

## ***Title***

### **Promoting Sustainable Forest Industry Development - Forest Products Web Community**

By

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## ***Abstract***

Currently, Indiana ranks first in the US in production of wood office furniture and manufactured homes, second in production of hardwood veneer and plywood, and third in production of wood kitchen cabinets. However, the US furniture industry is at a competitive disadvantage due to lower labor costs for manufacturing in other countries. To prosper, all domestic production segments from material through the manufacturing process to the finished product must be well organized and interconnected. To facilitate organization and connectivity, a networking tool for the forest products industry was created and an Indiana-wide network (web-based community) was formed for an industry that creates \$17 billion in value-added for the state. The network provides Indiana industries with a competitive advantage over similar industries in other states and countries. This website facilitates forest sector economic development in the state of Indiana. The *Forest Products Web Community (FPWC)* (<http://www.indianaforestproducts.com>) includes a directory of Indiana companies that manufacture wood products, showroom, mapping capabilities, knowledge information, links to associations and business development information. Wood products buyers anywhere in the world are able to search and interact online with Indiana manufacturers that meet their unique purchase needs. It allows small, rural companies to have the same exposure and marketing opportunities as large companies. Indiana manufacturers can also use the *FPWC* to search for nearby raw materials and equipment suppliers to support their companies. Links in each section lead *FPWC* members and visitors to additional information.

## ***Introduction***

The Internet has fundamentally changed the way people communicate, creating a means to reach vast audiences. Generally, on-line communication can be informational, transactional, and/or communicational. The Internet can also facilitate complex technical information sharing (Cothrel & Williams, 1999). Transmission of ideas and information in an on-line mode is rapid and available regardless of how geographically dispersed people may be (Marshall, 2000). In other words, unlike physical communities, on-line communities do not require spatial proximity for members. In this paper, we break down the general steps required to ideate, create and launch a successful on-line Internet-based community. Although our experience is in building Web-based communities for the forest sector, this framework can be applied to any sector. Our concept was proven by the creation of The Indiana Forest Products Web Community (IN *FPWC*).

## ***Methodology***

Following steps were implemented to build The Indiana Forest Products Web Community. We believe that proposed framework can be applied to any sector.

## **Developing a Vision for the Web Community**

A powerful vision provides everyone in the organization with a shared mental framework that helps give form to the often abstract future that lies ahead. Effective visions provide a word picture of what the organization intends ultimately to become - which may be five, ten, or fifteen years in the future. This statement should not be abstract - it should contain as concrete a picture of the desired state as possible, and also provide the basis for formulating strategies and objectives (Niven 2007). It is important to have a vision and to be able to articulate the goal of the community. The vision should be a very *short* and *simple* way of saying what this community plans to achieve. In the case of *IN FPWC* examples of vision are following:

- Shape the Indiana forest products industry into a thriving industry
- Promote Made in Indiana products and services
- Facilitate bringing the industry together to prepare them against foreign competition
- Help in removing redundancies in manufacturing processes and transportation and encouraging synergies
- Provide a level playing field for all companies (by dispersion of free information to members)
- Facilitate exhibiting, selling, and buying of forest products
- Educate companies on the advantages of being an active member of the Web Community.

## **Getting Support**

A Web based community can impact many stakeholders including companies engaged in the focus industry. A community can create and strengthen relationships that companies have with business partners. The single most important factor in assuring successful implementation and participation is clearly communicated support from upper management in the industry. In general, most distrust/ambivalence occurs when senior management fails to detect the long-term benefits of participation in a Web-based community and, hence, provides only tepid support for involvement. Benefits need to be communicated to and assimilated by organizational leadership. In the case of our *IN FPWC*, the following were carried out:

- Attend number of conferences and summits involving the industry, government, and academia and present the idea to them to garner their support
- Use industry relationships to promote the idea of Web community
- Involve few enthusiastic industry players to evaluate the concept and provide feedback.

## **Developing an Organizational Structure**

The tasks required to plan and implement a Web-based community are complex and varied, including 1) developing a thorough understanding of requisite/available Web development technologies; 2) specification of appropriate and desired community components; 3) deciding on technology suppliers; 4) developing coordinative relationships with member counterparts and representatives; 5) educating internal development personnel on the scope and mission of the community project and; 6) establishing a structure for coordinating activities. In our case one person was assigned as project coordinator to oversee the project from ideation to launch. Before implementation occurs, this person became familiar with the technologies to be implemented by attending seminars, retaining consultants, conducting a literature review, and most importantly interfacing with industry and other stakeholder counterparts. Once preliminary education has taken place, the coordinator was in a better position to understand implementation

challenges, educate others, and communicate effectively to internal and external project participants. This person also has primary responsibility for community maintenance and for keeping the community current and relevant for members.

In the case of *IN FPWC*, the following were carried out:

- Meetings with the IT team to understand their capabilities and schedule
- Meetings with other team members to educate them of the plan and the tasks each team member will be responsible for.

Our organizational structure is shown in Figure 1.

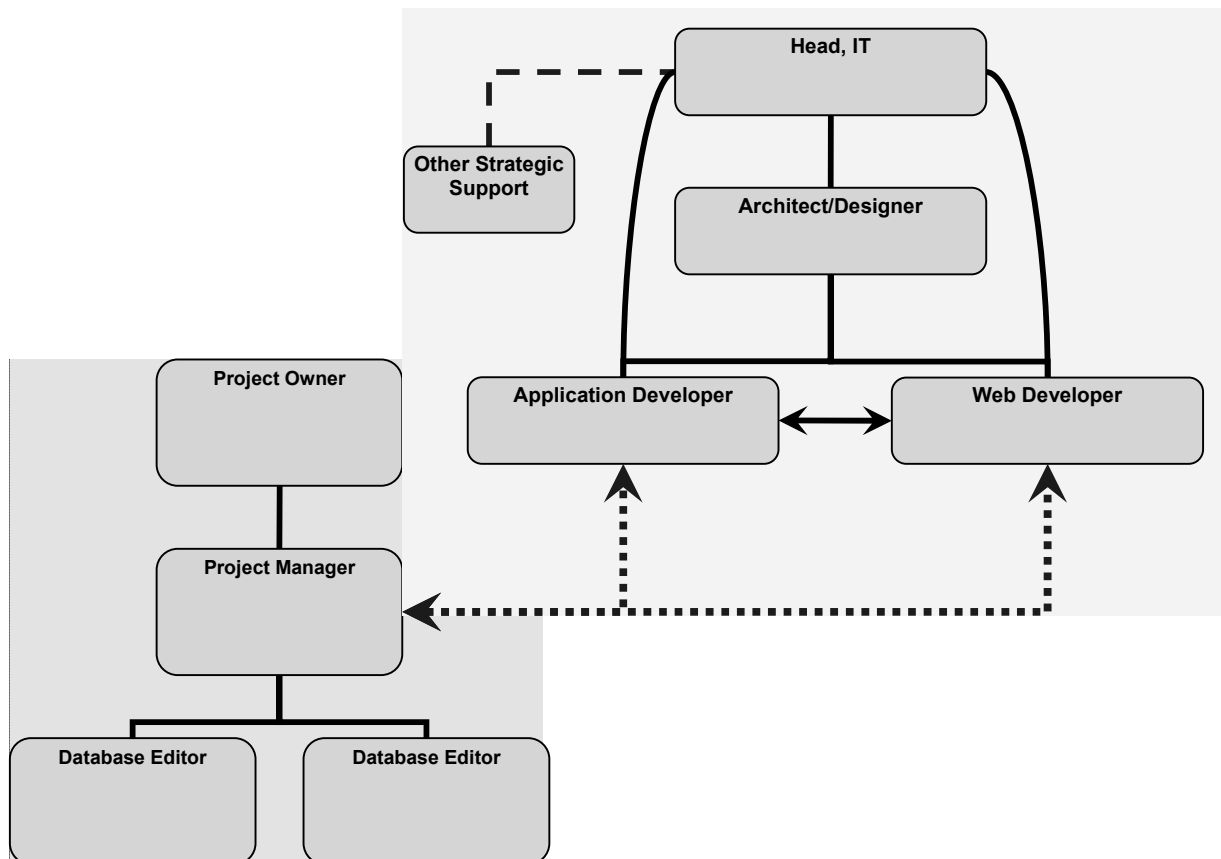


Figure 1: Project Organizational Hierarchy

### Creating a Pre-Implementation Plan

Long before implementation, priorities, specifications, goals, and objectives were developed with close coordination and input from potential community members. Rationale and justification for each community component and how they might fit in to members' overall business or organizational strategy should be part of pre-implementation discussions. Furthermore, a discussion of benefits that can be accrued to manufacturers and other members should be stressed. Planning and implementation schedules and responsibilities should be clearly stated with reasonable timetables established jointly with allowances for testing and the "learning curve" for members and developers. In the case of *IN FPWC*, the following features were deemed necessary for serving the industry in the best possible manner:

- Development of comprehensive directory of industry

- Addressing self update of member profile
- Proposing design of easy and appealing Web interface

### **Researching Existing Web-Based Communities**

There are a number of Web-based communities targeting industrial sectors and non-industrial groups with common interests and social connections. There are also Websites, while not strictly communities, that contain elements of Web-based communities. A thorough review of these sites was undertaken in order to identify the potential menu of options available. In addition, the functionality and navigability of these Websites and communities was evaluated. Existing Web communities in similar and dissimilar areas were a great help in trying and decision making what capabilities and functionality our *IN FPWC* should have. Other Websites we have researched and analyzed were:

- online directory resources provided by state government
- online industry directories
- other state forest products Web communities
- other industry Web communities and e-commerce sites

### **Creating a List of Community Components**

After a thorough review of potential options and functions was compiled, they were prioritized through a formal process involving stakeholders, potential community members and Web developers. This process resulted in a list of top priorities and, concurrently, a list of feasible activities within the budget and expertise constraints we had to operate with. We have realized that a phased implementation of the Web community would serve the best purpose. Most Web communities out there do not provide the best means of looking up for a specific company or a product. Even if they do, the user interface is counter intuitive and doesn't encourage many industry participants. Also, most Web communities rely on a centralized control of membership. However, the best way to encourage industry participation was to have a centralized control but at the same time giving the industry member the freedom of joining the community and controlling the information about themselves which was done in our case through the personalized profile page.

### **Creating Web Design and Functional Specifications**

Niederst (1996) expresses the need for Web designers to have an understanding of human-computer interface issues of Website design including navigation, function and graphics. In addition to meeting the needs of community members, Lazar (2001) is adamant that the process of Web development should be user-centric; that is, the process should meet the functionality and usability needs of the user. We developed mock-ups of each screen as a PowerPoint<sup>®</sup> presentation including all links. In addition, a very detailed functional specification document was generated that clearly stated the rationale for each link, function and item content. These specifications mimicked the entire behavior of the portal. In essence, these specifications accounted for all user interactions and the results of such interactions. It was another way of describing the behavior of our Web community. These documents were reviewed internally by designated Web developers for further refinement through an iterative process. Only when there was agreement between project leadership and Web developers on what the final product will look like and what the look and feel will be for users was the PowerPoint<sup>®</sup> presented to stakeholder/community member representatives for review and critique. The functional

specifications document was also distributed at those sessions. Figure 2 shows the home page of Indiana Forest Products Web Community (*IN FPWC*).

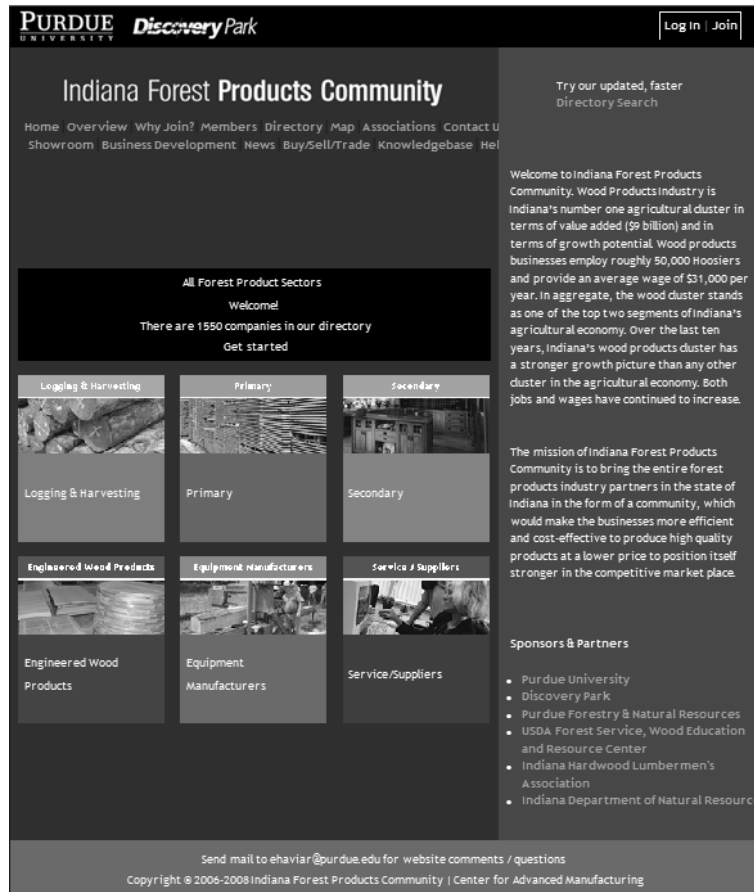


Figure 2: Home page of Indiana Forest Products Web Community (*IN FPWC*.)

## Building Content

A Web community is primarily a source of information and a medium of communication. Previous steps identified salient information and functionality priorities for stakeholders and community members. The next step was to build content and gather information. Information came in many forms such as databases, directories, links, presentations, text documents, etc. A thorough review of secondary or existing information and data sources was conducted and catalogued. At the end of this process, the repository was evaluated by the project team for congruence with priority information needs. After all secondary sources of information are exhausted; primary data collection was necessary for current database of community members. A number of methods exist to collect the information. In the case of *IN FPWC*, a mail and e-mail survey was done to obtain current information straight from the most authentic source.

## Beta Testing

In software and Web development, a beta test is the second phase of testing in which a sampling of the intended audience tests the product. Originally, the term *alpha test* meant the

first phase of testing in a software development process. The first phase includes unit testing, component testing, and system testing. Beta testing was considered as "pre-release testing." Beta test versions of software are now distributed to a wide audience on the Web partly to give the program a "real-world" test and partly to provide a preview of the next release. In this process, beta testing was done with both users and community members. Modifications were then made before launch based on comments, suggestions and problems that were encountered.

### **Launching**

It is important to launch the Website publicly such that enough Web traffic is directed to the Website so that it gets the attention of search engines. A launch during a national forest products industry conference was an ideal because it allowed users to register during the conference and it grabbed the attention of local news media. Once it gets the attention of search engines, the link to the Web community is more likely to be posted on other Websites, thus increasing the visibility of the community.

### **Promoting**

Marketing the Web community is an ongoing process. Active management of news and events pertinent to the community should be done to maintain site visits by members. Some volunteering champions among the industry and government (who are community members) are engaged in the promotional activity. The site should be advertised on other industry related Websites, trade journals, company Websites, university Websites, faculty and student Websites, etc. which is in the process of implementation.

### **Soliciting Feedback**

Feedback from users and community members is an important tool to guide to making near-term modifications to the Website. It is important to note that the Web community was developed by a group of people. But the users of the community are a different group of people. Getting user feedback and actively seeking user feedback (because some users might not bother to spend time on giving any feedback) and acting on them on a timely manner and responding back to the feedback immediately are important steps in the process. This process is underway.

### **Other Issues and Considerations**

#### ***Collecting Web Metrics***

Information of Web community visits (e.g. what is the profile of members who visit the community, what is the geographical distribution of visits, which links are more popular, which Websites link to Web community, etc.) is very useful. This information gives pointers to what's working and what's not and used to market the Web community.

#### ***Need for One Point of Contact***

A protocol on how the communication should be responded to has to be developed. The responses should be in a standard format. The upper time limit to respond to queries and feedback should be set. Surveys on user satisfaction should be done on a regular basis. (These tasks are still underway for *IN FPWC*.)

### ***Assigning a Webmaster***

Selecting the right Webmaster is critical to the success of the site. Webmasters often are chosen for their Internet technical skills—not their ability to package content. That’s a serious mistake. If the Webmaster is technically proficient but not marketing- and management-oriented, the site will appeal more to geeks than to potential customers. An effective Webmaster is essentially an editor—someone who understands both the subject matter and the needs of the audience and then can package content to satisfy that audience. He or she should be able to take content from the industry specialists in your organization and translate it in appealing ways for the Web (Zarowin 2007).

### ***Selecting a good Web-developer***

Selecting a reliable Web developer who will carry the project into a completion and keep good records was a challenge. Initial effort to use high programming skills and affordable senior students was unsuccessful due to the fact that they lack business commitment and were not able to transfer the technology to a new Web developer. Good project progress documentation was essential. Professional Web developer was outsourced and was able to complete the project.

### ***Developing a Maintenance Plan with Assigned Responsibilities***

There are several administrative jobs even after the project is complete including – sending out email, updating news, monitor postings, etc. Funds and time needs to be allocated for this stage.

### ***Developing an Upgrade Plan***

If everything is done as above, the Web community is likely to succeed. In such an event the traffic and membership would increase rapidly. Resource requirements may need to be re-assessed. Newer features may need to be incorporated to satisfy increasing needs, to prevent obsolescence, and to provide income for long term operation. Following stages should encompass such upgrade.

### ***Conclusions***

As discussed above, building a Web community requires a lot of planning. The methodology for building our *IN FPWC* is very generic in nature and can be used for any industry with minor changes. In building a Web community one has to be always aware of why it is being built and how it would be successful. Once a Web community is successful, the next step might be to introduce a notion of carrying out e-commerce through the web community. Another area would be inventory management to enhance and make efficient the entire supply chain of the industry. These steps would depend upon the level of success and commitment by the industry members.

### ***Results***

The *Indiana Forest Products Web Community* was launched in February 2009 at the Indiana Hardwood Lumbermen’s Association (an association that is over 100 years old and with members in 26 states, provinces and countries on three continents) This network provides Indiana industries with a competitive advantage over similar industries in other states. This website is an innovative and objective site that facilitates forest sector economic development in the state of Indiana. The *IN FPWC* includes a directory of Indiana companies that manufacture

wood products. Wood products buyers anywhere in the world are able to search and interact online with Indiana manufacturers that meet their unique purchasing needs. It allows small, rural companies to have the same exposure and marketing opportunities as large companies. Indiana manufacturers can also use the *FPWC* to search for nearby raw materials and equipment suppliers to support their companies. Links in each section lead *FPWC* members and visitors to additional information. Please visit: <http://www.indianaforestproducts.com>

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