MARITECH ASE Project 2000928

A Shipbuilding and Ship Repair Virtual Center for Crosscut Initiatives

CROSSCUT RESOURCE CENTER
PRELIMINARY OPERATIONAL MODEL
Change 1

August 28, 2000

Prepared by

Electric Boat Corporation

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Added Section 6.8	1	August 28, 2000
Deleted Research Service from Table 1, Appendix A	1	August 28, 2000

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1.0   INTRODUCTION

1.1   Document Purpose

The purpose of this document is to provide an initial operational model for the Crosscut Resource Center. The Crosscut Resource Center is a response by members of the U.S. shipbuilding and ship repair community to provide a portion of the support and resources necessary to revitalize the industry. The Crosscut Resource Center is a specialized web site aligned with the NSnet.com web site currently serving the industry.

1.2   Background

The National Shipbuilding Research Program (NSRP) Advanced Shipbuilding Enterprise Strategic Investment Plan recognizes the importance of addressing people and organizational issues in revitalizing the U.S. shipbuilding and ship repair industry. This recognition is reflected in the creation of the Crosscut initiative. Education/training, organizational change, human resources, and technology transfer are identified as key elements impacting the successful implementation of industry change. These requirements cut across all of the major initiatives in the Advanced Shipbuilding Enterprise (ASE) program.

Often, however, these crosscut elements and their potential impact are not well understood or accommodated by industry personnel responsible for developing or implementing shipyard technological or process changes. While necessary resources and assistance may exist in crosscut areas to help these personnel, they often are not aware of this support. In addition, the supporting resources frequently are not readily available or well organized for use by personnel who are not professionals in crosscut areas.

Addressing these key elements also is a problem for crosscut professionals. These professionals are confronted with limited resources in addressing crosscut needs at a time when meeting these needs is important to the industry's revitalization efforts. At present, there is no organized means within the industry for helping crosscut professionals to easily obtain resources for innovative crosscut solutions or to address common, emerging crosscut problems. In addition, the entire industry is impacted by an inability to efficiently collaborate and communicate with each other and with the extended community of industry partners. The lack of effective communication mechanisms also hinders the transfer of new technology and processes across the industry.

In April, 1999, a one year contract was awarded by the NSRP ASE program to a team of six U.S. shipyards and one university to design a virtual resource center for crosscut needs. The six shipyards included Avondale, Bath Iron Works, Cascade General, Electric Boat, NASSCO, and Todd Pacific. The shipyard team determined that the Crosscut Resource Center probably was best developed in conjunction with the existing NSnet web site, and as a result, solicited the University of Michigan Transportation Research Institute (UMTRI) as a project team member. The team's plan for the virtual resource center called for a three year implementation effort. During the first year, the resource center would be designed. During the following two years, the resource center would be developed, installed, and evaluated. In March 2000, a two year contract was awarded for the development and evaluation phase of the project, with Jeffboat shipyard replacing NASSCO as a team member. The project effort will conclude in March 2002.

The general approach of the project is to integrate implementation activities as the project progresses, rather than to depend only on transition efforts to industry as the project comes to a close. It is assumed that ongoing involvement by the industry in the development and evaluation of the Crosscut Resource Center will result in a capability that the industry wants and can use. The development and evaluation activities will cover both the Crosscut Resource Center services themselves and the Resource Center operation and management. A Preliminary Operational Model will describe the operation and management of the Center during the project.

The members of the project team intentionally have chosen to concentrate on the creation of a Crosscut Resource Center environment, and not just on the completion of a discrete set of needed crosscut applications. The purpose is to establish a resource center capability that the industry reasonably can be expected to further populate and sustain on its own. The project will develop specific guidance for the transition and transfer of the Crosscut Resource Center to the industry for continued operation and maintenance. A Final Operational Model will propose the operation and management mechanisms of the Crosscut Resource Center after the project.

1.3   Document Overview

This Preliminary Operational Model summarizes the plans and approach for operating and maintaining the Crosscut Resource Center during the Crosscut Resource Center project. The Model has six sections and an appendix: Introduction, Reference Documents, Crosscut Resource Center Description, Crosscut Resource Center Management, Crosscut Resource Center Policies, Crosscut Resource Center Operation and Maintenance, and Appendix A - Purposes of Crosscut Resource Center Services.

2.0   REFERENCE DOCUMENTS

a. **Crosscut Resource Center Architecture**, April 28, 2000

This system architecture specification describes the system level requirements and architecture for the Crosscut Resource Center.

b. **Crosscut Resource Center Design Guidelines**, April 28, 2000

This document provides preliminary design specifications for the Crosscut Resource Center.

c. **Crosscut Resource Center Program Management Plan**, May 23, 2000

This document provides the Program Management Plan for the Crosscut Resource Center project.

d. **Crosscut Resource Center Software Development Plan**, June 28, 2000

This document summarizes the software development plans, procedures, and management approach for the Crosscut Resource Center.

3.0   CROSSCUT RESOURCE CENTER DESCRIPTION

The Crosscut Resource Center will provide a means by which the U.S. shipbuilding and ship repair community can obtain needed Crosscut resources and collaborate and communicate with one another. Figure 1 portrays a general concept of how the Crosscut Resource Center will work. Users can select one of twelve services that enable them to request materials or documents, to link to other web sites, or to conference or collaborate with other members of the industry and the industry's extended partners. The Crosscut Resource Center will combine the best of an online electronic information environment with human interactions and collaborations. Appendix A identifies each of the 12 services and describes the purpose of each service.
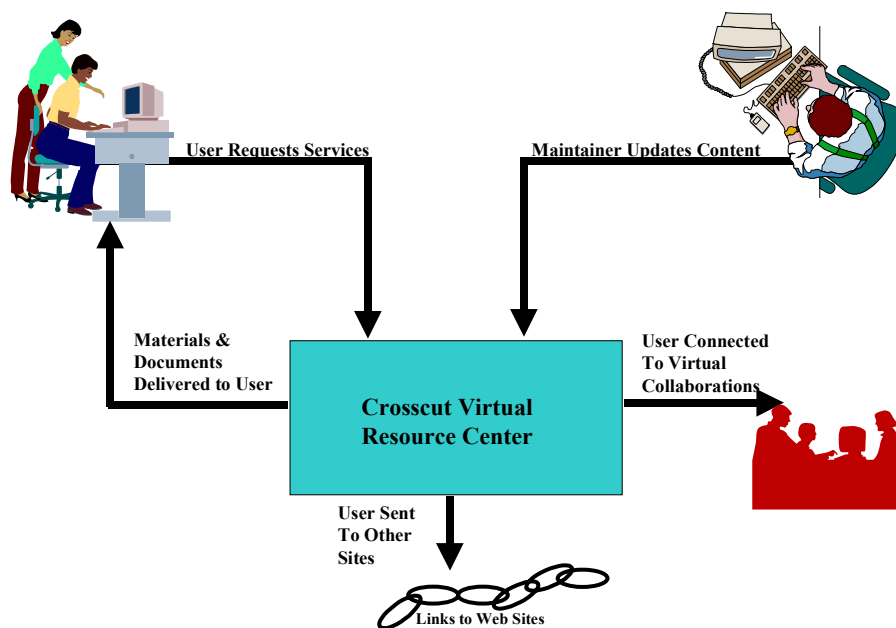

Figure 1. Crosscut Resource Center Concept

The Crosscut Resource Center will exist as a specialized environment aligned with the NSnet environment. NSnet services include online access of documents, a database of maritime-related Web links, a calendar of marine events, Web presence and support for the National Shipbuilding Research Program and other research projects, discussion groups, educational materials, and timely news information. NSnet is characterized by a general set of services useful to the shipbuilding and ship repair community. The Crosscut Resource Center, on the other hand, will provide users with information and services specifically organized from a Crosscut perspective.

The planned Crosscut Resource Center will be a "virtual" center. The Center will not be a building with an extensive staff where users gather to make use of the services and resources. Instead, a minimal infrastructure will exist to house the Center information resources and its online applications at a centralized site. A minimal staff will exist to maintain the physical infrastructure and operational software associated with the Center. However, the users of the Center will be "virtual users" distributed throughout the country. Human support advisors and consultants also will be located throughout the country. Likewise, subject experts responsible for the maintenance of information source content also will be distributed throughout the country. Figure 2 depicts the location nodes or "virtual sites" associated with the operation of the Crosscut Resource Center.
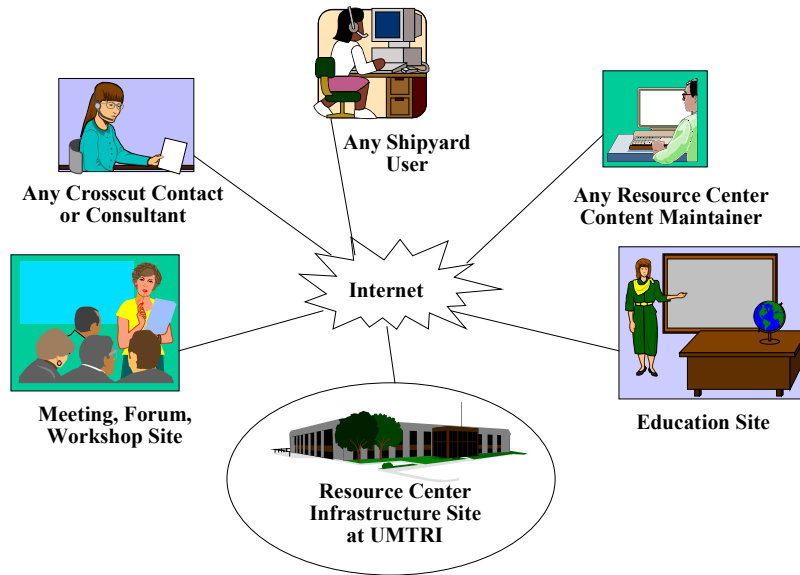

Figure 2. Crosscut Resource Center Locations

Existing personal computer assets at the shipyards or other user locations will be employed to access the Crosscut Resource Center. Personal computer assets also will be used by content developers to create and maintain data associated with individual Resource Center services. Computer facilities located at the University of Michigan's Transportation Research Institute (UMTRI) in Ann Arbor will be used to install, test, evaluate and operate the Crosscut Resource Center web environment. The UMTRI facilities will contain the necessary servers, LAN, and network connections to the Internet.

Figure 3 portrays the Crosscut Resource Center infrastructure shared with the NSnet web environment. Two of the servers in the environment are dedicated as web servers. One server acts as the main web server, while the other server maintains email lists and provides document storage and NSnet classroom conferencing on the web. A third server is dedicated as a database server. A fourth server is dedicated as a video server.
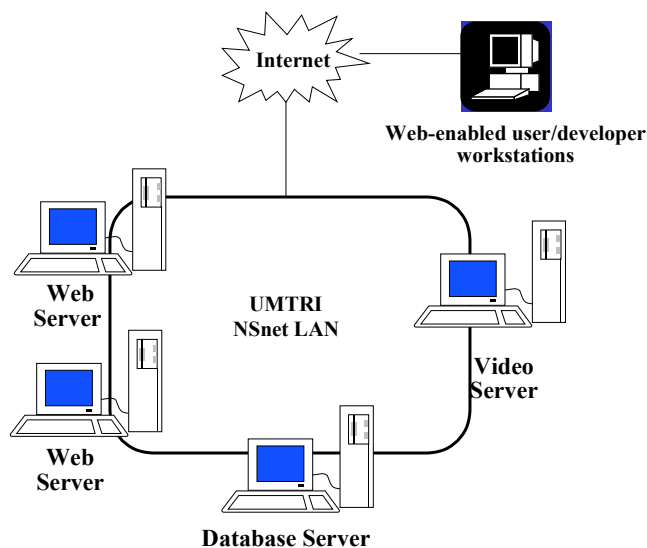
Figure 3. Crosscut Resource Center Infrastructure

Figure 4 depicts the Crosscut Resource Center network architecture shared with the NSnet environment. The NSnet servers are operating on an UMTRI local area network that is connected to the University of Michigan backbone. The backbone is connected via a service provider to the Internet. The connection between the UMTRI local network and the backbone provides 100 megabits per second bandwidth. The connection between the backbone and the Internet provides T-1 bandwidth.
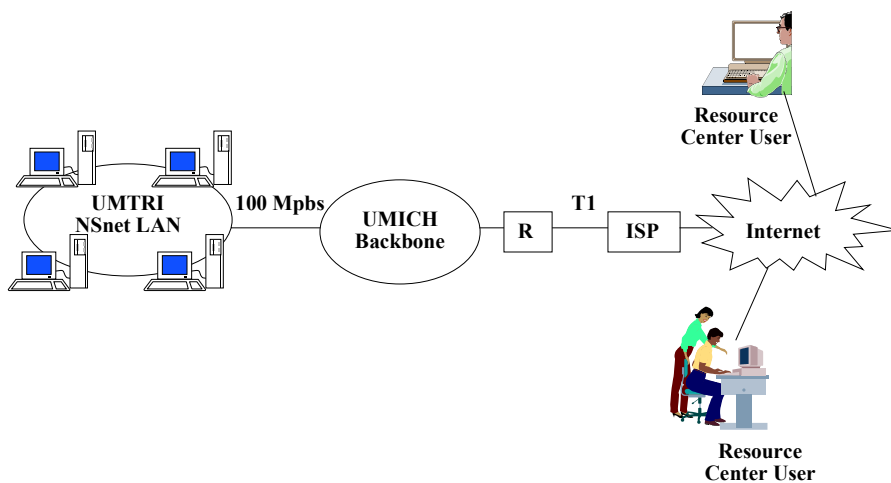

Figure 4. Crosscut Resource Center Network Architecture

4.0 CROSSCUT RESOURCE CENTER MANAGEMENT

4.1 Overview

As noted in section 1.2, the Preliminary Operational Model describes how the Crosscut Resource Center will be operated during the project. The intent is to test and validate both the Resource Center services and the operational mechanisms of the Center through an ongoing web site implementation. The Center management approach described in this section will be used to validate an administrative scheme for the Center. Toward the end of the project, the Final Operational Model will incorporate lessons learned from the web site implementation, and will recommend a management approach to be used for the Center upon conclusion of the project.

4.2 Management Transition

The management of the Crosscut Resource Center will transfer gradually from the project team to representatives of the U.S. shipbuilding and ship repair industry. This transfer will begin by instituting management mechanisms early in the project that incorporate participation beyond that of the project team alone. The project team will begin to relinquish sole responsibility for decision-making activities associated with the operation of the Crosscut Resource Center. However, during the project, the project team will retain final responsibility for project funds and the completion of deliverables associated with the Crosscut Resource Center project.

4.3 Management Organization

Figure 5 portrays the organization responsible for the management and administration of the Crosscut Resource Center during the conduct of the project. This organization will be in place by November 2000. The organization provides a framework that is conducive to transitioning the management of the Crosscut Resource Center from the project team to the U.S. shipbuilding and ship repair industry.

The management team for the Center will be led by an Industry Board. The Board will be made up of two members from the Crosscut Resource Center project team and three members from the U.S. shipbuilding and ship repair industry who are not involved directly in the project. Parties interested in the industry positions will be requested to submit a short nomination resume. A selection committee formed from members of the NSRP Crosscut panel will fill the industry positions from the submitted resumes. Industry Board members may come from any area of the U.S. shipbuilding and ship repair industry, and do not necessarily have to be crosscut professionals. It is anticipated that the Board will be composed of both crosscut professionals and non-crosscut professionals. After the conclusion of the project, the make-up of the Board will continue to consist of five members, but may or may not include former members of the project team.

The Industry Board will oversee the Crosscut Resource Center activities of the Web Site Administrator and Content Authors, and will interface with the Crosscut Resource Center Project Manager and the Crosscut Panel Chair. An appointed Board member will act as a liaison and board administrator for the Industry Board in the day-to-day activities of the Resource Center. The Web Site Administrator will manage and administer the day-to-day operations of the Crosscut Resource Center. The Web Site Administrator will be afforded a high degree of autonomy in dealing with the operation of the Resource Center. The Web Site Administrator will be appointed by UMTRI, the NSnet web site provider. The Content Authors will maintain content associated with the various services in the Crosscut Resource Center. The Content Authors will be assigned by the Crosscut Resource Center project team during the project, but will be

appointed by the Industry Board upon conclusion of the project. The Crosscut Resource Center Project Manager will coordinate the activities of the project and the Crosscut Resource Center with the Industry Board. The Crosscut Panel Chair will coordinate any panel activities that impact the Crosscut Resource Center with the Industry Board.
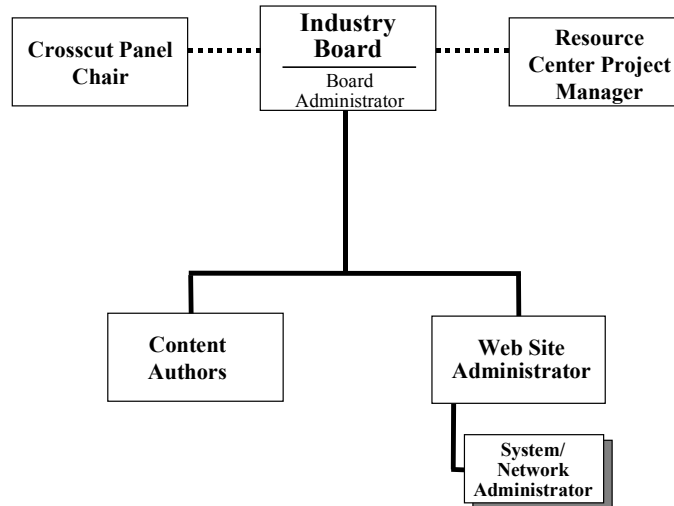

Figure 5. Crosscut Resource Center Management Organization

4.3   Roles and Responsibilities

<u>Industry Board</u>

The Industry Board will provide high level direction and oversight for the Crosscut Resource Center. The Industry Board as a whole will not be involved on a daily basis in the management of the Resource Center. Participation in the Board will require limited part time commitment (less than .05 man level). The responsibilities of the Industry Board as a whole will include:

- Oversee web site management strategy
- Oversee web site operation through quarterly reviews
- Oversee planning for future Resource Center activities and services
- Secure funding for the Resource Center (post project)
- Provide Configuration Control Board reviews

One of the Board members will be appointed to serve as the Industry Board's Administrator. This Board member will act as a liaison for the Industry Board in the day-to-day activities of the Crosscut Resource Center. The Board Administrator will be involved on a more frequent basis in the operation of the Crosscut Resource Center. Participation as the Board Administrator will require approximately a .10 part time commitment. The responsibilities of the Board Administrator will include:

- Facilitate communications among the Web Site Administrator, the Content Authors, the Industry Board, the Crosscut Resource Center Project Manager, and the Crosscut Panel Chair
- Expedite solutions to Crosscut Resource Center problems
- Coordinate activities of Content Authors

Web Site Administrator

The Web Site Administrator will manage the day-to-day operations of the Crosscut Resource Center. The Web Site Administrator will be involved on a daily basis in the operation of the Resource Center. The Web Site Administrator also will serve as the webmaster and primary contact for the Crosscut Resource Center. Participation as the Web Site Administrator for the Crosscut Resource Center will require approximately a .50 part time commitment. It is anticipated that the administrator also will serve in a complementary capacity with the NSnet web site. The responsibilities of the Web Site Administrator will include:

- Oversee the overall Crosscut Resource Center web site operation
- Oversee the activities of the System/Network Administrator
- Develop web site management strategies
- Support planning for future Crosscut Resource Center activities and services
- Provide guidance and technical assistance to Content Authors and Center users
- Ensure overall integrity of Crosscut Resource Center content
- Oversee publication of content on server(s)
- Create and maintain top level pages of the web site
- Disconnect inappropriate or burdensome links
- Perform Content Author responsibilities if required

System /Network Administrator

The System/Network Administrator will manage the day-to-day operations of the Crosscut Resource Center system and equipment. The System /Network Administrator will be involved on a daily basis in the operation of the Crosscut Resource Center. Participation as the System/Network Administrator for the Crosscut Resource Center will require approximately a .30 part time commitment. It is anticipated that the administrator also will serve in a complementary capacity with the NSnet web site. The responsibilities of the System /Network Administrator will include:

- Ensure the Crosscut Resource Center technical infrastructure is in place
- Manage the technical day-to-day operations of the web site servers, network, and equipment
- Review and enforce network security procedures
- Add and remove authorized users
- Conduct system back-ups and recovery
- Monitor system performance
- Monitor usage logs
- Install and test hardware and software updates

Content Authors

As noted above, the Content Authors will maintain content associated with the various services in the Crosscut Resource Center. The Content Authors will be involved on a frequent to as-needed basis in the operation of the Crosscut Resource Center. Overall participation as a Content Author will require varying time commitments depending on the respective service (less than .20 man level). The responsibilities of the Content Authors will include:

- Maintain content material
- Post content on the web site servers (as authorized)
- Ensure content conforms to Crosscut Resource Center policies
- Maintain standard sub-organization web pages
- Remove outdated content

Crosscut Resource Center Project Manager

As noted above, the Crosscut Resource Center Project Manager will coordinate the activities of the project and the Resource Center with the Industry Board. The Crosscut Resource Center Project Manager normally will not be involved on a daily basis in the management of the Resource Center, but will be involved as needed. Participation with the Crosscut Resource Center will be considered part of the Project Manager's job. The responsibilities of the Crosscut Resource Center Project Manager in the management of the web site will include:

- Provide Crosscut Resource Center quarterly budget status and service evaluation results to the Industry Board during the life of the project
- Forward Quarterly Center Management Reports as deliverables to ASE program management
- Keep ASE program management informed of the status of the Resource Center operation
- Ensure coordination of project Resource Center evaluations with the Web Site Administrator
- Ensure coordination of hand-off of fully tested Resource Center services to operational and maintenance status

Crosscut Panel Chair

As noted above, the Crosscut Panel Chair will coordinate any panel activities that impact the Crosscut Resource Center with the Industry Board. The Crosscut Panel Chair normally will not be involved on a daily basis in the management of the Resource Center, but will be involved as needed. Participation with the Crosscut Resource Center will be considered part of the Crosscut Panel Chair's job. The responsibilities of the Crosscut Panel Chair in the management of the web site will include:

- Ensure nomination and selection of Industry Board members
- Coordinate Panel-sponsored activities impacting Crosscut Resource Center
- Communicate Crosscut Resource Center benefits and needs to the industry

4.4   Reports

As noted in section 4.3, the Web Site Administrator will be responsible for the development of a Quarterly Center Management Report. The report will describe the operational status of the Crosscut Resource Center during the previous quarter. A report will be developed and delivered every three months, beginning in the last week of October 2000 and ending the last week of January 2002 (see Crosscut Resource Center Project Management Plan).

The Report will be delivered to the Project Manager and the Industry Board. The Project Manager will be responsible for forwarding the Report to the project team and the ASE Program Technical Representative (PTR) and ASE Program Manager. The Quarterly Center Management Report will function as a management tool for the project manager and team, the Industry Board, and the Web Site Administrator. The Report will provide input to the project's overall Quarterly Report. The Report also will support ongoing planning for the Crosscut Resource Center, and will provide input to the development of the Final Operational Model for the Resource Center.

Each Quarterly Center Management Report will include the results of system metrics maintained during the operation of the Center (see 6.2), including usage profiles for Center services. The Report will summarize the application updates and configuration management activities completed during the quarter. The Report also will summarize user feedback and system problem reports and describe the course of action to be taken in response to the user input. The Report will provide the operational status of the Center, and describe any equipment or facility problems encountered in the operation of the Center and the resolution of the problems.

4.5   Center Funding

During the project, the funding for the operation of the Crosscut Resource Center will be provided through the Crosscut Resource Center project. The budget for the Center will be the budget established and agreed to by the project team and the ASE program. The expenses associated with the operation and maintenance of the Crosscut Resource Center will be tracked to identify costs associated with the upkeep of the Center. The expenses tracked will include system and network administration costs, equipment upgrade costs, software maintenance costs, configuration management costs, and other incidental Crosscut Resource Center operation and maintenance costs.

The Project Manager will provide the status of the operational budget to the Industry Board in conjunction with the Quarterly Center Management Report. Toward the end of the project, the Final Operational Model will identify the funding requirements associated with the continued operation of the Crosscut Resource Center. The costs will be based in part on the expenditures tracked during the ongoing implementation of the Center. The Final Operational Model will recommend funding mechanisms for the continuation of the Crosscut Resource Center.

5.0   CROSSCUT RESOURCE CENTER POLICIES

An initial set of policies has been established for the operation of the Crosscut Resource Center. It is expected that these policies will be adhered to by all parties involved in the development and operation of the Crosscut Resource Center and by Center users. It is anticipated that these policies could be updated or be expanded during the ongoing implementation of the Resource Center.

5.1   Publishing Policies

The following guidelines will be adhered to by parties responsible for developing and publishing content and web pages for the Crosscut Resource Center.

- All web pages posted in the Crosscut Resource Center must fit with the mission of the Crosscut Resource Center
- Copyright laws will be honored
- Copyright statements will be provided if/when applicable
- Classified or proprietary content will not be included
- Personal information will not be included as part of a Center service without permission of the individual
- Content and information at the Crosscut Resource Center web site will be kept up to date
- Content will be provided in accordance with formats specified in section 4.4 of the Crosscut Resource Center Design Guidelines, April 28, 2000
- Crosscut Resource Center web page markings must appear on all web pages
- All web pages will link to the Resource Center home page
- All web pages will have the date of the last update and the email address of the Crosscut Resource Center Web Administrator
- A warning statement will be provided to users if a link will lead to a large document or image

5.2   Usage Policies

The following guidelines will be adhered to regarding usage of the Crosscut Resource Center.

- Parties utilizing services with Crosscut Resource Center-provided licenses must respond to accompanying scheduling or registration procedures
- Parties utilizing services with time, schedule, or other limitations must adhere to identified restrictions or risk losing permission to use the service
- Crosscut Resource Center will not be responsible for the content or accuracy of information provided by other sites linked to the Resource Center
- All information collected by the Crosscut Resource Center site from users will be carefully controlled and privacy maintained

6.0 CROSSCUT RESOURCE CENTER OPERATION AND MAINTENANCE

6.1 System Administration

The day-to-day system and network administration of the Crosscut Resource Center will be handled by the System/Network Administrator. Administration tasks will include the work activities identified in section 4.3. The System/Network Administrator will provide input to the Quarterly Center Management Report, describing the operational status of the Center, any equipment or facility problems encountered in the operation of the Center, and the resolution of the problems.

The Crosscut Resource Center infrastructure will be located at UMTRI. The system and network administration tasks will be accomplished in conjunction with the administration of the NSnet web site. It is assumed that the Crosscut Resource Center will be available 24 hours a day. Because of the non-critical nature of the Resource Center services, no alternative processing means will be needed if the primary connection and resources of the Center are unavailable for less than a 24 hour period. It is expected that Crosscut Resource Center down time will not exceed 24 hours.

6.2 Performance Metrics

A set of performance metrics will be recorded in conjunction with the operation of the Crosscut Resource Center. These metrics will include measures of Resource Center usage and system performance. The results will be used to evaluate and plan for the Crosscut Resource Center. Each Quarterly Center Management Report will include the results of performance metrics maintained during the operation of the Center.

Crosscut Resource Center Traffic History

The following metrics will be used to record usage patterns at the Crosscut Resource Center site.

- Record total activity count on the Crosscut Resource Center site
- Record traffic patterns among the Center options
- Record usage by Resource Center options
- Record usage by shipyards vs. other users
- Record service usage by crosscut topic heading
- Record specific usage characteristics of services identified in section 4.6 of Crosscut Resource Center Design Guidelines

System Performance Metrics

The following system performance metrics will be gathered for the Crosscut Resource Center.

- Record number of URL failures found with link checking tool
- Record system security violations
- Record server or network performance failures

6.3   Feedback and Problem Resolution

During the development of the Crosscut Resource Center services, as many initial improvements will be made and problems resolved as possible. When satisfactory testing of each service is completed, the service will be made available online to the shipbuilding and ship repair industry. As each service is brought online, two evaluation mechanisms will be activated. First the team member shipyards will obtain reviews of the service from a minimum of five personnel within their own shipyards or other shipyards. Second, an online user feedback function will be made available to users in an ongoing fashion to capture their views and comments on the service or on the operation of the Crosscut Resource Center.

The results of both evaluation mechanisms will be analyzed and necessary modifications will be made. An Excel spreadsheet will be used during both development and Crosscut Resource Center operation to record problems and changes. The spreadsheet will record problem or change number, originator, origination date, description, impacts, priority, authorization, solution, and correction date. During the operation of the Crosscut Resource Center, corrective actions will be completed by the UMTRI web site staff and recorded in the Crosscut Resource Center project configuration management files (see Crosscut Resource Center Software Development Plan).

System performance problems encountered by the System/Network Administrator during the operation of the Crosscut Resource Center will be addressed and recorded by the Administrator (see section 6.1). The Board Administrator will help to expedite problems when necessary. The Quarterly Center Management Report will summarize user feedback and system problem reports and describe the course of action to be taken in response to the user input. The Report will provide the operational status of the Center, and describe any equipment or facility problems encountered in the operation of the Center and the resolution of the problems (see section 4.4).

6.4   Crosscut Resource Center Updates

Given the short duration of the operational span of the project (20 months), it is assumed that little or no technical refresh of the system software or hardware will be undertaken after the initial Crosscut Resource Center installation. Minor maintenance upgrades to the system could be made. The Final Center Management Model will recommend follow-on vendor products and product verification methods for the Crosscut Resource Center if deemed necessary.

It is assumed, however, that consistent updates will be made during the span of the project to the content and information provided through the Center services. Provisions have been made in the Crosscut Resource Center project for Content Authors and UMTRI web site personnel to maintain and update web site content (see Crosscut Resource Center Program Management Plan). The specific content maintenance requirements associated with the individual Resource Center services will be finalized during the detailed design and development of each service.

Because of the short duration of the project, it is not anticipated that any new additional services will be added to the Crosscut Resource Center beyond those designated in the Crosscut Resource Center Program Management Plan. During the operation of the Resource Center, the Industry Board will oversee planning for the existing Center services and the addition of new Center services. This planning activity will be dependent upon the results of the ongoing evaluation of the Crosscut Resource Center. The service evaluation reports produced by the Crosscut Resource Center project team will provide guidance regarding future Resource Center developments.

6.5   Hard Copy Services

It is the general intention of the Crosscut Resource Center project to eliminate hard copy materials as part of the Center operation. The goal is to provide online electronic materials that users can download and view or print on their own. Before all hard copy products can be eliminated, a more thorough examination will be needed of the potential usage requirements associated with downloading, viewing, and printing or producing comparable materials at a user's desktop. This examination will take place in conjunction with the development of each service (see section 6.8 for related discussion). The necessary hardware and software also will need to be in place in the Resource Center to support online delivery of all materials (e.g., video server installed and operational).

Hard copies of Public relations brochures and videotapes will be developed for the Public Relations Material service. Hard copies also will be made available for the Crosscut Guide service. While supplies last, the materials will be made available at panel meetings and/or other industry functions and may also be ordered through an email request. Notices will be made on the Resource Center project web page and NSnet about the availability of the materials, with an email address provided.

6.6   Training

The training requirements associated with the general operation and use of the Crosscut Resource Center and with the individual Resource Center services will be determined during the detailed design and development of the Center. No service will be implemented without an assessment of potential training requirements and an accompanying training plan if needed. Whenever feasible, training will be minimized through the application of user friendly designs, the presence of a system HELP function, and the availability of technical assistance from the Web Site Administrator. If training is required to enable the use of a Resource Center service, a preference will be given to providing the training online, in keeping with the virtual nature of the Resource Center's user population. User feedback obtained during formal Center evaluations and during Center operation will be monitored for potential training impacts. At present, a potential training requirement has been identified in conjunction with the Center services employing the virtual teaming and collaboration tool (see section 3.2 of the Crosscut Resource Center Design Guidelines).

6.7   Web Site Promotion

General awareness of the Crosscut Resource Center and its services will be promoted through a variety of means. The Crosscut Resource Center Project Manager will be responsible for ensuring completion of these activities.

- Presentations and "site tour" demonstrations at the SNAME Ship Production Symposium
- Presentations and "site tour" demonstrations at NSRP panel meetings
- Presentations and "site tour" demonstrations at industry-related conferences and booths
- Evaluations at shipyards
- Announcements through the NSnet web site
- Announcements through the Resource Center project web page at nsrp.org
- Announcements or links at other industry-related web sites
- Announcements or links at other crosscut-related web sites

Announcement of specific new Crosscut Resource Center services will be promoted through the following activities. The project team member leading the development of each service will be responsible for ensuring completion of these activities.

- Announcements through "What's New" at the Crosscut Resource Center web site
- Evaluations at shipyards
- Announcements through the NSnet web site
- Announcements through "What's New" at the Crosscut Resource Center project web page at nsrp.org
- Targeted email announcements or mailings to shipyard crosscut personnel
- Announcements to relevant industry newsgroups

The Crosscut Resource Center project team also will examine registering the Center web site with major web site databases or search engines and web site announcement sites.

6.8   Usage Requirements Database

A database of the usage requirements associated with the various services of the Crosscut Resource Center will be developed and made available online with the Resource Center. The database will help to ensure that realistic supporting requirements are assumed for use of the Resource Center, and will help to increase the likelihood of shipyards and industry partners using the Center. The availability of support requirements will assist industry organizations in planning and implementing available resources.

Center users will be able to refer to the database to identify the computer resources that are required for an end-user to participate in each service. No service will be implemented without an assessment of the potential end-user hardware and software requirements. The project team member leading the development of each service will be responsible for ensuring identification of usage requirements for the service.

The usage requirements database will be designed and developed during the system design phase. As each service is brought online, the database will be updated to describe the requirements for usage of the new service. An overall description of the requirements for using the Resource Center will be made available, in addition to the description for each individual service.

The database will describe the desk top hardware and software recommended for each service. It will describe system specifications such as memory requirements, operating system requirements, recommended bandwidths, etc. When applicable, the database will provide a span of capability appropriate for the delivery of a service. The limitations or expected performance levels arising from the varying levels of capability will be included in the database. For example, a minimum network bandwidth or speed might be described for a Resource Center service providing video streaming. The performance limitations that could be expected with the use of the minimum specifications would be described.

APPENDIX A

Purposes of Crosscut Resource Center Services

Table 1. Purposes of Crosscut Resource Center Services

Crosscut Contacts and Communities	Provide a means by which industry users can obtain the names of contacts willing to help with crosscut topics and can participate in crosscut-related newsgroups
Training Course Library	Provide a means by which industry users can easily share training courses with one another
Industry Public Relations Material	Provide industry users with a set of public relations material that can be used in meetings, presentations, conferences, and with educational institutions and employment agents to portray the industry in a positive light
Project Results Sharing	Provide a means by which industry users can obtain an overview of the results of Maritech ASE and other non-proprietary shipyard projects
Workforce Development Forum	Sponsor, broadcast, and maintain outputs of an industry forum held to discuss continued workforce development needs and to identify course requirements associated with continued workforce development
Crosscut Information Sources	Provide industry users with significant and timely resource material culled out by crosscut specialists on topics pertinent to crosscut concerns and issues
Crosscut Proposers & Managers Guides	Provide Maritech ASE proposers and industry project managers with guides to help them understand crosscut needs and issues and address crosscut requirements successfully in their proposals and projects
Web Page for Education	Create an online mechanism that would help the industry to foster interactions and communications between the industry and educators and students at all levels
Model School/Industry Programs	Provide industry users with best practice models for school-to-work, intern, and co-op programs from shipbuilding and other industries
Virtual Workshops/Classes	Develop and present an annual course or workshop in response to a need identified in the Workforce Development Forum
Crosscut Web Links	Provide industry users with connections to good, current web sites with crosscut content
Virtual Teaming	Provide industry users with a set of tools that can be used to hold collaborative meetings, forums, and presentations