Improving, Expanding and Maintaining Momentum in an Established ETD Program

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ABSTRACT

This paper will present one NDLTD member's experience in improving, expanding and maintaining the momentum in its Electronic Thesis and Dissertation (ETD) Program. The ETD Program at Florida State University, initially a pilot with several participating academic departments in Fall Semester 2002, expanded campus-wide for all graduate theses and dissertations in Fall Semester 2003. This paper will specifically address issues that arise during the formative stages of a new ETD program such as improving support for ETD creation and submission, expanding training support, inviting and incorporating user feedback into ETD workflow, and employing strategies to increase ETD online access. Major emphasis will be given to the mechanisms used to expand and improve the Florida State University ETD Program and will describe the importance of using constituent feedback to sustain momentum in the program.

1. INTRODUCTION

Following a pilot involving three academic units Fall Semester 2002, that was expanded to 25 academic units in Spring Semester 2003, the Florida State University first initiated a campus-wide effort to communicate the intention of the university to convert from submitting a hard copy of the thesis/treatise/dissertation to an electronic submission, then implemented the mandatory submission of electronic theses and dissertations (ETD) beginning Fall, 2003 (Harrison *et al.* 2004). This paper tracks the progress and improvement of the ETD process into a mature program that is continually expanding and maintaining its momentum through the shared communication of students, faculty, administrators, and staff at Florida State University.

2. COMMUNICATION STRATEGIES

After receiving the approval of the FSU Provost and the Graduate Policy Committee, and prior to the beginning of the ETD pilot in Fall Semester 2002, the FSU ETD Committee met with the three academic units participating in the pilot (English, Physics, and Music) in order to elicit input from faculty and graduate students in those departments. The interaction and feedback during those initial meetings generated valuable ideas that led to the establishment of several new services. These included PDF conversion training for students, assistance for ETD discipline-specific needs (e.g., Music), the availability of computers equipped with *Adobe Acrobat Distiller* in the University Libraries and in the University supported computer labs and affordable *Adobe Acrobat Distiller* software for both departmental and student purchases. Additionally, to fulfil requests to continue the practice of providing a copy of the dissertation/treatise/thesis for the graduating student and major professor, the Office of Graduate Studies began producing a personalized Compact Disc (CD) of the ETD for each student and major professor. The master's student's CD and the doctoral student's CD included an insert featuring the formal regalia designating the degree awarded.

Furthermore, it became clear to the ETD Committee that this type of pro-active communication strategy would be helpful to the ongoing development of the overall project. This lead to a commitment to conduct town hall meetings with all academic units prior to the mandatory submission deadline in Fall Semester 2003 in order to assess the further needs of the university community in the transition to the electronic submission process. The town hall meetings were usually brief but included faculty and graduate students from each College, School, or Department and were both educational in nature and interactive for the representatives of each unit. While time consuming for members of the ETD Committee, this ensured some degree of acceptance and ownership of the new ETD workflow process by the representatives of each unit.

By Fall Semester 2003, the mandatory submission of ETDs became university policy, and was implemented with few complaints by campus constituents. The ETD Committee continued its stance of pro-active communication via town hall meetings throughout the 2002-2003 academic year: an ETD On-line Exit Survey for all graduate students participating in the program, the University Libraries Graduate Student Satisfaction Survey, and other interaction with students and faculty (e.g., E-mail, workshops). For example, from the town hall meetings, the request to require single or 1.5 spacing for ETDs was suggested and implemented into the ETD requirements, with the understanding that a committee could request an exception if needed for a specific discipline. Noting from the ETD On-Line Exit Survey that students wanted the opportunity to purchase additional personalized CD copies of their ETDs, the Office of Graduate Studies worked closely with the university administration to provide the ETD-CD purchase option. Similarly, due to student comments on the exit survey, the Office of Graduate Studies began confirming by E-mail when the ETD clearance advisor successfully received and approved an ETD.

3. PROGRAM DEVELOPMENT

Fine tuning the FSU ETD process to a mature program involved the constant collaboration of the Office of Graduate Studies and the University Libraries. Using feedback garnered from ETD Committee communication strategies from faculty, students, and staff working with ETDs, the University Libraries customized the Virginia Tech ETD-db System for FSU students in order to submit their ETDs electronically to the Office of Graduate Studies, instead of the sometimes

cumbersome process of submitting the manuscript by E-mail. The Office of Graduate Studies placed required ETD submission forms (e.g., ETD Access Agreement Form, *Survey of Earned Doctorates*, Final Clearance Checklist, ETD Exit Survey, University Libraries Exit Survey) on-line where they could be completed and submitted, as well as Microsoft Word and LaTeX templates to assist students in formatting their ETDs. Links were added to the FSU ETD Web site to the *Academic Journal Policy* Guidelines, copyright permission assistance, and the Adobe Acrobat Web site for the optional five, free PDF conversions per student. Further, the Office of Graduate Studies expanded its face-to-face ETD tutorials to an on-line option for PDF conversion. Therefore, students anywhere in the world could submit their ETDs for the approval process. Additionally, the Office of Graduate Studies and the University Libraries initiated one-on-one assistance for students with unique conversion situations. This was accomplished by offering ETD conversion consultation services through the University Libraries' New Media Center.

1. Case Study in Program Development: College of Music

Further elaboration on the development process can be garnered from a case study of the FSU College of Music. During the pilot phase of the program, it was evident that there would be initial challenges within the College of Music for ETD creation. This included ETD conversion utilizing two specific music notation programs (Finale and Sibelius). Also of interest to the students was the variety of media formats that could be used as supplementary material and secondary manifestations of the ETD.

Instead of ignoring or postponing these issues, the ETD Committee formed a technology working group to address these issues. The working group developed a set of guidelines for media types and also worked with the College of Music to support PDF conversion from music notation software within their computer lab and the University Libraries' Media Center to support music notation software within their ETD conversion lab. This allowed inclusion of several media types that are known standards (mp3, midi, wav) and are also easy conversions from within the music notation software mentioned above allowing for a much richer music ETD experience. By notating original scores and or copyright free segments of music within such a notation program the student is able to generate both a print formatted rendition as well as a sound file for inclusion with the ETD.

4. ONLINE ACCESS

In addition to the pro-active communication strategies that were employed for implementation and development of the FSU ETD Program it was also important that parties outside of the FSU community in academia, industry, and government could discover and access this growing collection of scholarly output. In order to facilitate this access the University Libraries developed a three tiered strategy for embedding the FSU ETD Collection within the known Web and within familiar scholarly finding aids. In addition to typical Web OPAC availability and citation within Proquest's *Digital Dissertations*, FSU ETDs are made publicly available utilizing Web Search Engine Triangulation, ETD Full-Text Searchability, and OAI-PMH provision.

1. Search Engine Link Triangulation

With a new ETD program it is not always certain how quickly Web search engines will begin to index the content contained within the site. However, it is well documented that search engine use is the second most popular online activity besides email (Jansen & Pooch 2001) and is now the likely way that most users will identify an ETD for use.

A major strategy behind being found on the Web is to have the ETD site and its content prominently linked from the .edu domain and linked from several subdomains within the .edu domain. This method of link citation over the Web is but one factor in many search engine indexing strategies (Brin 1999) and in this paper will be referred to as Link Triangulation. The ETD-db software (VT 2005) does an excellent job of this because of the static html pages that are generated both for browsing the collection and for accessing individual ETD titles. However, this alone will not guarantee that an ETD site will be readily indexed.
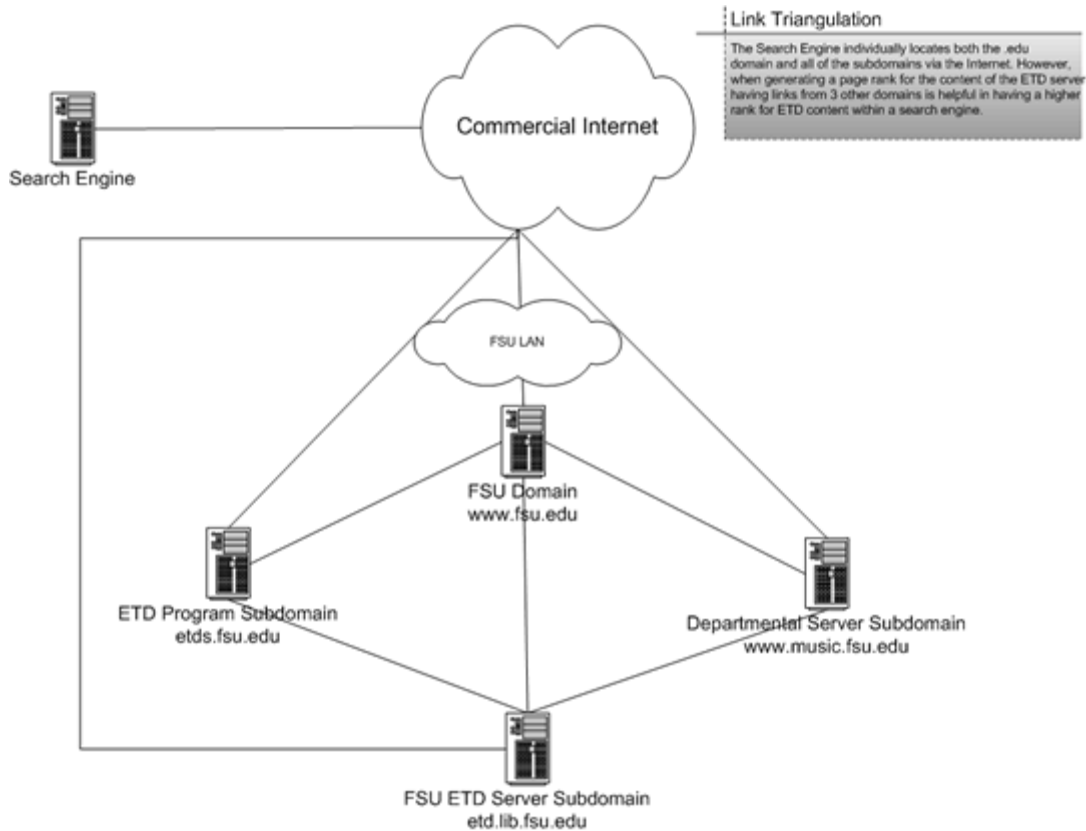

Figure 1

In order to have a Web site indexed quickly by Web search engines it is helpful to use several subdomains (Wikimedia 2005) from within a .edu domain to link to both the ETD Web site and some of its content. An example of this *triangulation* within a domain is demonstrated in Figure 1 above. The FSU ETD Web Site is linked from both the fsu.edu domain and other university subdomains as well as having individual ETD content linked from individual college and school subdomains. This also extends to having individual content linked from individual or academic author Web sites or academic credential sites from other university domains.

This strategy alone will not guarantee success. However, by combining this type of strategy with low cost advertising in such programs as Google's Adwords (Google 2005) or Yahoo's Search Marketing (Yahoo 2005), it enables a quick and inexpensive model for ETD discovery in a variety of search engines. For this component of the Search Engine Link Triangulation Strategy, the University Libraries purchased a Google Adwords campaign for the term *electronic theses and dissertations*. The campaign was set for the lowest dollar amount threshold per hit which

ended up costing several dollars a week for a one month time-frame. This in turn forced Google to index the ETD site within a 2-day period and enabled FSU ETD full-text searching within the Google search engine and within several other search engines that were utilizing the Google index. These included but were not limited to Amazon.com, Yahoo.com, A9.com and Teoma.com.

2. ETD Full-Text Search

In working with several open-source full-text search mechanisms the University Libraries opted for a commercial one that was already in use for searching ETDs online, namely the Google search. This was accomplished using the Google Search Appliance (Google 2005). The appliance was purchased to enable full-text searching of ETDs as well as of the various Web sites of the University Libraries from within our own network. This option is extremely important for sites that have restricted use ETDs as the engine can offer full-text searching of PDFs without enabling the HTML optical character recognition conversion view that is done when a site is indexed by Google online.

While different from many other commercial and open-source search engines, the Google Search Appliance is hardware-based and offers a turn-key solution for local searching of over 220 Web-based digital object types. In its first year of deployment this search tool has yet to be exploited to its fullest capacities by the University Libraries but did offer overnight setup for full-text indexing and ETD searching. Future tests with the search appliance include experimenting with PDF formatting for optimal ETD search and discovery within the Google search strategy in hopes of standardizing the formatting of all PDFs for the FSU community.

3. OAI-PMH Provision

No mention of ETD dissemination can be broached without mention of the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). Having first brought the FSU ETD Collection online using the ETD-db, it enabled us to use OAI v. 1.0 with the built in provider script. Since that time the University Libraries have upgraded to OAI v. 2.0 and are currently testing this mechanism with an enhanced LOCKSS (Reich 2001) software package for use in a shared ETD preservation partnership among participating Association of Southeastern Research Libraries (ASERL 2005).

OAI provision is a helpful tool for ETD discovery and there is still a need for more development and refinement of tools for OAI harvesting and discovery mechanisms. Such programs as the Greenstone Digital Library (2005) are moving in this direction and need to be encouraged to develop more *low-threshold* adoptable tools. As more research institutions deploy these tools, it will enable further dissemination of the scholarly output of publicly available ETDs and as in the case of the LOCKSS project mentioned above, offer modular service additions to current ETD systems. This is extremely important due to the inconsistencies that abound in document format and metadata specificity between institutional ETD implementations.

5. CONCLUSION

It is clear that the improvement, expansion and maintenance of an established ETD program is very much a collaborative process. At the Florida State University, this process is a highly iterative one between the Office of Graduate Studies, the University Libraries and the graduate students and faculty of the institution. Leveraging the skills and expertise of all of these constituent groups has enabled the growth of a very successful but young ETD program.

In the less than three years since the beginning of the FSU ETD Program, the university has seen a more than 50% growth in ETD online availability due in large part to the mandatory nature of our program and yet this growth has enabled mechanisms for ETD program enhancement based on strategies of pro-active communication, constituent inclusion, and technological investigation.

Future enhancements to ETDs at FSU include regional and national ETD digital preservation alliances as well as new open-access publication opportunities for graduate students at FSU. Furthermore, there is a strong interest in utilizing current survey mechanisms to identify the role of the FSU ETD Program in graduate student recruitment.

6. REFERENCES

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