

Appendix B: Site Visit Reports

Site Visit 1 Interview Summary

Overview

Program 1 interviews were held at two locations in Washington D.C. and New York on two separate days in March 2009.

Interviewees were:

- Chief Library & Records Officer
- Knowledge Management Analyst, Tax and Benefits and Compensation (embedded staff)
- Global Research Librarian, Business Development (embedded staff)

Organizational Environment

Program 1 is in a large, international law firm with approximately 2000 attorneys and 28 offices, ten in the U.S. and eighteen in Europe, Asia, and the Middle East. The firm is described as having a collaborative culture that has moved away from a central, global headquarters. The firm's major practice groups include Corporate, Finance, Environmental, Litigation and Tax. Practice areas span the U.S and international offices and operate in a virtual environment. At the time of the first interview, the firm had downsized its attorney population by about 200 in response to the economic downturn. The impact of this change on operations and the embedded program are not yet known.

Administratively, the library is a firm-wide department within the firm's Global Support Services group, which includes Records, Docket, Conflicts and Knowledge Management. The Chief Library and Records Officer oversees these Global Support Services. Library staff totals approximately 70 world-wide. All U.S. office libraries are staffed and managed at the local level by an Information Resources Manager who is also responsible for local Records and Dockets operations. With the exception of a few global positions (see below), staff library staff reports to local managers. Currently, 25 reference librarians are organized into two job grades: Reference Librarian and Research Librarian. A third grade, Senior Research Librarian, is under consideration.

Embedded Library Services in the Organization

Four types of embedded services were described by the Chief Library and Records Officer.

- **Knowledge Management Analysts.** Four Knowledge Management Analysts (KMA) are partnered with six Knowledge Management Attorneys to provide

dedicated knowledge management services to some, but not all, practice groups. KMA positions are classed as “global:” staff is assigned to work directly for Practice Group Leaders, and report to a global Manager of Knowledge Systems. Positions are not located with the Practice Group Leaders they serve but are dispersed between the U.S. and Europe.

- **Global Research Librarians.** Two Global Research Librarian (GRL) positions serve a firm-constituency. One is fully embedded in the firm’s Business Development (BD) department, working directly with BD staff (80-100) on project teams. The other, is partially embedded with the BD Department and also serves firm-wide attorneys and the Chief. Both Global Research Librarians are broadly responsible for all geographic areas of the firm. Services focus on marketing and competitive intelligence research and analysis. They are “global” in an administrative sense, meaning that they are not tied to a geographic or practice area, but serve the firm as a whole and the worldwide BD staff in particular. Administratively they report to the firm-wide Director of Libraries.
- **Merger & Acquisitions Virtual Team.** Five reference librarians specialize in the area of mergers and acquisitions and are that practice group’s ‘go to” team for research and other projects. Members of the Virtual Team are located in offices throughout the U.S. M&A attorneys contact all five via a single, dedicated email address. These reference librarians are not fully embedded in the M&A Practice and have retained other general reference duties.
- **Company Representation Practice Embedded Services.** Approximately fifteen librarians are paired with an attorney to support content on an intranet site that tracks regulatory filings made on behalf of a client. Each librarian is a content steward for designated topics on the site; the paired attorneys provide input on accuracy and authority of the content. As librarians have become knowledgeable about the topics they steward they have also become the research specialists in these areas. These librarians are not fully embedded and retain general service responsibilities.

History and Management of Embedded Services

The Chief Library and Records Officer is a strong proponent for embedded services and has encouraged the formation of embedded programs to meet the changing needs of the firm and its practice areas. Embedded library services have developed steadily over the last 10 years or so either out of existing relationships (e.g., the Knowledge Management Analysts and Global Research Librarians) and services or from specific needs articulated by the practice groups (e.g., Mergers & Acquisitions Virtual Team and the Company Representation Services).

As programs have grown, the numbers of staff serving in fully or partially embedded roles have grown to over 15, with several other staff members waiting in the wings to join. Typically, staff is not hired directly for embedded positions. Instead, all personnel begin as generalists, even those with area knowledge, to ensure a good grounding in the firm's culture and practice areas and to build credibility with the attorneys. Embedded librarians are self-selecting, volunteering for embedded assignments as needs arise.

The Chief's approach to managing the embedded programs is to allow staff to develop their own roles in conjunction with their customer groups' needs. As result, roles have expanded and the spectrum of services and products offered to the practice groups have grown.

There is no pattern of locating embedded library staff with practice groups, with each other, or, in some instances, with other library staff. Like the global practice groups they serve, embeddeds tend to interact with customer groups and each other via the use of technology.

All staff in the umbrella organization the Chief manages takes the same 12 courses via an internal training program. Specific subject degrees are not required to assume an embedded position and much of the subject expertise is gained on the job domain knowledge is required In this way. The firm supports continuing education, such as paying for conferences and educational programs, and staff receives support from the groups they are in embedded with encouragement to attend in-house seminars.

Embedded programs have been initiated informally without written agreements articulating the embedded roles. The Chief noted that the firm does not require ROI or other success measurements, maintenance of statistics or other data to justify the continuation of the programs. Accordingly, there are no formal evaluations of the programs. The Chief does collect and acknowledge kudos received for work well done. Growth in the demand for services within the programs and demand for new programs are proof of success.

Nature of Embedded Services: Knowledge Management Analyst, Tax

The Knowledge Management Tax Analyst began work at the firm 12 years ago as Technology Manager for the firm's New York office library and assumed her current embedded position 4-5 years' ago. She has a Masters of Divinity, but not an MLS, and a strong background in information technology prior to and in her positions at the firm. Tax subject knowledge was acquired initially as a liaison between IT and the Tax Practice helping develop a web site and content for the practice group. From there, special projects were taken on including development of a Precedent Forms Library and a Meta Data structure.

The embedded position grew out of these successive projects and, most importantly, from increasing knowledge of the tax subject area, learned over time, and the resulting credibility with group members as her skills and knowledge were recognized. She also noted the positive effects of a dynamic relationship with the Tax Practice Group Leader, who picked her for the position and referred her to others in the Tax Group for KM-related projects, most notably to the Head, Benefits and Compensation Group. Along

the way, the KMA has begun to specialize further in the work of Benefits and Compensation. The KMA's embedded role has been so successful that she has been asked to take on the Environmental Practice as a customer group.

The KMA noted that the Tax Practice Group Leader tapped her for the KMA position, encouraged her increasing knowledge in the tax area, and integrated her into the group. She emphasized that the Leader's management skills and style were crucial to her success in her role: he recognized her information-related skills and allowed her to build her knowledge in the tax area so that she could ultimately apply these skills more effectively. The Leader has also been instrumental in growing her work, promoting her to others in the Group as her knowledge has grown. The Head of the Benefits and Compensation Practice did the same. Although most communications are with these two group leaders, the KMA noted that her work puts her in the midst of the entire Tax Group's work all of the time. For example she,

- Subscribes to and monitors all tax-related email lists for attorney work product (only the Tax Practice Group Leader also reads all email lists);
- Attends all [virtual] meetings of the Tax and Benefits and Compensation practices (virtual);
- Attends webinars on specialized, department-related subjects, particularly those on very current issues such as distressed credit;
- Manages departmental email lists and creates working groups.

The level and number of services provided to the Practice Group have increased as the KMA has become more embedded. Projects are layered on projects; no tasks or responsibilities have been removed. Complexity has also increased as the nature of the work has shifted from data extraction to analyzing sources to identify primary, relevant information. Initial tasks for the tax Department included:

- Developing the online Work Product Library; capturing and adding work product from email lists;
- Developing and maintaining taxonomies;

These tasks remain and on top of that she is now responsible for:

- Tracking pertinent changes in legislation and regulations;
- Using alerts and manual scans to track fact patterns in legislation, SEC filings, etc. to identify information of interest and create content on blogs and webpages
- Evaluating of Tax e-resources; and
- Responding to the "un-asked" question identified in departmental email communications.

In addition, the KMA has taken on non-tax related tasks, such as:

Tracking and maintaining firm-wide policy information on the firm's Intranet.

Management

The Tax KMA is located in the New York office, but the position is classed as global:

- Not administratively attached to any location;
- Reports to a newly-instituted Global Manger on the West Coast);
- Serves specified global practice group[s] in a virtual environment.

Funding is provided by the library budget. Day-to-day work and tasks stem from the five practice groups that make up Tax Department. The KMA has a dotted line report to the Head of the Tax Department. Although her embedded role extends to the entire Department, the majority of her work is generated by the two practice leaders (also

located on the West Coast). Within these working relationships, the KMA is self-directed: the KMA contributes to her task expansion as she becomes aware of, and tracks new issues.

Performance reviews are done by the Global Manager and the Chief, Practice Group leaders do not provide formal input, although thank yous/kudos are tracked by the Chief Library and Records Officer.

Support

The Knowledge Management Analyst functions within the umbrella structure the Chief Library and Records Officer oversees but is not directly connected to the Library Group or the reference librarians. Because of her subject knowledge, reference and research questions are sometimes directed to her. On these occasions, she relies on the Global Research Librarian in her office and other librarians for specific research strategies. Face-to-face interaction with members of the Knowledge Management Group is infrequent but virtual meetings do take place and the Global Manager provides coordination of technology solutions and applications and is a resource when questions and issues arise,

Success Factors

No formal review is done on how the KMA's embedded services directly benefit the Tax Practice or the firm. The KMA noted that she seeks continual shareholder feedback on the products and services she provides. The close working relationship with and continual feedback from the customer groups ensure value delivered. Direct feedback from shareholders and the steady increase in demand is the tangible proof of success. None of the KMA's customers or managers was interviewed for their take on the success of the programs. Nevertheless there are a number of strong indicators in the KMA's interview of the value of embedded services to the organization:

- Organizational knowledge – the KMA is the one person in the Tax Practice (besides the Group Leader) who truly works across the entire Practice (e.g., she monitor all email), knows who is working on what matters, understands emerging issues and can network people across groups.
- Work product – captures attorney work product and other relevant documents from attorney emails that no one else is capturing and makes them accessible without attorney effort (email is not auto-archived).
- Knowledge feeds – pro-actively captures and makes accessible highly relevant new knowledge, such as regulatory changes, information on new issues, etc.
- Cross-departmental support - Attorneys outside the Tax Practice, such as from Litigation, are seeking out the KMA to create products to monitor tax-related issues.

The KMA considers these to be critical factors in the success of the program:

- Leadership – both the Tax Practice Leader and the Benefits and Compensation Head have a very accessible management style, promoting a collegial

relationship and have provided her a framework of trust and acceptance in which she has been able to learn and grow.

- Full inclusion in the practice – from the beginning, the Tax Practice Leader brought her in as a member of the Tax Practice, involved her in meetings and webinars, refers others to her.
- Curiosity and persistence - personal traits that have promoted a history of self-learning (noted that she had taught herself to use the Wang system long ago).

Future – Potential Impacts

These issues could impact continuation and expansion;

- Increasing Specialization - As the KMA has gained more specialized knowledge in Benefits and Compensation, demands are rising proportionally for support in this area. It is becoming increasingly difficult to balance expectations of generalist support for the Tax Practice and specialist support for the Benefits and Compensation Group.
- Cross-departmental support – As the KMA's knowledge in the Tax and sub-specialty domains deepens and awareness of her capabilities widens, research requests are coming to her. This creates a conundrum for her: her expertise is in systems and knowledge management, not reference; but her domain expertise makes her a natural choice for many Tax attorneys for research assignments. To accommodate this demand, more formal process for involving research librarians in KMA projects will be needed.

Nature of Embedded Services: Global Research Librarian

The Global Research Librarian (GRL) has been with the firm for four years: as a reference librarian for the first two years, and as a fully embedded librarian with Business Development for the last two. She has an MLS and experience in business, marketing and competitive intelligence research first as in the business division of a large public library and then as a firm research librarian. She is now fully embedded in the work of the Marketing and Business Development Department (BD).

The GRL's embedded role evolved from a long-term working relationship with BD and BD's need for dedicated competitive intelligence research to support firm expansion. The Chief Marketing Officer initiated the GRL's new role and integrated her into the department by:

- Introducing her new role and function to BD staff members;
- Including her as a team member in all meetings;
- Sending her to other offices to meet BD staff; and
- Promoting her research capabilities.

The GRL noted a marked change in her role from the outset: although the competitive intelligence research work continued, her level of responsibility and accountability in the research process grew. Instead of supplying a piece of the information for a BD product, she is fully invested in the process, with responsibility for the outcome. As a result, her work has shifted towards analysis and synthesis of the data. As an example, the GRL

contributed a market research component to a major report that was used by the firm's Executive Committee in their decision to open a new, international office.

Today, the GRL embedded services include:

- Research contributions to RFP's, firm capabilities for client pitches, dossiers on potential clients and markets companies, market research, competitive intelligence;
- Problem solving an approach as part of a BD team (As she put it, "puzzle through a question together.");
- Participation in regular Global Business Development managers' conference calls;
- Proactively addressing new initiatives and other needs she identifies in these meetings;
- Monitoring current issues and creating news alerts, e.g. she maintains a blog on Asian business opportunities;
- Evaluating e-resources.

Currently the GRL estimates she spends about 20% of her time on long-term projects and 80% on immediate daily questions.

Management

The GRL is located in the New York office with other research librarians. Administratively, she is part of the Global Services Team and reports to the firm-wide Director of Libraries, located in Los Angeles. Functionally, she is tied with the firm's research librarians, participating in the firm reference librarians' monthly conference call. In all other respects, she functions as a member of BD Department. She noted that she has lost the sense of engagement she had with other library staff because of her embedded role.

The process for performance reviews and embedded program evaluations is similar to that described for the Knowledge Management Analyst. The GRL is evaluated by the Director of Libraries and both the Director and the GRL collect any feedback provided by BD staff. As part of a working BD team, the GRL may get feedback directly from other members. But, she admits this can also be more of a challenge when everyone is a team member and everyone is expected to perform. As a result, the GRL is not always aware of how her work impacts the firm, of the ROI of her work.

BD members learn about embedded services through a combination of the BD Chief's promotion and the GRL's proactive initiatives. The GRL noted that she has worked with almost of all BD staff. In addition, she makes it a point to meet all new BD staff and she provides research training to all new BD managers.

Support

The two Global Research Librarians share some work responsibilities related to their non-embedded work, including:

- Resource evaluation;
- Librarian training in competitive intelligence research; and
- Special projects for the Chief Library and Records Officer.

The relationship with the firm's research librarians was described as one of give and take. The ability to reach back to general research librarians for certain types of research support is extremely important in times of overload. The GRL often relies on a particular reference librarian for back-up that she trained in corporate research. At times, it is more expedient to route some work from the firm's Asia offices to the West Coast Reference librarians because of their familiarity with the work in these offices.

In turn, the Global Research Librarians' serve are a resource for the research librarians for competitive intelligence and market research questions. Because the GRLs' work puts them in contact with more of the firm's research librarians than any other of the library staff, they have better knowledge of who is doing what. They share this inside knowledge with the library staff.

Success Factors

None of the Global Research Librarian's customers or manager was interviewed regarding the success of the embedded role. Like the Knowledge Management Analyst, the GRL largely credits the leadership of the Chief of BD in the success of her embedded role, particularly these characteristics:

- Acting as an executive champion;
- Integrating her into the group through introduction and inclusion in key meetings;
- Facilitating face-to-face meetings;
- Continually encouraging BD staff to incorporate her research abilities into their teams.

The embedded role has given the GRL an increased insight into the firm's work, goals and strategies, by placing her closer to that work. She in turn shares this inside information with other library staff. Having this information provides the reference librarians an opportunity to operate closer to the firm's work and, in turn, provide more pro-active and value-added products and services. In effect, both the GRL's embedded role and her on-going relationship with the non-embedded librarians benefit library services by bringing understanding of organizational needs into library planning and operations. The GRL noted that she sees visible differences in how librarians are working with the attorneys to provide services now.

Other observed success factors include:

- Establishing credibility with the Chief in a pre-embedded position;
- Earning credibility with and trust of BD staff from the outset;
- Building relationships with all BD staff;
- Domain knowledge and research capabilities combined with confidence in self as a professional.

Future – Potential Impacts

Workload and demand for services are increasing and the Global Research Librarian sees no reason to expect a change in this pattern. A concern is that the GRL still has some general library responsibilities and balancing these with embedded responsibilities – especially during peak workload periods – can be difficult. This is a potential inhibitor to taking on more non-traditional roles and to growth of the program.

The GRL sees an ongoing pay-off for the library from her embedded role. Her dual functions as library staff and BD team member allow her to act as a conduit for knowledge about the firm to the library staff, better targeting library products and services. For the future, keeping her office in the library will help serve this purpose.

Future of Embedded Services

Global Support Service's embedded programs are successful and expanding. The firm's collaborative culture combined with the Libraries' reputation for excellence and the Chief's policy of never saying "no" makes this fertile ground for the development of embedded library programs. In addition, the Libraries have a staff eager to take on embedded roles.

The Chief expects the demand for Knowledge Management Analysts to expand soon to other practice areas. Global Research Librarians are working at capacity and demands are increasing. The M&A Research virtual team has proven so valuable that Chief is considering a similar model for the Corporate Finance practice.

Site Visit 2 Interview Summary

Description of the Organization

Site visit 2 was held during a one-day period in March 2009.

Site 2 is a medium-sized private, independent technological university located in the northeastern United States. It offers more than 50 undergraduate and graduate degree programs in science, engineering, technology, management, the social sciences, and the humanities and arts, leading to the BS, MS, ME, MBA and PhD degrees. The campus community includes over 4,000 students and over 300 faculty members.

Organizational structure:

The Provost is the chief academic officer and second-ranking administrator in the organization.

The Library is placed within the administrative reporting structure of the Vice President and Chief Information Officer, which is a parallel organization to the Provost's. The Library Director carries the rank of Assistant Vice President. Within the library, an Assistant Director supervises Access, Reference/Instruction, and ILL services, which includes 3 nondegree staff, and 8-9 full time equivalent staff holding the MLS degree. The Manager of Outreach and Instruction reports to the Assistant Director.

Interviewees

- Manager, Outreach and Instruction (employed by the organization for 4 ½ years)
- Dean, Interdisciplinary and Global Studies Division (IGSD) (Length of employment unknown)
- Associate Professor, Dept. of Biology and Biotechnology (20 years)
- Assistant Vice President for Library Services (1 ½ years)

Nature of Current Embedded library services work

Two embedded services were discussed:

Instructional and consulting services for the Interdisciplinary Global Studies Division

During junior year, students have the option to enroll in a 1 term (7 week), 9 credit course in which they prepare a proposal paper regarding a specific site and project available to them. If their proposal is accepted they then spend the following 7-week term on the site, performing the project. Sites and projects may be U.S. or in foreign countries. 50% of students do an off campus project. Students work in project teams (typically 7 to 9 students).

Projects develop the students' skills in research methods, writing, and critical thinking. Most students are engineering and science majors but the projects give them the opportunity to use social science concepts and methods. They must understand and incorporate the social impacts of the projects in their work.

The role of the librarian is critical in enabling students to learn the research skills and use the literature in unfamiliar areas. The Manager, Outreach and Instruction, reminds course instructors to schedule instruction sessions. The Manager, Outreach and Instruction, and one other librarian share the duty of providing embedded instructional services to the students, either by coming to the classroom or having students come to the instructional lab in the library.

In addition, each project team is assigned a consulting librarian. Student project teams are told at the first class meeting that they need to schedule consultations. Teams quickly learn that meeting with the librarian is critical to mastery of information literacy skills, and to the success of their project proposals. Initial meetings with the librarians typically take place during the first week of the project. Approximately 8-9 librarians, or all the public services professional staff including the Assistant Director, share duties as counselors to project teams.

Great Problems course (first year experience)

As result of a recent first year experience review, the institution has established a Great Problems course which students can enroll in during freshman year. (Topic examples are: climate change, energy independence.) Due to the labor intensive nature of the course, not all students are able to enroll at this time. The institution would like to expand it.

One interviewee, an Associate Professor of Biology, was the instructor for a section of the Great Problems course. Librarians come to the classroom, or classes go to the instructional lab in the library, to receive information literacy instruction. Librarians also create a custom Blackboard page with information resources relevant to the specific topic of the Great Problems section and links to digital library resources, web resources. This service has been offered to all sections of Great Problems and the professor believes all instructors have accepted the offer – so all students in Great Problems receive the instruction and custom resources.

History of Embedded Services

Instructional services for the Interdisciplinary Global Studies Division program were offered before the current Manager, Instruction and Outreach, arrived. However, she changed the nature of the relationship and made the services much more valuable to the project teams. (See Success Factors below.) The Manager was hired to do outreach but without a specific set of tasks to achieve her goals.

The Great Problems seminars were established within the past 2 years as a result of a task force recommendation. The Task Force was being formed shortly after the Manager arrived and she volunteered to serve, which gave her the opportunity to offer embedded information literacy and library instructional services.

Both current services, those to the IGSD relationship and for Great Problems were both initiated by library staff. The former was begun by a past library director but has been strengthened and intensified by the Manager, Outreach and Instruction, while the latter was initiated by the Manager.

In neither case is there a written agreement in place that articulates the roles of the embedded librarians. In both cases, integration of the embedded librarian into the faculty activity was accomplished through the initiative of the Manager. Shortly after taking her present position, she volunteered for the faculty committee to review the first year experience. This volunteer position in turn enabled her to make contacts with the Dean of IGSD and others. Her participation in this and subsequent success with IGSD established her credibility.

There were no specific actions taken by library or customer management to introduce her or integrate her into the customer groups.

Management of Embedded Library Services Today

Supervision is solely by library management. Funding is provided by the library budget. There is no formal process for the Dean, IGSD, or individual instructors in the IGSD or Great Problems programs to provide input to annual performance reviews. Customer thank yous/kudos are taken into account as part of the annual review process.

The Manager and other librarians all have offices in the library; none have offices in other areas such as academic departments. There are no satellite/branch libraries.

Students become acquainted with the Manager and others through the Great Problems and IGSD services, and seek them out for unrelated work afterward.

It was noted that some librarians are hesitant to take on instructional roles, which will become a constraint on future growth. However, all degreed professional librarians have been receptive to taking on a consulting role with project teams as well as individual students.

Training and education requirements

The Manager has attended engineering conferences as well as librarianship conferences and will attend Association for Science and Engineering Education this June. She has also audited courses and attended individual lectures to increase her technical knowledge.

Success Factors

Services to the Interdisciplinary Global Studies Division are viewed as highly successful. The nature of projects makes it an excellent opportunity for librarians. Because it is interdisciplinary, social science and physical science/engineering/technology disciplines must be brought to bear. Faculty are specialists; students are mostly engineering majors, thus everyone is outside their comfort zone. The broad knowledge and information literacy expertise of librarians become critical to overcoming the knowledge gaps. The requirement to do a project proposal, and within it, a literature review, form an opportunity for students and faculty to come to grips with research in unfamiliar fields.

The success of the current IGSD program model has been documented in the literature.¹ The authors, DiBiasio and Mello, cite two information-related process assessments: “

- Does the team effectively use a variety of information-gathering techniques and information resources?
- Does the team consistently and accurately determine whether information is credible and relevant to tasks?

The authors also present at least one information-related product assessment:

- Did the team analyze the data or information collected in an appropriate fashion?

In the same study, a difference in achievement was noted between students engaging in on-campus projects, without the benefit of advisory services, and those engaging in off-site projects, having the benefit of advisory services – which include the information consultants from the library staff. The latter group scored significantly higher in all assessment criteria, including the following: “Relevant literature consulted and synthesized”. The Dean attributed the improved performance to the work of the embedded librarians.

The Associate Professor of Biology reports that she can see the differences among sophomores between those who took the Great Problems course as first-year students (and had contact with the librarians) and those who didn't. The information literacy skills developed in the Great Problems course stay with the students and enable them to perform better.

At the end of the Great Problems course, students write Reflections on the course. Approximately 10% (5 or more of 50) mention the value of librarian involvement.

“[The Manager, Instruction and Outreach] is not just a librarian.” – Associate Professor of Biology.

The Assistant Vice President noted the following success factors:

- Ability to connect (with faculty)
- Understanding of the curriculum and curricular goals and objectives
- Service on faculty committees (the Assistant Vice President would like to institutionalize librarian involvement in faculty committees)

The Assistant Vice President also articulated that the role of senior library management has been to give the Manager/embedded librarian the freedom to develop the role.

The Associate Professor of Biology noted that:

- Library staff are proactive
- Library staff have baked cookies as a promotional tactic!
- The use of a scavenger hunt for information resources in library has proven to be an effective instructional tactic
- The Library staff demonstrate a commitment to the goals of the institution; they volunteer and participate
- The Library staff conduct themselves as professionals.

Exposure to library services and resources via embedded relationships carries over – students who gain this exposure continue to be active library users for the rest of their academic career.

The Future

The embedded services program has strained library resources, and library management has been cobbling together resources to continue to support it. A pilot project will be initiated that may lead to a strategy for the future. It involves the increased use of students and paraprofessionals at the reference desk, which could free up librarians for expanded embedded roles.

On a similar note, since the Library is part of the institute's information technology (IT) organization, some IT help staff will be moving to the library, and may take a role in providing library public services. Other opportunities for collaboration and synergy between library and IT staff are also being explored. For example, Sharepoint is being used as a collaboration tool for IGSD project teams, so IT and Library staff may create synergies by delivering seamless collaboration with the teams for both technical support and information literacy.

Library management feels a need to document the value and provide better evidence to support ongoing sustainment and potential growth of embedded services.

The Associate Professor of Biology also anticipates resource constraints in the institution as a whole and suggested the possibility of training advanced students to assist with some tasks.

¹ DiBiasio, D., Mello, N.A. (Fall 2004) Multi-level Assessment of Program Outcomes: Assessing a Nontraditional Study Abroad Program in the Engineering Disciplines. *Frontiers: The Interdisciplinary Journal of Study Abroad*, vol. 10, p. 237-252.

Site Visit 3 Interview Summary

Description of the Organization

Site Visit 3 was held over a two-day period in April 2009.

Program 3 is the health science center of a large public university in the eastern United States. The health science center comprises six colleges, and is administered by a Senior Vice President of the university. It comprises almost 7,000 students at all levels from undergraduate to doctoral; and has a total annual budget of over \$1 billion. It includes a hospital and other medical treatment facilities and has a total faculty and staff population of an estimated 10,000 or more.

Organizational structure

Until recently, the library for the center reported to the Senior Vice President, and not to the university library system. Recently, administrative responsibility has shifted, and the health sciences library director now reports to the director of university libraries. The impacts of this change on operations are not yet known.

Within the health science library, the Head of Reference reports to the library director and the Genetics Institute director. There are five reference librarians in the reference unit.

Interviewees

- Director, Health Sciences Library (employed by the organization for 1 ½ years)
- Head of Reference (recently promoted to this position; has been functioning as an embedded Reference Librarian; employed at the library 14 years; embedded almost 8 years)
- Professor and Department Head, Dept. of Molecular Genetics and Microbiology (length of service unknown)
- Associate Professor, Dept. of Molecular Genetics and Microbiology (9 years)
- Associate Director and interim Director of a specialized institute in the health science center. (length of service unknown)

Nature of Current Embedded library services work.

The following embedded services were discussed:

Specialized services to the Genetics Institute (GI)

This is a virtual institute made up of faculty most of whom hold appointments in academic departments elsewhere in the university. Approximately 200 faculty belong to the Institute, but only thirty are housed in the Cancer/Genetics Research Building where the Institute staff reside.

- The Reference Librarian is the facilitator for the GI website. She oversees the content, does not code.
- She also is responsible for inviting faculty to join the Institute – she identifies faculty anywhere in the University who are working in genetics.
- She tracks publications by GI faculty and researchers using PubMed. Each member is monitored by name. She sends this information to the institute's public relations person; who then writes up announcements for on and off campus publications.
- She is the organizer of the Seminar Committee. She has strengthened the seminar series since taking this on. Almost every week during the academic year, the GI presents a seminar. About 2/3 of speakers are on-campus, and about 1/3 are invited speakers from elsewhere. When offsite speakers are invited, there is a luncheon to which graduate students and post-doctoral researchers are invited.
- She is also on the committee for the annual Symposium, e.g. "Florida Genetics 2009", which include 4-5 high profile speakers from other institutions as well as presenters from on campus – there were 119 poster presentations in all last year. She edits the abstracts and creates the program; she also facilitates promotion of the event, runs the online registration, and helps determine which speakers to invite. She sometimes hosts speakers, and has been named co-chair of the committee for 2010.
- She is a member of the Executive Committee of the Genetics Institute and contributed to its strategic plan; she wrote the bioinformatics section of the plan.
- She also serves as liaison to the Genetics Institute's Ph.D. program

Specialized Services in Bioinformatics

- The Reference Librarian holds a joint appointment in the Molecular Genetics and Microbiology Department. She attends faculty meetings of the department; shares information, hears concerns, lobbies for initiatives.
- The Reference Librarian consults with faculty who have molecular-related research questions.
- The Reference Librarian serves as library liaison to four departments in the College of Medicine: Molecular Genetics, Biochemistry, Physiology, Anatomy.

Teaching

- Teaching and consulting on genetics, genomics, proteomics and bioinformatics
- The Reference Librarian teaches 3 of 15 classes in the Bioinformatics course, Fall terms, and has done this for several years. The goal of the course is to "teach Ph.D. students how to retrieve information, identify and select bioinformatics tools" to process it. An example of such a tool is the Basic Local Alignment Search Tool (BLAST). The Librarian covers topics such as the use of tools provided by the National Center for Biotechnology Information (NCBI), how to use a protein structure manipulator in searching, etc.
- College of Medicine: the Reference Librarian teaches one session to first year medical students (requires 2 one-hour sessions plus homework)
- Teaching for undergraduate Genetics course: students use resources from the National Center for Biomedical Information (NCBI) to research a genetic disorder.

The Reference Librarian meets with each student twice during the term. (Spring term: she teaches two 2-hour sessions)

- Teaching for Junior Honors students: these are students who have been admitted to medical school – 12 students per year. The Reference Librarian teaches 2 sessions – 4 hours total on bioinformatics. This takes place during the first week of Fall term.
- Teaching for undergraduate Biophysical Chemistry: the Reference Librarian teaches PubMed and protein structure searching, three times per year.
- The Reference Librarian meets with incoming College of Medicine Ph.D. Students twice during the fall term.

Participation in a Bioinformatics Initiative

The Reference Librarian was named as key personnel in the area of biomedical informatics in connection with an application for a Clinical and Translational Science Awards (CTSA) grant and assisted with some of the reviewing of the grant prior to submission.

She is a member of the Biomedical Informatics Academic Program planning committee, which will create the new academic program in biomedical informatics. The program is expected to start with certificate and ms degrees, and grow to full Ph.D.

Summary: The Reference Librarian's heaviest time commitment is teaching.

History of Embedded Services

Embedded services were initiated approximately 8 years ago Starting in the mid-90s there were the first liaison assignments to Nursing and Dentistry. In the late 90s a new strategic plan established the model of a liaison for each College. Within 2-3 years, the College of Nursing and the Genetics Institute agreed to pay for their liaison/embedded librarians. However, no other colleges have followed suit.

The Librarian initiated the relationship with the Molecular Genetics and Microbiology Department by attending a faculty meeting, where she presented the liaison program. She showed that she was knowledgeable in important areas, such as National Library of Medicine and National Center for Biotechnology Resources, DNA sequencing. She was then invited to participate in the department Journal Club: a forum in which faculty would gather to discuss a pertinent scholarly article. She became an active participant, and contributed to the meetings. From this point, her role in the department grew, and in turn led to other embedded engagements enumerated above.

No written agreements were created when embedded services were initiated, and none are in place today.

Management of Embedded Library Services Today

As noted, the Reference Librarian holds a joint appointment in Molecular Genetics and Microbiology Department and Library and co-teaches the Bioinformatics course.

The Genetics Institute pays the embedded librarian's salary. Her time is not closely tracked; there's no formal review of how embedded librarian spends her time or contributes to the Institute. The Institute feels that it does gain formal access to her service by paying the salary, and is aware of her work with various courses and other components of the health science center.

The Genetics Institute director does not participate actively in the Reference Librarian's performance review, but was instrumental in initiating and contributing to a recent promotion package for her.

All Reference Librarians split general reference and liaison (embedded) duties. Of the other five Reference librarians:

- Four others have significant teaching responsibilities
- One builds tutorials for distance education and monitors class Blackboard discussions
- Librarians serve on Curriculum Committees

The Reference Librarian publicizes her services by sending notices to new faculty and students; email once per year. (She finds that Post-doc researchers are hardest to reach – there's no good way to find out when they are hired and who they are.)

Benefits to the library: the embedded model is actually more efficient. It's better to do a class session for 20 students that is planned and developed than 20 ad hoc sessions for individual students at the reference desk.

It is good promotion for the library and results in better learning for the students.

Training and education requirements

The Reference Librarian holds an advanced degree in a natural science discipline in addition to her Library Science degree. The Genetics Institute pays for one conference annually for her. One other Reference Librarian also receives support from the groups they are embedded with, such as paying for one technical/scientific conference per year.

Success Factors

The embedded librarian's contribution is incorporated in student evaluations of the Bioinformatics course. The course is highly rated, and the librarian is highly rated as an instructor. Even though students may not absorb all the material presented, they do leave the course with an appreciation of the importance of using advanced techniques, and often consult with the librarian during their subsequent coursework and studies.

The Project Director sees the value of embedded services in the librarian's organizational knowledge. He referred to a presentation by Oregon Health showing that biostatisticians and librarians are most highly connected people in the health science organization. The reason is that both work across organizational structures with many different individuals and groups.

Success factors are considered to be:

- Professional credentials (advanced degree in a related field and demonstrated knowledge) give credibility.
- The librarian's domain expertise and personal characteristics are both essential to success in the role.
- Build personal relationships. An introvert can do this! They work!
- Get outside your comfort zone.
- Have courage, creativity. Take a risk! Not everything works – don't be discouraged when something you try doesn't work.

The Future

There are several concerns: over sustainability and scalability of the embedded services program; over a feeling of overwork on the part of the embedded librarian (she works well over 40 hours per week), and over declining resources.

Recent budget cuts have led to loss of 2-3 positions. Another embedded librarian left and the position has remained vacant for a considerable period. As a result, the position has been cut to half time. Unfortunately, there was a lack of documentation and evaluation to demonstrate the value and the role that the person had been playing in the group she was embedded with.

Despite the constraints on resources, demand is increasing, as measured by number of classes taught, students, number of emails received from customers. An important element of the increase is in nontraditional responsibilities. For example the Reference Librarian is Co-Chair of the Annual Symposium for 2010. Also, she is experiencing an increase in invitations to participate in initiatives and grants.

The library director sees the possible establishment of a single service point model in the library as a way to release librarians from desk duty and enable them to focus on embedded responsibilities. It's anticipated that this will be a major effort – which will also require attention to staff development.

Site Visit 4 Interview Summary

Overview

Interviews were held on May 1, 2009 at Program 4's offices in the Mid-Atlantic United States.

Interviewees were:

- Business Manager, Information and Computing Technologies (library's direct report, 4 years in position)
- Senior Research Analyst (embedded librarian, also has title: Senior Consultant and Account Manager; 35 years with organization);
- Research Analyst (embedded librarian, also has title: Consultant; 31 years with Organization)
- Competitive Intelligence Manager, Applied Bio-Sciences (Customer Manager)

Organizational Environment

Site 4 is in a Fortune 500 science-based company headquartered in the Mid-Atlantic. Operations are organized into 5 business "platforms;" global functional departments support these platforms. Approximately 60,000 are employed in the U.S. and 12 other countries. Products and services focus on the areas of food and nutrition, performance materials, apparel, safety and security, construction, electronics and transportation. Approximately 5 years' ago the company downsized, selling off one of its oldest divisions, Textile & Fibers, and reducing its work force by some 20,000. The company website, notes, however, that in 2006 34% of its profits were generated by products introduced in the last 5 years.

The company's Central Library is located on a campus with Central Research and Development. Approximately 2000 work on the campus, which is split between scientific Research and Development and business Research and Development. The embedded librarians interviewed for the Case Study serve the scientific research and development community and the market/business community. The Central Library is one of 3 departments (Computational Biology and IT and Information Sciences) within the Information and Computing Technology Group (I&CT), headed by the Business Manager. According to the Business Manager, approximately 40 staff members work for the Information Sciences/Central Library. Of those, 5 staff members, including the two interviewees, function in some capacity as embedded librarians. A Manager within Information Sciences/Central Library oversees the embedded positions (this person was not interviewed).

The downsizing has had an impact on the continuation and expansion of embedded services. When the company downsized, it also consolidated its two library facilities into one and eliminated about 1/3 of its staff. As a result, 4 embedded positions were eliminated, substantially altering the functions of both of the embedded interviewees.

Company philosophy, communicated on its website, emphasizes “science and innovation” combined with creating “shareholder and societal value.” The company is also committed to the concept of a single, global company that promotes internal and external collaboration. This is usually a very hospitable environment for embedded programs. The future of the embedded programs, however, may be at risk (for reasons discussed further in the study). The Business Manager noted that a goal was to enlarge the embedded program, but he has not achieved that yet and he is transitioning to a new position.

Embedded Library Services in the Organization

Three to four embedded programs were discussed by the Business Manager and the two embedded interviewees. These included:

Embedded in groups within Business Platforms and related business units – Central Library pairs research analysts, who possess a high degree of domain knowledge (particularly in biology or chemistry) with science R&D groups to perform highly specialized work. Groups, and the embedded librarians who work with them, work across geographic boundaries and may also work across Platforms. Some embedded librarians may provide services exclusively to their groups and not to others in the organization. Most seem to do both: provide embedded services for a group and provide traditional reference services to the company population. Currently, five analysts, of a staff of 40, work in this way. Embedded roles require a particular skill set: a high degree of competency in group’s domain and a willingness to move outside the comfort zone of traditional library roles. The Central Library may lack staff with these skills and/or not be actively nurturing them within its staff.

Embedded in a specialty library, e.g. Occupational Health Safety Library - this program was downsized when the facility moved and some work absorbed by Central Library;
Embedded at a plant site - 10-25 information providers are situated at company plant sites. These are local employees, hired by site management, to meet the information needs of on-site staff. Some have an MLS, others do not. They may not be embedded in the sense that they have a high-degree of domain expertise, are incorporated into a group’s work and accountable for the outcome.

Embedded in foreign offices – information providers located in international offices, in India and China; may be equivalent to embedded librarians at a plant sites and not a separate embedded program.

History of Embedded Services

Embedded services date from the mid- to late 1970’s and were begun on the single initiative of an individual, the current Senior Research Analyst and her gradual move from Central Library to the Textile and Fabric Group. The Senior Research Analyst’s (formerly a government documents librarian) involvement in a hazmat regulations course caught the attention of a Vice-President in Textile and Fabrics. The VP encouraged further involvement in both the domain and the work of the group. At the time, the VP needed a reliable and convenient way to stay on top of the developments in the industry. The immediate result was a highly successful current awareness product that expanded in coverage and content over time to become a globally disseminated report, Textile

Update. The Senior Research Analyst became fully embedded in the Textile and Fabrics research lab as her knowledge and the resulting work grew. The position continued until about 2004 when this division was sold.

At least one other embedded position was added within a few year's of the Senior Research Analyst's. This position, held by the current Research Analyst, was not part of the Central Library. Like the Senior Research Analyst's, it evolved over time and in response to a specific set of circumstances: the librarian's pre-existing domain knowledge in health science and regulatory research, her initial concentration in toxicology and occupational safety and health at the company, and a work location at the testing lab (Health and Environmental Sciences). As her domain knowledge deepened, her role grew. She noted that she was pulled more and more into the work of various groups at a time when more and more chemicals were coming under federal regulations. Her role as an embedded eventually included information services for the toxicology testing lab, management of the Occupational Health and Safety Library, specialized information services in toxicology and occupational health to a global population, Her embedded role in toxicology and agriculture continued until about 2004/2005 when the Occupational Health and Safety library was downsized

The Senior Research Analyst was integrated into the Textile and Fibers group by a senior group leader, solidifying her position as an embedded librarian within the group. The customer leader, initiated the services, introduced and expanded her services to the global, group population, brought her into all group meetings, and facilitated her learning experience. Through the customer leader, the Senior Research Analyst was fully incorporated into the group as a member vs. an outside service provider. Most notably, the customer leader served as a mentor, encouraging the expansion of the embedded role, and telling the librarian "not to be classified by schooling." The Research Analyst's role was also initiated by customer leaders reaching out to involve librarians in the competitive information and regulatory end of chemical-related projects. It emphasized the importance of management support in the expansion of her role.

Both embedded librarians also took pro-active steps to integrate themselves into their customer groups by acquiring the domain knowledge in their customer's fields necessary to gain credibility. The Senior Research Analyst sought out internal and external training and attended courses at the Institute of Textile and Technology to learn about textile machinery, practices, and laboratories. The Research Analyst took toxicology courses from the Toxicology Lab. She was able to tell the scientists she worked with of her own hands-on experience, that she "had walked the cornfields" just like them.

The embedded librarian program apparently grew to include 10 or more embedded positions until 2004/2005. At that time, the Research analyst noted the Central Library lost at least 4 of its embedded positions. Details on the nature of these embedded roles are not known. The Business Manager noted that there are a total of 5 librarians remaining in embedded roles (including the two interviewees). The exact nature of the services these other three provide is not known.

The Business Manager noted that these three embeddeds, along with the two interviewees, are the only library staff for which there are specific fee-for-service contracts (Service Level Agreements) for their services with customer groups. Although this would indicate both a high degree of domain knowledge and value-added work-products as well as a close working relationship with the groups to warrant separate

service contracts for their work, the Business Manager commented that the relationships and roles of the other three embedded librarians are not equally strong and well defined.

The level of management support and customer relationships described by the interviewees, may provide some clues to the difference in their and both the other embeddeds particularly those at considered embedded at a plant site. Both interviewees were originally brought in by management that wanted/ and encouraged larger roles from the start. Expectations from both sides involved were not for traditional library services.

Management of Embedded Programs Today

Embedded library programs are now administered by the Central Library and the embedded librarians report within this organizational structure. The Research Analyst noted that now she reports fairly far down the chain: to a supervisor who reports to a manager who reports to the business manager. Both the Senior Research Analyst and the Research Analyst also have an informal reporting relationship with their customer managers: the Research Analyst with the VP and Technical Directors of the businesses she serves; the Senior Research Analyst to the VP of the fibers group, Technical Directors of the business platforms she serves, and to the account managers she works with.

Both have offices within the Central Library complex and not with their customer groups. The Central Library uses a funding model based on requesting specific funding allocations from each of the business platforms. The Senior Research Analyst's position is funded by these general contributions to the library annual budget. The Research Analyst is funded through Service Level Agreements between the library's parent organization and her customer groups.

There is no formal process for customer managers to provide feedback for performance reviews; nor are there processes for evaluating the benefits to the organization or to the Central Library of the embedded programs/services. The Research Analysts' current customer manager noted that, although it might be possible, he does not currently contribute to this embedded's review. He does use continual and extensive interaction with the embedded librarian to assess value. He noted that demand for services has expanded, requiring the embedded to pull-in other librarians to perform more routine work.

The Research Analyst does create case studies with outcome measurements for the work she contributes to customer projects. The Senior Research Analyst collects email acknowledgements of her contributions. The Business Manager, as well, tracks emails, thank yous/kudos, anecdotes, and some quantitative indicators to assess information services in general and embedded services in specific. These measures are not used to justify continuation of services. As a consequence, the Business Manager noted as a consequence that the key challenge is "right-sizing": how does the manager know that the right amount of information services is being provided?

Education and Training

When the interviewees first began to move into their embedded roles, there were no specific educational or training requirements. Each brought strong professional skills in regulatory and business research experience. Each accrued scientific domain knowledge on the job and as they went. This situation would probably not be repeated today for any new embedded positions. The Research Analyst's customer manager stated that any replacement for the current embedded would have to come with a strong background in bio-technology and chemistry. The Business Manager concurred that a background in those subjects would be necessary to assume an embedded position now.

To attain specialized domain knowledge, both interviewees attended internal and external courses in the science and technology of their customer groups. Both receive support from their customer groups to attend classes. Both also attend technical and scientific conferences. Additionally, the Senior Research Analyst is on the Board of the American Fiber Manufacturing Association (representing the VP), participates in ASTM Technical Committee (COTCO) and is US delegate to ISO for Fibers.

Internal Communications and Support

Both of the embedded librarians and the Business Manager agreed that some of the library staff are reluctant to take on embedded roles. Both embeddeds are concerned that continuance of existing embedded roles may be at risk because embedded roles, serving global business needs, are not sufficiently promoted by the Central Library. Both embedded librarians mentor other library staff on how to move towards embedded roles. The Research Analyst noted that she was brought into the Central Library in part to help library staff "get out of the library" and into customer projects. She has been able to reach back to other library staff and coordinates their work in support of her current customer group. The Senior Research Analyst encourages staff to volunteer for focus groups run by the Marketing Group and to hand-deliver research to customers. Both embedded librarians participate in a monthly conference call with embedded librarians at company plant sites. They shared a concern that these positions are not valued or used optimally to the company's benefit because they tend to be:

- Local, one-off positions;
- Do not fit easily into the plant site job classification scheme; and
- Usually placed on the bottom rung of the local organization.

Both embedded librarians suggested that the embedded program overall and local information services would be strengthened if these positions were incorporated into a single organizational structure serving the company's global information needs.

Individual Embedded Positions Today

Both the Senior Research Analyst's and the Research Analyst's functions have changed markedly over the last 5 years. The Senior Analyst now splits her time between her embedded functions and a new role as Account Manager, soliciting allocation funding from the business platforms. After the OHS library was downsized, the Research Analyst worked for more than 3 years embedded in a Market Research task team involved in all aspects of managing the introduction of a pesticide product. She only recently moved to the Central Library to work on special projects. Today she is embedded in content management projects for four competitive intelligence teams.

Although both are attached to the Central Library, both librarians have retained distinguishing aspects of their original, embedded roles. In particular, each described non-traditional relationships with their customer groups, including:

Full partnership in the groups they serve, reversing the traditional client/customer relationship;

Co-responsibility for team's objectives and accountability for outcomes;

For the Senior Research Analyst - participation in all aspects of the Textile & Fiber business: focus groups, research discussions, new group acquisitions;

For the Research Analyst - equal partner at the table, participation in customer groups' global conference calls to stay abreast of current issues; participation in all aspects of the project team research and business discussions;

Interaction with and outreach to all levels of the customer group;

Direct participation in the work of their groups: e.g., textile test trials, walking the corn fields;

For the Senior Research Analyst – participation in customer group's professional organizations

The depth of their integration into their groups directly affects the depth of their work product. As a result of her embedded role, the Senior Research Analyst communicated directly with the FTC to change the name of fabric to a globally consistent term, improving the supply chain processes. The Research Analyst's work on the Market Research team was so successful that it has become a "best practice" to include an information professional on all product launch teams.

The Senior Research Analyst's remains a specialist in textiles and fibers, now embedded with the company's bio-fibers and advanced fibers businesses and continues to produce the globally distributed, textile news product and to be highly involved in business's regulatory work. She also plays an embedded role in the organization that acquired the company's textile business, as a consultant involved in the transfer of propriety documents to the new entity.

As a part of the Central Library and a specialist, the Research Analyst is tasked with finding new projects and project teams to collaborate with. The competitive intelligence team within a platform found itself with a limited resources and infrastructure and in need of both content and structure for current intelligence. The Research Analyst now fills that function, identifying, selecting and populating a CI databases that she structured and manages. Other content management work includes tagging/taxonomy, access controls/permissions, and copyright/IP compliance for the CI Database.

Success Factors

The embedded librarians' contributions to the organization are reflected in the accomplishments described above, increasing demand for services (the Senior Research Librarian continues to work as consultant for the acquiring company; the Research Analyst's has needed to bring in other librarians to meet demand); and best practices instituted (another best practice modeled on work contribution is the practice of putting an information professional on all teams reviewing the acquisition of small companies.

The Business Manager sees the value of embedded services in the level of service I&CT delivers to the company and in the willingness of business platforms to pay for this

specialized domain knowledge. The CI Manager sees multiple benefits in embedded services:

- Ability to engage the embedded librarian in a new project from the start, enabling her to understand and structure the project;
- Depth of knowledge, enabling the embedded librarian to determine what is and isn't important for inclusion in the database;
- Ability to "hire" internal expertise to supplement a thin staffing structure for critical projects.

Both embedded librarians serve as conduits to the resources in the Central Library and their parent organization, providing a level of service that would not be available through traditional library roles. The CI manager noted that the embedded librarian has brought in and manages additional professionals when the need arose.

The two embedded librarians consider these to be critical factors in their success:

- Management integration and support;
- Executive champion/mentor;
- Relationships with the groups: "We see ourselves in a community;"
- Finding a place at the table and consistently showing up;
- Full participation in project teams and mutual responsibility for achieving objectives;
- "Breaking bread" with the group/team/etc. and socializing;
- Taking on non-traditional roles and being visible in them;
- Passion for the work, commitment, not treating it as a 9-5 job;
- Seeing and treating yourself as a professional;
- Being an equal colleague with a unique set of skills and knowledge;
- Gaining domain expertise outside a traditional library environment;
- Presentation skills and curiosity;
- Reaching out to customer/colleagues with something they value (e.g., information).

The Business Manager and the CI manager consider these characteristics to be critical success factors:

- Proactive;
- Depth of technical knowledge;
- Business knowledge;
- Understanding of the group's information needs;
- Information source expertise (e.g., knowing where to find needed information);
- Personal qualities ("not shy").

Future

A number of opportunities exist for expansion of the embedded program.

The two embedded librarians and the Business Manager noted that there are unmet needs within the company for embedded services.

Not all business units are equally served by the embedded services program; some are aware of the inequality in service received from I&CT.

The company is focusing on increased collaboration among and within business

platforms. "Collaboration creates greater opportunities for the entire company and increases our productivity at the same time."

In addition, all consider these areas good candidates for the expansion of embedded services:

- Competitive Intelligence;
- Marketing; and
- Business R&D.

Despite these opportunities, there are a number of concerns about:

- Sustainability and scalability of the existing embedded services;
- The embedded program largely rests on two individuals: one working at capacity and the other with dual embedded and library functions;
- Both embedded librarians may be close to retiring and there are no visible succession plans in place;
- Declining resources; and,
- Lack of staff with requisite expertise.

Downsizing led to a loss of approximately 1/3 of the library's staff, including 4-5 embedded positions. Restrictions in place inhibit the Central Library from expanding staff numbers. It was noted that some librarians are hesitant to move into embedded roles: the Business Manager's intention was to increase the number of embedded roles but was not able to accomplish (perhaps because of a lack of "takers."). A potential workforce, the plant site embedded librarians, are tied to their geographical locations.

Despite the constraints on resources, a demand may be rising from a global workforce that is urged to act as one workforce. An important element of the demand is for nontraditional responsibilities, as illustrated in the recent "best practices", cited above, to include information professionals on business units' teams and in the Senior Research Analyst's prominent role in organizing the company's research technology symposium. Existing librarians' hesitancy to take on non-traditional roles will become a constraint on future growth.

Site Visit Interview Script

Models of Embedded Librarianship Phase 3 Interview: Embedded Librarian

Organization Name:

Location:

Date:

1. Interviewee Data - Basic (ask all or confirm important points from survey)

Name:

Position title:

History in the Organization

Years employed by the organization:

Position changes: (e.g, have you always been in the role of Library Director?)

2. Tell us about your work. For example, who are your customers and how many; what services do you provide to them; what are you working on right now; how do you interact with your customers?

3. Description of the Organization

Size of Org (e.g., number of employees, number of offices):

Locations (e.g., North America, U.S. only, global, etc.)

Organizational structure:

4. Tell us about the Library Organization

Staff size:

Location: Where are others located?

Support: Who supports your work? How?

Communication and Interactions: With other Embeddeds? With other librarians in the organization?

Services to non-customer groups?

5. History of Embedded Services

How many years have EL services been in offered in the organization

How were these services initiated?

Who took the first step? Where did it start (e.g., with a specific customer group)?

Was there anything in writing, such as an agreement, a memorandum of understanding between departments?

How was the embedded librarian integrated into the customer group?

What were the initial tasks/functions?

Can you characterize the relationship between the EL and the customer group? ...the EL and the Library?the EL and other librarians w/in org?

6. Embedded Library Services Today

Description of organization and management of embedded library services now (e.g., who supervises, who pays salaries, who performs evaluations,)

Where are they located? (e.g., located with customer groups?with library group?

On average, how many customer groups does each EL work with? How are assignments made?

Is more than 2 EL assigned to work with a single group?

How are decisions made to increase numbers to a single group? ...to assign an EL to a new group?

Have #'s been increasing over the last 2-3 years? (# of new groups provided service, # of EL's, # of groups each EL handles): Increasing (per survey)

Training and education – any requirements?

7. Other Changes Over Time

Changes in services provided over time? What's been added; what's been eliminated? Increase or decrease in demand?

Demand? How is demand tracked and evaluated?

Interactions with customer groups, e.g. more, type, quality?

Funding from customer groups, e.g. same or changed over time?

8. Success Factors

In your estimation Has the program been successful? Place on it a scale of 1 – 5, with 3 being right in the middle – where would you say your orgs program would be?

Per survey: very successful

How is success evaluated and determined? How do you and the organization know the program is successful? Measures in place? Reports to customer groups?

What do you do to insure success?

What benefits does the organization recognize from the program? How is that communicated to org's management?

What benefits are there to the library org from the EL program?

What's the downside – if any? What are the problems?

9. The Future

Outlook and future plans for information services: embedded and otherwise

10. Wrap-Up

Anything we haven't asked that you think we should know? What advice would you give to a colleague embarking on an EL program?