MEMORANDUM

TO: Internship Supervisor and Dr. Ryan Weber

FROM: Student

SUBJECT: EH 602 Proposal: Researching how Northrop Grumman can Move Print Data (and XML) into an IETM – the Process and the Easiest Way to Accomplish This.

DATE: February 15, 2008

OVERVIEW

This proposal is a formal request for approval to proceed with an analysis of the process of moving print (and XML) data into an Interactive Electronic Technical Manual (IETM), specifically in the context of the Northrop Grumman Technical Publications Division. This research will cover the following aspects of IETMs:

1) Research the types (5 classes) of IETMs (what they are, how they function)
2) Determine the kind of software/computer programs used for IETMs
3) Find out how an XML document can be transferred into an IETM

This research will benefit Terry Linton (Documentation and Graphics Manager at Northrop Grumman), as well as the other Northrop Grumman technical writers and editors in the Technical Publications Division. The purpose of this research is to provide writers with the information that they need so that, if tasked to create an IETM from an XML document, they will know how to accomplish this.

PURPOSE

The purpose of this research is to provide writers with detailed guidelines on how to transfer print and XML data into an IETM. Specifically, this report will cover the following questions:

- *What* are the types (5 classes) of IETMs and how do they function?
- *What* software/computer programs do IETMs require?
- *How* can an XML document be transferred into an IETM (what is the process)?

CLIENT/AUDIENCE

The client for this project is Terry Linton, the Documentation and Graphics Manager in the Missions Systems Sector of Northrop Grumman, in Huntsville, AL. The secondary audience for this report will most likely include technical writer, Greg Vannatter, and technical editor, Sherry Anderson, with whom I will be working. In addition to Northrop Grumman employees, Dr. Rose Norman and the students in her EH 502 Problems in Technical Editing course will also be an audience as I present this research to the class.

SCOPE AND APPROACH

I will collect and analyze data for this report through both primary and secondary research. The secondary research for this project will consist only of material (scholarly journals, books, etc.) that is relevant to determine the value of IETMs, in the context of the Technical Publications division at the Missions Systems Sector of Northrop Grumman. The primary research will consist of email interviews with Valerie Davis, who is the XML Lead of the Data Integration/Technical Publications division of Yulista Management Services, Inc. In addition, I will review current Northrop Grumman Technical Manuals.

This project will seek to answer the following primary questions, which are paired with their respective secondary questions:

1. WHAT are the types (5 classes) of IETMs and how do they function?
   Secondary Questions: What are the different kinds (levels) of Electronic Technical Manuals? How are IETMs used by organizations and soldiers in the Army? How are IETMs created? What are the advantages/disadvantages of using IETMs? What kind of IETM does Northrop Grumman want to implement?

2. WHAT software/computer programs do IETMs require?

Secondary Questions: What companies have created IETMs, and what kind of computer programs/software did they use? What technology is available for creating IETMs and how reliable and affordable is it? What software would be most appropriate for Northrop Grumman's purpose?

3. HOW can an XML document be transferred into an IETM (what is the process)?

Secondary Questions: How does XML function in an IETM? What are the specific steps that should be taken to transfer XML data into an IETM?

QUESTION 1: WHAT are the types (5 classes) of IETMs and how do they function?

Approach: Scholarly Research
Interview with Sherry Anderson (to determine the type of IETM that Northrop Grumman will use)

QUESTION 2: WHAT software/computer programs do IETMs require?

Approach: Scholarly Research
Reviewing current Northrop Grumman Technical Manuals
Email Interview with Valerie Davis

QUESTION 3: HOW can an XML document be transferred into an IETM (what is the process)?

Approach: Scholarly Research
Reviewing current Northrop Grumman Technical Manuals
Email Interview with Valerie Davis

FEASIBILITY / LITERATURE REVIEW

Preliminary research indicates that information about IETMs is available. Many resources are available though the UAH Library web site and through online research sources. In addition, I plan to review Northrop Grumman's information on XML, IETMs

and current technical manuals. Finally, I expect that email interviews with Valerie Davis will be a valuable source for information about both XML and IETMs (especially the application of IETMs in an organization).

I have already reviewed several scholarly articles, and have several more articles that I believe will provide valuable information. These articles define IETMs, describe the process of creating them, and discuss the advantages of using IETMs. Because the technology is relatively new, many organizations are developing IETMs that perform company-specific functions.

According to Terry Linton, the Department of Defense (DoD) originally used paper technical manuals; however, DoD is now requiring that all Northrop Grumman technical manuals be in electronic form. In the article "The Move to Paperless Technical Manuals in the US DoD," Eric L. Jorgensen states that the DoD collection of technical manuals is one of the largest inventories of paper publications in the world (1996). These documents are used to support many weapon systems in the DoD and are used for maintenance, training, and logistic support. Paper manuals are bulky, costly to produce, confusing to follow, and are often out of date (Brown 1993; Jorgensen 1994). In addition, the printing, storage, and distribution of paper manuals required a huge allocation of DoD resources (Jorgensen 1996). They are inconsistent or unclear in certain sections and they require a great allocation of resources to produce (Brown 1993; Jorgensen 1994; Jorgensen 1996).

Because of these problems with paper manuals, DoD began looking into the possibility of creating technical manuals using paperless digital information technology. One of the main advantages of electronic documentation is that it is less costly and more effective and efficient (Jorgensen 1996). Electronic manuals can be updated easily, customized for particular clients, and are flexible for the user (offer search methods, indexes, and layout possibilities) (Barnard and Reiss 2006).

IETMs are a relatively recent development and, as organizations continue to implement them, the possible uses and functions IETMs will most likely expand as technology improves. Recently, electronic documentation has been changing profoundly to incorporate interactivity, multi-modality, contextualisation, integration with operational systems, integration with training materials and systems, new hardware

devices and ubiquitous computing (Barnard and Reiss 2006). IETMs employ sound, video, text to speech translation, measurement probes, and other new multimedia technology to make the manuals truly "interactive" (Brown 1994; Jae-Jin et al. 2000). Furthermore, research has also shown that IETMs can also interact with other IETMs to share "lessons learned" and information that the electronic manual may be lacking (Shannon et al. 2006). Research indicates that IETMs may give the term "technical manual" a new meaning and expand the field of technical communication.

QUALIFICATIONS

As a graduate student finishing the Certificate in Technical Communication at UAH, I have researched the field of technical communication, especially technical manuals and cutting-edge technology that impacts the scope of technical writing. In addition, I have just started an internship with Northrop Grumman and will be working in the Technical Publications division. My supervisor, Terry Linton, suggested that I research IETMs, because the Department of Defense (DoD) is now requiring electronic documentation. Researching this topic will be valuable to my work at Northrop Grumman this semester.

SUMMARY

This proposal outlines the course I plan to take to meet the requirements of literature and primary research on IETMs. I have set forth three major questions that I propose to answer and have detailed the steps of my research in the enclosed schedule (see Enclosure 1). I believe that Terry Linton, other Northrop Grumman employees, as well as the students in the EH 502 class, would benefit greatly from this research.

Enclosures:

1. Schedule

REFERENCES

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ENCLOSURE 1

SCHEDULE FOR EH 602 PROPOSAL DRAFT

TASK	COMPLETION DATE
LITERATURE AND RESEARCH REVIEW	
1. Conduct on-going research; review journals and books on IETMs, and current NG Technical Manuals	Feb 4-Feb 14
2. Compile and assess research	Feb 14-Mar 10
PRIMARY RESEARCH	
1. Turn in FINAL RESEARCH PROPOSAL	Feb 14
2. Interview Valerie Davis about how her company uses IETMs and how to transfer XML into an IETM	Feb 4-Mar 10
3. Analyze interview results and data review NG technical manuals	Feb 14-Mar 10
4. Turn in MIDTERM (Comprehensive Edit)	Feb 25
WRITE FINAL REPORT	
1. Synthesize research and apply to Northrop Grumman context	Feb 14-Mar 10
2. Turn in FINAL REPORT DRAFT	Mar 10
3. Make revisions to draft	Mar 10-Apr 21
4. Turn in FINAL RESEARCH REPORT	Apr 21
5. Turn in FINAL EXAM	Apr 28