Internet-based virtual communities have become an important mode of communication among people all over the world (Eschenbrenner et al., 2008). Scott and Johnson (2005) found that some of the most heavily visited sites on the World Wide Web are either fully or in part online communities. These communities allow groups of people to utilize many to many interactions as a mode for sharing experiences (Hagel & Armstrong, 1997). These people may or may not know each other in the real world but share similar interests, thoughts or ideas on variety of topics. The topics may vary all over the spectrum ranging from social aspects of the society to professionals communicating for collaborative creations or solving common business problems through sharing experiences. One can date the beginning of Internet communities to early USENET, Bulletin Board Systems (BBS), and Multi-User Dungeons (MUD). These are followed by IRC (Internet Relay Chat), chat rooms, and electronic mailing lists. The most recent form of these communities has essentially evolved into environments such as Friendster, Linkedin, Reunion, Orkut, Myspace, Facebook, Second Life, and many others.

The 2007 Digital Future Report released from the Center for the Digital Future at the USC Annenberg School highlights findings that encourage the use of Internet-based virtual communities. According to the report, 56.6 percent of members of online communities log into their communities at least once a day. Out of these, 70.4 percent interact with other members during their logon sessions. Among members who are 17 years and older, 65.8 percent consider the Internet to be a very important source of information. Further, the report states that the use of the Internet at work for professional reasons has increased to 69.7 percent. This percentage represents the class of professionals who have access to the Internet at work. Professionals using online resources at work claim their active use to an average of 7.8 hours every week. Most of these individuals claim that the use of Internet at work makes them more productive; with only 1.5 percent claiming that their productivity has worsened because of Internet access (Center for the Digital Future, 2007).
Businesses can reap the benefits of the electronic society and virtual communities by having their business clients and/or product users come together and participate in active discussions. Virtual communities can provide a strategic niche to business organizations, and can encourage and enable them to cross their boundaries to meet their customer requirements. These communities make it possible for a business organization to accurately understand the requirements of its current and potential customers and give the organization the power to serve its customers appropriately and efficiently (Hagel and Armstrong, 1997). Apart from the primary objectives of business networking, sharing problems and solutions, virtual communities offer the opportunity of financial success, and long-term market existence for products and services. Online communities act as viable information dissemination channels with appropriate social settings that bypass the traditional media control (Siau, 1999; Siau et al., 2002). It is argued that information dissemination, knowledge gathering, and sharing in these communities is increasingly important to electronic businesses (Nah et al., 2002; 2005; Kwan and Cheung, 2006; Chen et al., 2007; Kwahk et al., 2007). Information in such communities has the potential to become widely recognized resource with its customers retrieving and utilizing the information in their decision-making processes (Lueg, 2003).

Organizations and their users have distinct and unique requirements that may depend on the organizational mission, goals, products, technologies, and the behavior and expectations of its user community. The majority of virtual communities use Web-based applications; it has been observed that developing such complex Web applications is challenging. This is due to the dynamic nature of Web software where collecting exact user requirements ahead of development time is a significant task; the requirements emerge and evolve while such a system is being developed (Zhang et al., 2003). On the contrary, it is observed that the majority of the software needed to support online communities is readily available in the open-source community (Scott and Johnson, 2005; Long and Siau, 2007; Brydon and Vining, 2008; Koch and Neumann, 2008). Implementation examples of software that can support Virtual Communities exist in either conglomerated form or as individual modules on the Web. One can thus argue that the challenge of building a framework for a Virtual Community is the mapping procedure where the goal is identifying the exact requirements for the community and then selecting the tools from a pool to fit together and fulfill framework requirements. In this article, we describe a process that was followed by a team of students who had the opportunity to work in a business setting (as interns in IBM) and were given the challenge of collecting requirements, identifying different tools, and using a selection criterion for choosing the most suitable tools to meet the captured requirements. We present our experience using the case of creation of the IBM’s information rich Virtual Community iSociety. We anticipate that sharing our experience and the methodology will provide important guidelines to interest groups and other projects whose goal is either to develop such a Virtual Community or use similar projects in providing students an opportunity of applying learnt skills into real life projects.

The rest of this article is organized as follows. In the Background section, we define the project under study. This section also explains the project requirements so that the reader can relate to the overall project scope. In the Related Work section, we review the literature that describes factors affecting virtual communities’ success. Next, the article discusses system development challenges, followed by the methodology of the virtual community’s development process. Following this is a section that describes various tools currently available and that may be used for creating a Virtual Community framework. Then, we discuss our recommendations made, and finally we summarize this article with the lessons learned along with its contributions, and possibilities of future work.

**PROJECT BACKGROUND**

IBM i models (previously known as System i and IBM i is part of Power Systems since April 2008) are integrated single system computing
platforms that include a built in database, security, performance tuning, backup, reporting, communications, Internet connectivity, and file and printing serving capabilities. A Speed Team from a large mid-western public university worked with the IBM i marketing group from IBM to gather and analyze information for the development of a virtual community that will provide IBM i users a single place to meet and network in the virtual world. Speed Team is a project- and team-based internship from IBM where full-time students pursuing a degree, work with IBM technical mentors on projects in a real-world setting. The projects range from technical to marketing to research to HR–related topics. Required skills for a Speed Team member typically involve knowledge in Computer Science, Computer Engineering, Management Information Systems, Electrical Engineering, Marketing, and/or Human Factors Engineering (IBM Speed Teams Internship, 2007). In this project, four students in the Speed Team were selected from a premier Honors Program and the MBA program in the university's College of Business Administration. The Honors Program offers its students training and education in both computer science and business management. The Speed Team opportunity provided a unique internship experience to the students in the sense that the students worked as interns for IBM while taking full load of courses in their respective departments in the university. Majority of communication and project discussions between the students and IBM were via emails and conference calls. This was the first time that a university and IBM tried out an on-campus internship.

The overall goal of the project is to provide a friendly, trusted, and information-rich Internet-based framework for the purpose of sharing experiences, content, and enhancing business networking among IBM i community members and its ecosystem. After initial meetings with IBM i management regarding the scope of this project, the Speed Team decided to look into community tools such as Wiki, Blog, and other information and media publishing technologies like FAQ, Podcast, etc. In addition, the Speed Team was tasked with analyzing the usage of a 3D collaborative environment in a business setting. Based on its scope, the system requirements for the project were identified from the trends of successful virtual communities. The research output included a list of core requirements and recommendations for the framework supporting the online community “iSociety.” iSociety is the Internet community that brought together individual Web sites, chatrooms, and blogs along with organizations and businesses that use IBM i. iSociety includes consultants, analysts, reporters, Business Partners, Independent Software Vendors, and employees of IBM who share their knowledge to expand their resources with the community of IBM i users distributed all over the world. The iSociety environment should provide business values to its members (Langdon, 2006), and enable virtual training and education (Erickson and Siau, 2003).

RELATED WORK

Many Internet applications can be combined to work cohesively and provide a comprehensive Internet-based virtual community framework. This section reviews works in the areas of social aspects of the virtual community, and technical aspects of different Web applications that may be used for virtual communities. The discussion provides key information on related projects and how it may be used to build the virtual community.

Scott and Johnson (2005) suggest some principles in community development whether with real or virtual communities: (i) define and articulate the site’s purpose and infrastructure, and design it such that they fulfill ongoing needs of its intended users; (ii) build a flexible platform that encourages fun, and formal as well as informal conversations. The members must be able to find discussion forums and carry out conversations through topical organization, popularity, or freshness; (iii) create meaningful and evolving member profiles that assist members in knowing each other, help build trust and relationship, and infuse community with history and identity; (iv) design a range of community roles that respects seniority of regulars and caters to the needs of newcomers; (v) establish a strong leadership program where members can learn and accept more responsi-
bility as they wish; (vi) encourage appropriate community etiquette and standards that can evolve but provide clear ground rules for participation; (vii) promote cyclic on- and off-line events comprising of conferences, chats with leaders, etc; (viii) integrate the rituals of community life such as celebrating milestones and common holidays along with acknowledging personal transitions or successes of members; and (ix) facilitate member-run subgroups.

Bieber et al. (2002) suggest architecture for a community knowledge system to augment a digital library with a knowledge evolution support. This will include computer mediated communications, community process support, decision support, advanced hypermedia features, and conceptual knowledge structures. [The selected tools and techniques for this project will be developed around the above-mentioned features. The system would enable members of a virtual community to work in a Collaborative Knowledge Evolution Support System (CBCESS), which would provide an enhanced digital library infrastructure serving as an ever-evolving repository of the community’s knowledge. It is anticipated that the system’s members would actively use the system in everyday tasks and regularly update it.]

In an article on first-generation groupware system, Dennis, Pootheri and Natarajan (1998) discuss the overall design and technical architecture of a groupware application. They also discuss user experiences to better understand how users are using implemented systems; and the benefits and problems they are experiencing. It was found that virtual environments provide highly structured discussion environment to its users, along with an organizational memory capable of storing many different media formats.

Based on the analysis of three case studies on organizations experiencing ever-increasing level of customer engagement because of the use of Wikis that fostered customer-centricity, six characteristics that affect customer engagement were identified by Wagner and Majchrzak (2006). These are community custodianship; goal alignment among contributors; value-adding processes; emerging layers of participation; critical mass of management and monitoring activity; and technologies in which features are matched to assumptions on how the community collaborates. Wagner and Majchrzak (2006) provide three important recommendations for engaging customers and growing the Wiki. These are: (i) selecting tasks requiring collective wisdom of many against tasks that are only the responsibility of a single expert; (ii) selecting the technology to collect and aggregate knowledge and information with a neutral point of view rather than opinions; and (iii) seeding a Wiki with a sufficient number of “starter pages.”

Raman (2006) suggests two primary ways in which Wiki technology can be effective in supporting cross-unit collaboration and benefits its users. First, it enhances communication by providing a common platform for sharing information. Thus, Wiki provides a structured approach for documenting the collected information. Second, it supports knowledge sharing – users can document their respective knowledge and share it with others (JDM). Frumkin (2005) describes how Wiki may be employed in a digital library to enhance its service. Frumkin describes the use of Wiki and its RSS feeds for disseminating new or updated information to its users. These feeds act as a very powerful knowledge base for its members. Further, the author claims that Wiki has evolved into an increasingly adopted method of enabling collaboration and communication in a low-barrier and easily adoptable way.

Bongey, Cizadlo and Kalnbach (2006) explore benefits, challenges, and impact of podcasting in higher education. The authors found that students perceive podcasts as very useful supplement for regular coursework. Further podcasting is relatively easy to implement and is inexpensive.

**SYSTEM DEVELOPMENT CHALLENGES**

In this section, we describe the challenges that stemmed from the research and literature review on Internet-based virtual communities. It is important that we understand these challenges and consider their effect while developing our recommendations.
For users to develop interest and participate actively in online communities, it is important that a trust is developed among the community members. This trust will be developed based on meeting members' expectations and history of successful previous interactions. Successful interactions in the past will boost this trust and encourage future interactions among members. Online communities that allow participants to easily report and find information on present members, their activities, their relations to the community, leadership, and member's contributions are very important (Preece, 2006). This implies that it is important to be able to identify members and relate trust to the past experiences of members. However, at the same time, it brings up issues such as the privacy of individuals, difficulties in developing initial trust when the community starts (Siau & Shen, 2003; Sheng et al., 2005).

The growth of online community is dependent on awareness, publicity of its existence, and its usefulness perceived in social or professional networks. These perceptions on Internet communities are developed in the real world or in communications through other Internet channels. The interaction of existing community members with potential community members outside the community affects the growth rate of the community. External influences such as mass media, magazines, reports, and advertisements also have an impact on how the community grows (Firth et al., 2006).

The technology required to put virtual communities in place is not the biggest challenge. The main challenge is selecting which tools to provide based on usability, simplicity, and cost-to-benefit ratio. Another challenge is initiating the initial communications to kick off and build the communities. The methods and procedures that can provide knowledge and skill to community administrators so that they can intervene to impact the development of the community are exceptionally valuable.

**METHODOLOGY**

Our approach in developing the IBM i Virtual Community is to use a generic methodology adapted from existing system design methods. The overall methodology is depicted in Figure 1.

Essentially, the steps that we took in our approach are:

1. Define the scope of the project - the goal is to clearly define the requirements of the project and its purposes through an
introductory meeting with the project owners.
2. Research existing modes—find out how the user of the anticipated community currently communicates and how to fulfill their needs with the Virtual Community that is being developed.
3. Research similar existing environments - identify the usage patterns, user behaviors, and general information on similar communities.
4. Research available tools - identify tools being utilized in similar Virtual Communities and gather information regarding the tool capabilities, strengths, and weaknesses.
5. Conduct interviews with selected members from user and project owner groups—this step is carried out in various stages to assist in refining the requirements, user expectations, and finalizing recommendations.
6. Map requirements to the tools, and evaluate the selected tools and their features in meeting the requirements.

To get to the details and scope of the implementation of the Virtual community project, we conducted initial meetings with the marketing team from IBM. These weekly meetings were conducted over the phone through conference calls and generally lasted for an hour. Apart from the conference calls there was one onsite visit to IBM Rochester site to discuss the scope of the project. During these meetings, we focused on the mission/goal to be accomplished, timeline, outcomes, expectations, and budget limitations. From these meetings, it was apparent that the project goal centered on creating a common place for user communities of IBM i to collaborate and share experiences.

The first step towards research actions and information gathering for the Speed Team was to find existing web presence of the IBM i community. This was done to better understand what features were currently available, what features were widely used, and what features were lacking in existing Web sites. The quality of these Web sites was also assessed (Kateratanakul and Siau, 2008). We found that there were not many existing Web sites and out of which only three could be termed as medium-sized with regard to information and content. Apart from the three medium-sized Web sites, there were also User Groups that were distributed geographically—generally linking to physical boundaries of the States in the US. Many of these Web sites and User Groups either had limited information content or had very few participating users. After gathering these details of sparsely distributed information and communities, it was evident why the IBM i management team wanted to focus on building a virtual community to bring the IBM i community together.

During the research on similar Virtual Community Web sites, the Speed Team focused on the usage of the Web sites and compared the tools used in these sites. Selection of these Web sites was based on popularity, and similarity of the Web site in terms of size and user types when compared to anticipated users of iSociety. The Speed Team members were either pre-existing registered users on these Virtual Communities or registered specially to participate and observe the communities. Information was collected and a list of generic tools that can be used to build a Virtual Community was compiled.

After creating the list of tools that are used in similar Virtual Communities, the goal for the Speed Team was to collect information regarding the tool’s capabilities, strengths, and weaknesses. Table 1 describes our top four recommendations, along with their strengths and weaknesses.

Throughout the project life cycle, interviews with IBM i customers and management were conducted to gain insight on the community at large and to acquire additional ideas and requirements directly from the community. The interview format was semi-structured, and these were conducted both in person and over the phone. Two interviewees were champions (had a reputed background in consulting with the IBM i environment) of the IBM i user community and their references were provided to the Speed Team by the IBM i management. In general, these interviews lasted from 45 to 60 minutes. The intent of the interview was to collect information such as interviewees
**Table 1. Description of major tools**

<table>
<thead>
<tr>
<th>Description</th>
<th>Strengths</th>
<th>Weaknesses</th>
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<tbody>
<tr>
<td><strong>Forum</strong></td>
<td>Provides highly structured discussions and an organizational memory capable of storing many different media formats (e.g., gif, jpeg, and html) at a low cost. (Firth, Lawrence and Clouse, 2006). Enhanced communication - allows members to know each other better and help develop a stronger community.</td>
<td>Forums require its members to visit the website, and check for new posts. Selecting a moderator can be a challenging task since it requires a dedicated involvement.</td>
</tr>
</tbody>
</table>
| **Wiki**    | When used in a collegial environment of “like-minded individuals”, Wiki offers the following advantages (Gorman, 2005):  
• It allows its users to refine their ideas based on their expert and constructive criticism.  
• It extends the reach of individuals to collaborate using asynchronous communication without geographical restriction.  
• It works well in a brainstorming session (Siau, 1996, 1999) among colleagues. Wiki can be designed to support basic functions of a collaborative tool and of knowledge management system (Wagner and Bolloju, 2005) such as:  
• Searching information and indexing information for its effective retrieval.  
• Storage and presentation of information. |  
• It can turn into a vehicle for one-upmanship among competing users.  
• It can become a place for the most uninformed and juvenile views.  
• It can consist of half-baked and ill-written articles (Gorman, 2005). |
| **Blog**    | It is a very economical knowledge management tool that organizes information in a linear format. | It requires the authors to ensure that comments are addressed so that they provide a clear message to visitors. On the information consumer side, it requires that they assess the author's proficiency and accuracy of information. |

continued on following page
association with the IBM i, their experience and background in Information Technology, and their awareness toward features and use of currently existing information resources for IBM i. We also tried to understand interviewees’ desires and objectives to connect with other IBM i users. Additionally, the Speed Team talked to participants at a user conference of IBM i users. That was the second onsite visit that lasted for two days with the first day spent discussing the project progress with the IBM i group at IBM and the second day observing and sharing the project with IBM i users who had gathered at a major IBM i users conference.

The information gathered through the user interviews influenced the majority of our recommendations. After a brain-storming session among the Speed Team members, a formal document listing all possible features for the online community was developed. For each possible tool or feature, a recommendation document was prepared. This was done by utilizing a template for easy reference so that a Request for Proposal for implementing the Virtual Community can be created using these recommendation documents. Table 2 shows the template with different attributes and their descriptions.

**RECOMMENDATIONS**

After developing the recommendation documents for the selected features and tools, the team started the process of rating them. The method involved individual rating assigned by each Speed Team member based upon their experience, user requirement information collected from interviews, and information gathered on the capabilities of the tools. The rating of the features and tools is done on a scale of 1 to 3 where 1 signifies a must have (high importance), 2 signifies like to have (medium importance) and 3 signifies can be delayed (low importance). If certain feature/tool was not needed it was commented as ‘not required’. All these ratings were based on individual judgments. Next, a combined rating was developed using the individual ratings. In cases where individual ratings are different, all the Speed Team members discussed the rating until a common rating is achieved and all the members agreed with the final rating. A final ranking was given to each tool/feature after the process of combined rating. Table 3 shows the rankings along with short descriptions on the tool/feature. As part of the final recommendations, additional suggestions were made to the project owners. These recommendations addressed the issue of generating initial interest to boost the acceptance and growth of the virtual community:

- Appointment of designated champions. These individuals will be vocal leaders of the community and will contribute their expertise and help draw individuals to the community. These may be selected from IBM i experts, consultants, and users.
- Develop tie-in with other sites such as midrange.com (midrange.com is a mature portal that provides a large number of resources for users and developers of IBM i). This may be done by hosting archives, combining sites or other possible information sharing. Such an effort will have a
### Table 2. Template used for tools/feature for the IBM i Internet community

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title and Description</td>
<td>Title and general description of the tool/feature</td>
</tr>
</tbody>
</table>
| Requirements         | Specific requirements that the tool/feature needs to have. This may include specifying performance, reliability objectives, and user interface requirements. For each suggested software or tool, the following information were specified:  
  • Required characteristics.  
  • Goals and expectations to be met.  
  • Functionality it must provide to its users.                                                                 |
| Benefits             | How will this implementation benefit IBM i community? Benchmarks are defined for IBM i community as a whole and for individuals.                  |
| Issues               | Listing outstanding issues that need to be addressed by project owners before deploying the feature for community usage. These may be related to obstacles that prevent open communication, trust, privacy, motivation, and ownership. |
| Technology           | Description of technologies that could be used for the development of the given features.                                                     |
| Development Cost     | Approximate cost required to implement the feature. Alternatives to internal development are discussed, such as the use of open source projects or vendor provided solutions. |
| Maintenance Cost     | Approximate cost to maintain the feature once it has been deployed.                                                                          |
| Examples             | Links to other communities with similar functionality. This will help IBM i management to gain increased understanding of the feature being discussed, leading to improved implementation. |
| Recommendation       | A discussion on the value of the feature. These recommendations are based on technical, economic, and social factors identified and from brain-storming sessions. |

Dual beneficial effect. First, it would help to draw active community members to the new Internet community. Second, it will eliminate the need to duplicate functionality that is currently available through other sites.

- Have a high level involvement from project owners. One of the ways that the community can easily differentiate itself from other sites online is through official corporate participation. This will help to legitimize the community to potential members.
- Give members the opportunity to provide feedback to IBM.

The final findings and recommendations of the project were presented to the project owners at the third and the final onsite visit. The top management from the IBM i group and key IBM partners and user were present at the meeting.

### LESSONS LEARNED

We distinguished our learning into two categories - technology and users. In the technology category, we learnt that community communication tools require quality control and lack of it can be a concern to many of its users. This is true for both the users of the information resource and for the authors of the content. In addition, selecting the technology for tools and features depends on user community, and the availability of resources and skills to support the technology. These tools must be effectively customized to support the users’ needs. In the user category, it is observed that privacy and security are extremely important for corporate users. Further, our experience shows that technology alone cannot create virtual communities. Unless there are compelling needs and desires to interact, the users will not participate in and build the virtual community (Dennis, Pootheri, & Natarajan, 1998). Although there is no single formula or methodology for successfully identi-
fying requirements and mapping the tools for a Virtual Community framework, we attribute the success of our project to a six-step approach.

1. Define the scope of the project: the goal is to accurately capture and define the requirements of the project, and its purpose through introductory meeting(s) with the project owners. This is an iterative process where the details are drilled down using a top down approach (abstract view to detailed view).

<table>
<thead>
<tr>
<th>High Importance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forum</td>
<td>A web application used for holding discussions among community members.</td>
</tr>
<tr>
<td>Wiki</td>
<td>A web application that allows users to post information or articles where the underlying goal is to create a community of collaborative writers.</td>
</tr>
<tr>
<td>FAQ</td>
<td>A compilation of answers to the most commonly asked questions. Questions can relate to a particular topic, service, or product.</td>
</tr>
<tr>
<td>Blog</td>
<td>A website in which users can make postings on topics of their choice. Topics are generally posted on a regular basis and displayed in reverse chronological order.</td>
</tr>
<tr>
<td>Member Identity and Authentication</td>
<td>For online community, almost anyone can join the community and become an active member. When using the community as a place to locate solutions to problems, it is essential that users can verify their identities. This would help to enhance trust for the community members.</td>
</tr>
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<table>
<thead>
<tr>
<th>Medium Importance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Podcast</td>
<td>Podcast are used to distribute audio (or video) files over the Internet using various delivery methods. These files may then be played back on the computer or other portable music devices.</td>
</tr>
<tr>
<td>News</td>
<td>This is a feature for community members to stay up to date on the latest news. The online community should offer the ability for users to read articles from various sources.</td>
</tr>
<tr>
<td>Privacy (protected areas of site)</td>
<td>Some discussions made in the online community are confidential. It may thus be beneficial to provide secure and password protected areas for individuals to hold such gatherings.</td>
</tr>
<tr>
<td>Business collaboration network</td>
<td>A place on the web that allows users to establish business contacts based on information contained in a user’s profile. This functionality would be similar to sites such as <a href="http://www.thefacebook.com">www.thefacebook.com</a> or <a href="http://www.myspace.com">www.myspace.com</a> that allow users to add friends to their social network based on common interests</td>
</tr>
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<table>
<thead>
<tr>
<th>Low Importance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual Hub</td>
<td>A location that would provide students who may or may not be as familiar with IBM i capability to utilize a shared IBM i platform.</td>
</tr>
<tr>
<td>Job Portal</td>
<td>Job search functionality similar to other Internet open job databases but only specific to IBM i.</td>
</tr>
<tr>
<td>Virtual scratch paper</td>
<td>A scratch paper, or virtual whiteboard, would allow multiple users to interact with one another on a shared canvas.</td>
</tr>
<tr>
<td>3D online community</td>
<td>A real-time communication tool that allows its users to interact through avatars in a virtual world. Users can chat with current friends or meet new people. They also have the ability to play games, go shopping, participate in scheduled events, explore, or design and create objects in the virtual world. The possibilities surrounding this technology are endless as this type of community is not clearly established and is changing every day. Businesses have yet to harness and utilize the capability inherent in this type of community.</td>
</tr>
</tbody>
</table>

Table 3. Final rating of tools/features
2. **Research existing modes:** find out the current modes which have fulfilled the needs of prospective users. These modes may or may not use similar channel or technology. For example, users may be using Web sites (electronic media), or a help desk phone support system. This information not only helps in assuring that the existing knowledge is integrated into the new system but it also gives a starting platform for innovative components. It establishes a comparative competitive advantage with respect to existing methods and is able to attract users to join the new community.

3. **Research similar existing environments:** identify the usage patterns, user behaviors, and general information on similar communities. This ensures the new environment is based on time-tested and successful independent models of applications, and user-friendly software.

4. **Research available tools:** identify the tools being utilized in similar virtual communities and gather information regarding the tool capabilities, strengths, and weaknesses. This step saves cost, reduces probability of failure, and assists in rapid development of the community.

5. **Conduct interviews with selected members from the users and project owners group:** this must be carried out at various stages of the project. The idea is to identify any missing requirements and verify and validate user expectations and their requirements. There are supplemental methods to interviewing such as surveys and observations that may also be used.

6. **Map requirements to the tools and rate the selected tools and their features:** Understand the capabilities and constraints of the tools before making final recommendations.

**CONCLUSION**

In this article, we present an IBM Speed Team project where a team of students were given the opportunity to make recommendations on the development of a virtual community to support IBM i community. The article describes the approach, methodology, and challenges in identifying the needs for developing the Internet based virtual community. The project was very successful as it gives the students a chance to apply their learnt skills. The success is particularly significant as it is the first time that a university and IBM have worked on a Speed Team project when the students were taking full-time credits at their university. It is exciting for the team to learn that their recommendations have been implemented as iSociety and is being used by the IBM i user community at the moment.

**REFERENCES**


**Ashu Guru** has a PhD in industrial and management systems engineering from the University of Nebraska-Lincoln. He earned his bachelor’s degree in mechanical engineering from the Delhi College of Engineering, (Delhi, India) and his MS in manufacturing systems with a minor in MIS from the Industrial Engineering department at the University of Nebraska-Lincoln. His interests include information systems, database management systems, and discrete-event simulation.

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