. An in-depth accounting (He, Chaudhuri and Juterbock 2011) of efforts at Novartis Knowledge Center (NKC) through their initiative called Value Assessment Library Use Efficiency (VALUE) demonstrates how the NKC supports decision-making at Novartis using quantitative measures to calculate their market value as well as Return on Investment.

As the U.S. and global economies have struggled in the past decade, this drive to prove value has spread throughout the library world. The Association of College and Research Libraries (ACRL) released a study, *The Value of Academic Libraries: A Comprehensive Research Review and Report* (Association of College and Research Libraries 2010) which explores this topic in the academic library context. Academic librarians are developing metrics and assessment tools that align the results achieved by their academic libraries with the mission and goals of their institutions. They are acquiring skills in applying concepts like Return on Investment (or Return on Value) and cost-benefit to the measurable goals of their institution such as student graduation rates, job placement success, faculty recruitment and retention, faculty teaching, faculty grant proposals and faculty research productivity. One of the themes discussed at the 2011 ACRL Conference in Philadelphia, PA (March 30 – April 2, 2011) was this need to align academic libraries with the institutional outcomes of their respective colleges and universities.

Public libraries have certainly been negatively impacted by the budget reductions of their funding sources. In 2009 the Free Library of Philadelphia faced the dire prospect of closing all 54 libraries and the shutdown of all services. An “eleventh hour” passage of legislation in the Pennsylvania Senate rescued the library and other services funded by the City of Philadelphia budget. In 2010 the University of Pennsylvania’s Fels Institute of Government conducted an economic impact study of the Free Library of Philadelphia (Diamond, Gillen and Litman 2010) that quantified more than \$30 million worth of economic value to the city. Almost \$4 million of direct business development value was generated through the creation of new businesses in Philadelphia that could not have been started, sustained or grown without the resources that the study respondents acquired at the Free Library of Philadelphia. About 1,000 respondents stated that they had found jobs as a result of using library resources, staffing and facilities, pumping \$30.4 million in salaries into the local economy and \$1.2 million in wage tax revenue into local government. The results of this study reinforced the FY2012 Budget testimony presented by the library president and director to the City Council by demonstrating the value of the public library in economic terms that resonated with government officials.

Similar trends are emerging in government libraries and information agencies as the FY2011 budget negotiations foretell of decreased funding and increased requirements to demonstrate value that aligns with the political agenda of the budget approvers. Many information professionals will remember the shutting down of Environmental Protection Agency libraries in 2006 – 2008 during a similar budget crisis and their resurrection in 2009 (Matarazzo and Pearlstein 2009). One lesson learned from that experience is the absolute necessity of measuring and communicating the value of information in terms that are meaningful to the mission and goals of the organization supported by the library.

CONNECTING ALL STAKEHOLDERS

Connecting all stakeholders within an organization as well as those key players in the larger information community and industry through mutually beneficial alliances will mitigate risk and maximize potential for success. Various

techniques and examples of connecting stakeholders in a joint effort to accomplish a specific task or goal are explored in “Collaboration in Corporate Libraries” (Pachat and Manjula 2011):

- Knowledge management
- Content management
- Web 2.0 and Library 2.0 offerings
- Knowledge-sharing forums

Collaboration with external stakeholders also occurs between information professionals and information industry players. Library Advisory Boards play an important role in providing valuable feedback to information providers for new product development, pricing models, and licensing requirements as well as building working relationships between buyer and seller in the marketplace (Kluiters and Hires 2011).

The phenomenon of the unconference has evolved as another way of connecting individuals with a common interest and harnessing the collective body of knowledge possessed by the participants. Unlike a conference, an unconference is participant-driven with respect to topics discussed, location and scheduling. The unconference first appeared in the high tech community and has spread to other areas of expertise. The SLA Unconference wiki (Special Libraries Association 2010) captures discussions and results of the various SLA unconferences that have been held and plans for future ones. The earliest SLA unconferences were hosted by the SLA District of Columbia Chapter in April 2009 and the SLA Academic Division in June 2009. An SLA unconference was held in Second Life in June 2009. The unconference is also permeating the conference scene, as evidenced by the inclusion of seven unconference sessions at the 2009 SLA Conference, ten sessions at the 2010 SLA Annual Conference and five sessions at the 2011 SLA Annual Conference. Other library conferences, including Electronic Resources and Libraries, American Libraries Association and Association of College & Research Libraries, have incorporated sessions that facilitate open discussions on topics of timely interest with minimal organizational formalities.

Changing Roles of the Information Professional

Some of the new job titles for information professionals reflect expanded and challenging roles that capitalize on the profession's underlying strengths while providing growth opportunities for developing new technical skills:

- Business intelligence specialist
- Clinical support librarian
- Competitive intelligence specialist
- Consultant
- Copyright librarian
- Digital asset manager
- Digital repository curator
- Informationist
- Knowledge manager
- Market researcher
- Taxonomist
- User experience (UX) librarian

Opportunities for new roles for the information professional emerge as technologies are incorporated into the workflows and processes of users. Several examples of how mobile technology is changing the role of information professionals are demonstrated in the medical library world. Information providers of the major medical reference works and medical journals have developed mobile interfaces to these vital content sources. Physicians are integrating mobile devices into their daily work activities such as researching patient symptoms, possible treatments, drug interactions and side effects, as well as consulting the patient's electronic medical record while they are making rounds in the hospital or conducting an office visit. The Cushing/Whitney Medical Library at Yale University illustrates how their **clinical support librarians** have adopted a role of training physicians on how to configure their mobile devices, install applications, and use medical information resources available through those devices (Gentry 2011) as part of their educational and support efforts. Other roles of a clinical support librarian include (Flewelling 2011) attending daily medical team meetings, participating in medical rounds made by the hospital physicians to patients, and then researching clinical information needs of various team members either on the spot or after the meeting.

The evolving role of information professionals was explored at the Pharma-Bio-Med Conference held in Seville, Spain in November 2010 (Basset 2011). Discussions revealed opportunities as information controller, organizers, advisors and **consultants**. The consulting role within an organization takes many forms such as researching and analyzing information, copyright advisor, and integrating content into the workflow of corporate knowledge workers. The responsibilities of a **copyright librarian** in an academic environment involve educating faculty, students and library staff about copyright requirements and intellectual property issues, assisting in electronic resource licensing and management initiatives, and serving as a liaison with the course management system administration and support (Brennan 2011). The emerging role of a **digital asset manager** builds on core strengths of information professionals for organizing content in a variety of forms to improve access while requiring business and technological acumen (Pellizer 2011). The challenges of a **digital repository curator** are illustrated by the Chesapeake Project through which three law libraries formed a shared archive to preserve and provide access to digital legal and public policy information that was published on the World Wide Web (Rhodes 2009). Opportunities for **taxonomists** encompass developing internal hierarchies and controlled vocabularies to improve the search and discovery process, metadata tagging for multidisciplinary repositories of digital content, and ensuring metadata interoperability within the publishing industry and supply chain (Huwe 2010). An emerging role for information professionals is the **user experience (UX) librarian** who conducts user needs assessments, usability testing, gathering and analyzing statistics, virtual sites design and production, and embedding content outside of library systems (Kolah 2011).

Critical Success Factors for the Future

As information professionals' roles evolve to meet the needs of their organizations, they will develop certain technical skills appropriate to their changing responsibilities. However, in order to achieve a sustainable career path, information professionals must demonstrate certain abilities as critical success factors:

- **Perceptive** – able to quickly understand user needs and demonstrate insight into how information content and technologies can add value to the organization
- **Resilient and agile** – flexible and adaptive to change but focused on the desired result or goal
- **On-going and self-directed learning** – continuously acquiring new skills and knowledge that will benefit the organization as well as the individual
- **Aligned with organizational values** – expressing and demonstrating the value of information services, role and expertise in terms that resonate with the organization’s mission and objectives
- **Collaborative** – working with others in the organization and colleagues in the information industry to achieve common goals
- **Thrive on ambiguity** – not just survive and adapt to change but seek out opportunities to clarify issues, overcome obstacles, and achieve results despite chaos or confusion
- **Innovative** – anticipate how information tools and techniques can improve workflows of users and deploy solutions that meet the needs of the organization
- **Versatile** – open-minded about options and alternatives, eager to learn new skills and embark upon projects in novel areas of expertise
- **Enthusiastic** – engaging in activities with energy and excitement that motivates others to participate and achieve desired results

Summary

Information professionals must prepare themselves and their organizations to collaborate, adapt, align and connect to be ready for the future. By taking a **proactive** role, information professionals can demonstrate value to their organization, chart their own futures, and ensure sustainability in their careers.

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