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Community Knowledge Sharing Wiki for Higher Education Information Technology Professionals

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By

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Abstract

Information Technology (IT) professionals in higher education regularly collaborate in communities of practice. The community knowledge sharing wiki is a collaboration tool IT professionals utilize as a centralized platform to improve knowledge and share best practices. The goals of the wiki are to improve the knowledge of IT professionals and the services of IT organizations in higher education. The primary benefit of IT professionals establishing a knowledge sharing wiki is having a centralized, structured, searchable, and expert reviewed resource for IT related service areas. As this wiki was further developed, measurements were to be defined to regularly report and review the wiki successes and failures. These measurements would ensure information is current and beneficial to all participants.

A structure for the wiki was developed and the wiki was promoted to IT professionals via established community mailing lists and other outreach activities. The success of this knowledge sharing wiki implementation depended upon identifying a core group of professionals interested in establishing and updating the wiki. Once the wiki was established, others in the community would also be encouraged to contribute and participate in the wiki to ensure the tool was effective and useful for professionals and organizations to improve their IT services.

Although many IT professionals expressed interest in the wiki, a core group of professionals could not be identified to establish the knowledge sharing wiki. A survey was conducted to identify the barriers with establishing the wiki and determine criteria for the wiki to be a beneficial tool to professionals. Professionals primarily lacked the time to participate and also cited an abundance of other resources already available in the field. Some of the professionals may have contributed if an incentive of some type was offered. While the establishment of the wiki has not been realized, the knowledge gained through developing the foundations for the wiki, promoting the wiki and analyzing the challenges with establishing the wiki have been beneficial to the IT community.

Research Questions

This project addresses the following questions:

1. Will a wiki be beneficial as a knowledge sharing platform for IT professionals in higher education?
2. How could a wiki be effective and successful in the implementation?
3. Who will provide the expert knowledge and actively participate in a wiki?
4. How can a standard wiki format and structure be implemented to ensure the knowledge is both understandable and searchable?
5. What measurements can be developed to determine how effective the wiki is for improving knowledge and services for contributors, participants, and institutions?
6. What are the primary reasons IT professionals chose to participate or not participate in a wiki?

Proposed Solution and Deliverables

The following deliverables were accomplished in this project:

1. Developed initial project proposal and contacted potential faculty committee members.
2. Developed final project proposal and obtained approval from faculty committee.
3. Defined initial set of technology services to share knowledge on the wiki (i.e., electronic mail, security, and networking).
4. Developed information architecture for the wiki, including a standard template and layout for each service component.
5. Developed strategies to keep information current and maintainable.
6. Developed strategies to measure the effectiveness and accuracy of the knowledge being provided.
7. Developed policies regarding the type of information the wiki will provide (and not provide).

8. Identified and invited experts from other institutions to participate in this service to review and provide content.
9. Investigated and developed a benefit analysis of wiki providers available to determine an appropriate wiki provider for this service.
10. Implemented a wiki at a hosting provider.
11. Designed and developed wiki content.
12. Promoted the wiki through various higher education resources (e.g., Educause, ResNet, SIGUCCS, HighEdWeb, NERCOMP).
13. Provided professionals ability to give feedback and recommendations on services provided for the wiki service.
14. Wrote final paper detailing the entire process and the outcome of the project.
15. Identified with committee members the future goals of presenting a paper at an appropriate technology conference as well as publishing a paper in a journal.

Project Success Factors

The success factors for this project included designing the wiki and enlisting the participation of professionals to participate in the wiki:

- Developing an organizational structure professionals can easily use
- Standardizing information formats and terminology
- Enlisting experts to manage information in their areas of expertise
- Promoting the wiki to all IT professionals as a useful resource
- Making the wiki easy to update with new information
- Making the wiki easy to navigate and locate information
- Making the wiki easy to locate and remove old information
- Measuring the longevity of knowledge provided for accuracy and reliability
- Measuring the contributions being viewed in the wiki

- Interviewing institutions and participants using the wiki to determine the effectiveness of the wiki in their organization

Project Risks

The risks for the project include:

- Unable to enlist an adequate number of experts to provide and review the content in wiki
- Unable to encourage sufficient professional participation in the wiki
- Unable to develop useful metrics to measure effectiveness of wiki
- Unable to organize information efficiently in the wiki
- Unable to obtain agreement among participants regarding the wiki structure

Project Timeline

Dates	**Deliverables**
December 2010 to January 2011	1. Develop initial proposal. 2. Identify two faculty members to participate in committee.
January 2011 to October 2011	1. Finalize proposal and obtain faculty approval.
October 2011 to January 2012	1. Define initial set of technology services for wiki (e.g., electronic mail services, web content management systems, networking, and security). 2. Develop information architecture for the wiki, including a standard layout for each service component. 3. Develop strategies to keep information current and maintainable. 4. Develop policies regarding the type of information the wiki will provide (and not provide). 5. Develop plan to enlist committee of experts to review information and provide content.

	6. Setup wiki at a hosting provider.
January 2012 to November 2012	1. Design wiki and develop content for web site. 2. Promote wiki through various higher education resources (e.g., Educause, ResNet, SIGUCCS, HighEdWeb, NERCOMP). 3. Provide the user community with the ability to give feedback and recommendations on services provided on the wiki. 4. Write final paper detailing the entire process and the outcome of the project. 5. Work with committee to present paper at a technology conference and publish paper in a higher education journal.

Introduction

Information technology (IT) organizations in higher education strive to provide reliable, secure, efficient, and high-quality services and tools to advance the education mission of their institution. However, IT organizations regularly struggle with budgetary and staff resource allocations to provide high quality technology services and tools. Therefore, IT staff professional development and collaborations are highly valued and required for IT organizations to succeed in improving services and increasing the adoption of new technologies at their institution. As budgets continue to tighten and higher education institutions increase their dependence on technology, IT staff and organizations need to develop creative, cost-effective solutions to improve the services their institutions rely upon.

The concept of sharing knowledge with peers in higher education leads to better informed decision-making, improved services, and ultimately lower costs for providing services (Kidwell, Linde, & Johnson, 2000). Sharing knowledge in higher education both within the institution, and in collaboration

with other institutions, is highly valued and encouraged (Kidwell, Linde, & Johnson, 2000). Transparency and sharing knowledge are important factors to the success of organizations for improving employee behavior, performance, and overall operations. Knowledge sharing has become critical to lower costs, increase trust, develop superior innovations, improve employee loyalty, and improve organizational processes (Tapscott, et al., 2006).

Community of Practice

One common knowledge sharing technique is to create a community of practice where participants actively contribute in developing a knowledge repository. Professionals learn from each other and ultimately, organizations improve their services from the knowledge they obtain from the community. Participation in a community of practice is typically voluntary and informal. A community of practice thrives when expert participants actively contribute to improve the access of knowledge available, and the knowledge becomes an asset to the organization (Rowley, 2000). Participants and organizations need to see identifiable benefits of providing knowledge and obtaining knowledge from the community to ensure the success of the community (Ardichvili, Page, & Wentling, 2003).

Many IT organizations in higher education provide similar types of services to their institution (e.g., electronic mail, learning management systems, networking, telephone services, etc.). Institutions may use different applications to provide these services, but the services have common risks, requirements, and constraints where a community of practice can be formed. Common types of communities of practice used by IT professionals and institutions include participating in electronic mailing lists, blogs, or conferences. While these methods for improving knowledge are all beneficial, the contributions are typically not organized in a standard format, reviewed, or regularly updated. Most of these resources provide technical instruction on software, hardware, or other technology services, but do not provide the practical advice needed to manage and support the technology. Also, the needs of IT professionals in higher education differ from corporate IT needs because of the diversity of the community to support. Thus, there is an important need for a centralized, virtual community dedicated to IT professionals in higher education.

Wiki Goals and Benefits

A wiki is a common technology incorporated by communities of practice to improve collaboration among organizations. A wiki promotes openness, creativity, knowledge sharing, participation and self-organization (Tapscott, et al., 2006). A wiki is a platform IT professionals in higher education can utilize to advise and consult on a variety of topics and share their knowledge in a standard, searchable format. IT organizations could measure the effectiveness of the practices and solutions provided in the wiki and correlate them to their own service improvements. This centralized wiki will provide a structured approach to collecting, disseminating, and measuring best practices to professionals in higher education. The wiki will be a virtual community where IT professionals can collaborate and learn from each another in a forum that is developed specifically for the services they are managing.

This community resource will be a foundation for institutions to foster relationships and share how to improve technology services in higher education. IT organizations will benefit by increasing productivity and improving services to their constituencies. This wiki resource will be available to IT professionals, students, and administration in higher education and it will be organized, reviewed, and updated on a regular basis by expert reviewers. Measurements will be defined to validate the comprehensiveness, effectiveness, and importance of all information provided in the wiki.

Wiki Platform

There are a number of wiki platforms available to host a community knowledge sharing wiki for IT professionals. WikiDot, Wetpaint, and other MediaWiki and Confluence wiki platforms were specifically evaluated. These platforms offered many advantages to hosting the wiki including:

- Variety of templates
- Ability to search easily
- Editing and formatting capabilities for users of various technical capabilities
- Ability to track wiki changes
- Ability to track wiki usage

- Ability to limit editing privileges
- Ability to import and export wiki information
- Reliable hosting platform

These wiki platforms are not bundled with services from an organization which is already referenced and trusted by IT professionals for their professional development needs. Therefore, the organization chosen to host the wiki for IT professionals in higher education was Educause. Educause is a prominent non-profit higher education IT organization comprised of IT leaders and professionals. Educause provides an open wiki to its members and it is accessible to everyone in higher education. Associating the wiki with Educause provided both a platform and name recognition, thereby encouraging IT professionals to become involved in the wiki.

The Educause wiki has the ability to track wiki changes and provides authentication mechanisms to ensure the wiki is only editable by members of Educause (i.e., IT professionals at the majority of higher education institutions). Educause librarians and marketing managers were presented with the proposed wiki, and approved moving forward with the wiki. However, they cautioned it had been difficult in the past to find members to actively engage in using the wiki service. The Educause wiki is primarily being used for group meeting minutes and other service overviews, but is mostly inactive and not collaborative in nature. Educause was hoping for someone to "shepherd" a wiki and encourage increased participation and collaboration, so hosting the knowledge sharing wiki was a good proposition for Educause. The Community Knowledge Sharing Wiki for Higher Education IT Professionals (www.educause.edu/wiki/sharing) was officially launched in December 2011.

Wiki Foundations

The launch of the knowledge sharing wiki included proposed areas outlining a:

- Wiki Charter
- Wiki Governance
- Wiki Template

- Wiki Policies and Guidelines
- Wiki Background Information and Instructions

These proposed topic areas were developed to be a foundation for initiating discussion and interest in the wiki with other professionals. This proposed structure for the wiki was a concern because of the impact it would have on participation in the wiki. A structure could make participation either easy for someone to initially start documenting their service area, or more difficult for someone who already had information to provide in a different format. The structure could limit participation if someone needed to dedicate additional time to restructure their information to fit in the wiki. The wiki manager proposed the structure with the understanding that wiki participants would modify the structure or customize it based on the needs of their service area.

Wiki Charter

The charter for the knowledge sharing wiki was developed to provide professionals an overview of the goals and objectives of the wiki.

The knowledge sharing wiki will improve collaboration among higher education IT organizations by:

- Encouraging professionals to contribute their knowledge in a standard, searchable format.
- Providing statistics so organizations can measure the effectiveness of the practices and solutions provided in the wiki.
- Providing a structured approach to collecting, disseminating, and measuring best practices to professionals in higher education.
- Becoming a virtual community where IT professionals can collaborate and learn from one another in a forum that is developed specifically for the services they are managing.
- Being a foundation for institutions to foster relationships and share how to improve technology services in higher education.
- Increasing productivity and improving services to higher education institutions.

- Allowing the information in the wiki to be freely accessible to all IT professionals, students, and administration in higher education.
- Organizing, reviewing, and updating all information in the wiki on a regular basis by expert reviewers.
- Establishing metrics to measure the comprehensiveness, effectiveness, and importance of all information provided in the wiki.

Wiki Governance

A wiki governance structure was developed to provide professionals and institutions a defined set of roles and responsibilities for participants in the wiki. This would ensure professionals volunteering to participate in the wiki understood their responsibilities in maintaining the wiki.

Primary Wiki Manager

- Identifies needs and provides direction for wiki usage
- Resolves any disputes
- Develops initial structure, policies, templates
- Promotes wiki
- Evaluates feedback and recommendations from the community
- Provides reporting on wiki usage

Executive Committee: Four to Five Members

- Provides recommendations for wiki structure and policies
- Implements modifications to the structure and templates for wiki
- Oversees the wiki content and uses in different areas
- Ensures experts are providing content and updating content in their areas
- Meet via web or phone conference two to four times per year to review direction of the wiki service
- May meet at an Educause conference at least once per year

Experts

- Each service area included in the wiki must have at least two to three experts who are willing to post and review content on a regular basis (two to four times per year).
- A calendar index will be created for each service area in the wiki so the experts are reminded to review content.
- Experts will be asked to volunteer via various higher education mailing lists and organization resources.
- Nominations for experts will also be accepted.
- If information in the wiki is outdated, at least two experts should agree to remove the information or update it.
- Experts should join a separate discussion mailing list to receive general wiki administration updates.
- Experts must be a member of Educause

Editors

- Edit and update specific topic areas in the wiki
- Communicate to experts in their area for feedback and recommendations
- Editors must be a member of Educause to edit the wiki

Participants/viewer

- Provide feedback and recommendations
- Utilize the wiki service
- Anyone can view the wiki

Wiki Template

A template for each service defined in the wiki was developed to provide a standard format for entering information into the wiki. The goal of the template was to make information uniform to view

and search. Each service area could modify the template as needed, but the template provided a starting point for experts to start defining their service area. The template included the following areas:

Service overview. This section is to provide a 2 to 3 sentence description of the purpose of providing the service. This section should address why the service is important/critical to manage in higher education environments.

Definitions. This section will define any terms that might need additional explanation to help professionals better understand the service components.

Successful approaches and options for providing the service. This section will list alternatives for providing the service. A framework for providing the service will include design recommendations and methodologies to improve efficiencies and processes. Alternative hardware and software products might be listed. Various support models and architectures could be identified. Various management tools can also be included. Advantages and disadvantages to each approach/option should be included.

Requirements for providing a successful service. List of items required for ensuring a successful service delivery. Some of these requirements may be generalized or directly related to a specific delivery model and should be noted. Include dependencies on other services required to provide the service listed.

Benefits to providing the service. List of benefits to the various constituents at the institution (e.g., students, faculty, employees, alumni, parents, etc.). Describe how the service can improve efficiencies and support the mission of the institution.

Recommended options for the service. Optional items that might be useful when providing the services, but are not critical to the success of the service.

Costs - approximate costs for products and people. Costs should be approximated and are not required. These can include one-time costs, annual (on-going) costs, and staff/resourcing costs.

Staff responsibilities. Provide a list of responsibilities staff will be required to perform to provide the services. This might include workflows on how the service is supported among different teams in the IT organization.

Best practices for providing the service. Include information regarding engaging stakeholders, tracking and resolving issues, planning the service implementation, training plans, communication plans, and design architectures.

Risks/Concerns with providing the service. This area will identify the factors and risks which might cause the service to fail. This area will also discuss how to plan to mitigate those risks. This area should include any potential customizations which might be required to providing the service.

Institutions using the service. List institution web sites in this area which provide the services.

Reference information for expert people in providing service. If an expert is interested in providing additional information on a service to others, they could list their contact information in this area.

Mailing list information for the service. Include information on joining appropriate Educause mailing lists, other higher education mailing lists for learning more about the service.

Other external resources available for the service. A list of reputable blogs, vendor web sites, LinkedIn groups, Twitter feeds, or other resources should be included.

Wiki Policies and Guidelines

Wiki policies and guidelines provided participants details on how the wiki would be managed and how service areas would be defined in the wiki.

- The knowledge sharing wiki will be an objective and independent resource for documenting and sharing best practices in IT.
- The wiki will not be used for advertising products or services.
- The wiki will not be used as a forum to rate one service offering versus another offering.
- At least three experts need to volunteer to regularly monitor and update a service area for a service to be included in the wiki.
- All services should use the standard template, but the experts can request slight changes in format if necessary.

- Experts need to complete the initial service template and agree to maintain it at least two times per year.
- If two out of the three experts vote not to include information in the wiki regarding a service, it will not be included.

Wiki Measurements

Measuring the effectiveness of the wiki ensures the information being compiled is beneficial and regularly updated for wiki participants. Analytics would be defined to regularly review which services in the wiki are read, reviewed, and edited on a regular basis by participants. A rating scale could also be developed to allow wiki participants to provide immediate feedback on the usefulness of all wiki pages. A rating scale would aid in verifying the wiki content was accurate and updated. The Educause wiki provides editing history of the wiki entries that would be used to determine the frequency a wiki article is being updated. Educause also provides statistics on the number of page views for each wiki. These general statistics would be reported twice per year to the Educause community to show the effectiveness of the wiki and encourage participation. Regularly communicating the wiki usage statistics also would remind professionals to contribute to as well as utilize the wiki.

The executive committee and experts would meet yearly at the Annual Educause Conference to discuss the future of the wiki and recommend any modifications. These meetings would include Educause officials to ensure the wiki was in alignment with other Educause resources. Semi-Annual reviews would take place by the experts in each service area to ensure information is updated and remove any outdated information. Wiki editors would also be reminded quarterly each year to keep their wiki information current and to remove any stale content. These reminders would be defined in a calendaring system to ensure reminders were sent out in a timely manner. Although an initial time investment would be required by experts and editors, the ultimate goal is to decrease the time investment per person as more professionals agree to participate.

IT professionals would be surveyed each year to gauge the effectiveness of the wiki and how it related to the service improvements at their college or university. These surveys would be conducted at

different levels of the IT organization, but most importantly at the CIO/Director level. These surveys would be analyzed to determine how IT organization improvements correlated to the service areas being effectively used in the wiki.

Wiki Promotion

The primary wiki manager pre-populated the wiki with proposed examples based on a variety of services including electronic mail, spam protection, and other collaborative tools. These examples would provide interested participants ideas of how the services would be defined in the wiki. IT professionals were encouraged to participate in the wiki in February and March 2012. Email solicitations were sent to the following mailing lists:

- Educause User Services Listserv (782 participants)
- Educause Leverage Support Listserv (113 participants)
- Educause Web Administrators ListServ (1538 participants)
- Higher Education E-mail Administrators Listserv (829 participants)
- New Media Consortium Board (10 participants)
- SIGUCCs Listserv (783 participants)
- ResNet Listserv (1540 participants)

Although many IT professionals cross-subscribe to these mailing lists (for example, one professional may be a participant in four of these lists), this was an effective way to quickly reach many IT professionals in communities that encourage collaboration. Promotion for the wiki also was done via Twitter, LinkedIn, and other social networking media. Between January and March 2012, many professionals viewed the wiki main page, background information, and some of the other wiki content (over 1,000 views). According to Educause, by the end of January 2012, over 200 unique professionals viewed the wiki. Many professionals sent positive responses indicating an interest in participating. Some sample responses included:

"This sounds really interesting. Please keep me in the loop."

"I would love to participate. This fits perfectly with a current project."

"I'm highly interested in this knowledge sharing wiki. I have been looking for something similar to put some energy into. I have many thoughts to share about best practices in computer lab management, and see myself contributing to these areas: Collaboration, Mobile Devices, Desktop Management, Distance Learning, Video Conferencing and Scripting and Automation. Let me know how I can help."

"Count me in! Sign me up."

"I'm still interested but just haven't had the time. I still think this is a valuable project. If you could send me a template it may help."

"I am definitely still interested and can probably put some work into a topic over the next week."

"In general, my areas of expertise lie primarily in e-mail and collaboration technologies, which look like they have a start in the Wiki already. My real strength is in the scripting required to efficiently manage systems and users on the large scale that we typically deal with in an EDU environment. Is there a thought to include in the wiki best practices, tips, etc. on this type of thing? I'm thinking that most of the solutions, tips, and ideas that I can provide will fall under the service areas that you've defined (i.e. Server Management, Electronic Mail, Collaboration, Desktop Management).

As I'm thinking, though, perhaps a top-level category about scripting and automation would be a good idea, to house information of a more general nature that may not specifically be tied to one of the defined service areas. Some of this information may be as basic general best practices in managing/documenting code and could get more specific into setting up various coding environments (i.e. PowerShell remoting).

I'm really just thinking out loud, not knowing how in-depth this wiki is intended to go. Is it intended to me more high-level information or is there a thought of providing specific "here's how you can accomplish this particular task" kind of information?"

"I think that having an information sharing wiki between higher education IT folk is an excellent idea. There is such a vast amount of knowledge and experience out there. Some of the listserves and

things are extremely helpful, but sometimes it's hard to know about them when you are new in the field. Educause seems like the ideal place to do this and point to other sources of information (i.e. the HiEd-EmailAdmin list)."

". . . we just created a printer best practice document for on network devices. I am afraid it doesn't fit extremely well in your service template without a lot of time editing. I think this sharing wiki is a great idea and look forward to see it developing."

". . . in the spirit of true community of practice, I think the idea of an open Wiki such as this would only benefit the true academic IT service providers who believe in sharing with the community the successes, failures, challenges and vision of technology in education.

It is interesting to see some institutions operate in a corporate manner by sharing only within their 'inner circle'. I have noticed this more so with IT organizations that have basically built their internal structure by hiring corporate IT individuals who have a difficult time adapting to the academic environment where teaching and learning are most important. We are all a community of learners and teachers."

These comments were sent to the wiki manager from IT professionals at community colleges, small four year colleges, large universities, and public and private colleges. The comments were generally positive and encouraging. However, the enthusiasm of these professionals did not lead to any professional contributing to the wiki, or any other collaboration. Several requests were made to these professionals to ask them to contribute anything they could, but lack of time seemed to be the major issue professionals had to contributing to the wiki.

Wiki Outreach

In March 2012 the community knowledge sharing wiki was presented to the Office of Information Technology Leadership Group at Princeton University. This group comprises approximately forty IT managers from a variety of areas in the Office of Information Technology at Princeton. The wiki presentation received a positive response, but only four managers were interested in providing content to the wiki. Several smaller meetings and email exchanges took place to encourage participation, but

professionals lacked the time to contribute. Some professionals also requested other professionals start contributing to the wiki before they would participate. The managers described being uneasy self-identifying themselves as an "expert" in a service area before others agreed to participate. Others explained that although a wiki was a good idea, they already had numerous resources they used in their daily work and were not in any need of an additional resource. Ultimately, the Leadership Group did not endorse the wiki project as an initiative they wanted to move forward and they did not promote the wiki with their individual teams.

In April 2012 the community knowledge sharing wiki was presented to approximately thirty IT professionals at Hamilton College via a video web conference. The reaction to the wiki was very similar to the reaction of other professionals. The majority of professionals felt the wiki was a good idea, but most agreed they did not have the time to contribute, or the need for another resource to use. The structure of the wiki was also brought up as a potential issue because the structure did not have flexibility to provide information for novice service providers versus more experienced professionals. Also, the wiki structure did not provide professionals an easy method to review comparison data between services. This would enable professionals to better understand differences and similarities when investigating a new application to provide a service. The Vice President for IT at Hamilton also noted he has attempted for years for institutions to share their product evaluations and other best practices with each other using different structured and unstructured methods, and all attempts failed to produce any collaboration opportunities.

These presentations were helpful to provide direct feedback regarding the wiki. Conceptually, professionals liked the idea of having a wiki and possibly engaging using it if others started the work in populating it. However, none of these professionals were willing to take the first step to actually begin working on a wiki for their service area.

Competing Wiki Efforts

Other IT professionals in higher education also have simultaneous wiki initiatives causing some confusion with the knowledge sharing wiki. Specifically, Indiana University (IU) is encouraging other

institutions to join their wiki for end user support information. The IU wiki is geared toward collecting common solutions to technology problems that all higher education institutions may address with their faculty, students, and staff. The knowledge sharing wiki's purpose is for IT professionals to share knowledge and best practices. While the IU wiki and the knowledge sharing wiki had different goals, there was confusion among professionals regarding the differences between the two wikis. In addition, the manager of the IU wiki also discussed problems with wiki adoption and encouraging other institutions to participate. At that time, the IU wiki was populated with IU information and no other institutions were participating.

Other Educause constituent groups had already started wikis for their groups. The Educause Project Management Group already had started a wiki and had no immediate need to use the community knowledge sharing wiki. Also, the New Media Consortium had a wiki in place for some of their functional groups. These groups were not interested in moving their information into the knowledge sharing wiki. Most of the information available in the other Educause group wikis was outdated, not well structured, and not collaborative in nature.

Survey Results

After four months of unsuccessfully obtaining professionals' participation in the knowledge sharing wiki, further marketing and promotion of the wiki was suspended in May 2012. Additional analysis and review was required to understand why no professionals chose to actively participate in the wiki. In June 2012, a survey was developed to analyze the concerns and issues professionals had with participating in the wiki. The survey contained eight questions and the responses were collected anonymously using the Qualtrics survey tool. After receiving IRB approval in July 2012, the survey was distributed to approximately 3,500 IT professionals who were sent the original invitation to participate, asking for feedback regarding the wiki (see **Appendix A** for a copy of the letter sent to the professionals).

The timing of the survey likely impacted the response rate for at least two reasons. First, the survey was distributed during potential respondents' summer vacations. Second, the length of time that had lapsed from the initial wiki announcements in February 2012 to the survey announcement in July

2012 resulted in some professionals not remembering receiving the initial wiki announcements. Overall, 123 professionals responded to the survey (approximately 3.5% response rate). There was a clear trend in many of the survey results.

Item Analysis

1. When I received the initial announcement regarding the knowledge sharing wiki at Educause: (check any that apply)

#	Answer		Response	%
1	I was very interested in participating in the wiki.		17	14%
2	I had no interest in participating in the wiki.		30	25%
3	I did not understand the purpose of the wiki.		14	11%
4	I do not remember reading any announcement about the wiki.		67	55%

Statistic	Value
Min Value	1
Max Value	4
Total Responses	122

Many professionals did not recall receiving, or reading, the initial announcements regarding the wiki in February and March 2012. This was partially due to the time frame that had lapsed between the initial wiki announcements and the survey request announcement. This could also be due to many professionals not regularly reading postings to the mailing lists and missing the announcements. Increasing targeted marketing of the wiki could have improved participation and awareness of the wiki by contacting higher education IT departments directly and offering presentations and training. However, the two targeted presentations provided to IT professionals at Princeton University and Hamilton College had similar results yielding no participation in the wiki.

The percentage of professionals interested in participating in the wiki was low, but this is typical for most wiki initiatives. If this small group of interested professionals was able to provide content to the wiki, the wiki had the potential to grow into a useful tool for IT professionals. The benefits of

participating in the wiki needed to be more meaningful for professionals to see the value of investing their time in the wiki.

2. After viewing the knowledge sharing wiki being proposed: (check any that apply)

#	Answer		Response	%
1	I was interested in actively participating in the wiki in the format being proposed.		12	11%
2	I was confused by the structure and format of the wiki being proposed.		6	5%
3	I was interested in only viewing the wiki after it was established.		25	22%
4	I had no interest in participating in the wiki.		16	14%
5	I never viewed the wiki web site.		65	58%

Statistic	Value
Min Value	1
Max Value	5
Total Responses	113

The responses are consistent with the professionals who did not know there was a wiki being promoted. Most professionals never viewed the wiki site either because they missed, or ignored, the initial announcements of the wiki or they were not interested in the wiki as a useful resource. Only a small percentage of professionals who did view the wiki had an interest in actively participating in the wiki. This is very common for most wiki implementations and these professionals could have served as the core group needed to establish the wiki. The largest percentage of professionals who viewed the wiki (22%) was interested in viewing the wiki after it was established, but not actively participating. Once the wiki was established, there would have been more opportunities for collaboration and participation.

3. If more information were available in the knowledge sharing wiki, would you read the wiki on a regular basis?

#	Answer		Response	%
1	Yes, I would read the wiki at least once per week.		16	13%
2	Yes, I would read the wiki more than once per week.		0	0%
3	Yes, I would read the wiki at least once per month.		15	13%
4	Yes, I would read the wiki, but not on a regular basis.		71	60%
5	No, I would not read the wiki.		17	14%
	Total		119	100%

Statistic	Value
Min Value	1
Max Value	5
Mean	3.61
Variance	1.34
Standard Deviation	1.16
Total Responses	119

The large majority (60%) of professionals who responded to the question would read the wiki, but not on a regular basis. An equal percentage of respondents felt they would read the wiki at least weekly and monthly. Some respondents did ask if the wiki contained any notification mechanisms to alert professionals if new content was posted or modified. This feature might increase the frequency professionals would view content in the wiki and actively participate in the wiki. Many IT professionals are accustomed to frequently receiving electronic information and quickly judging its usefulness. Conversely, IT professionals actively seeking information from a resource, such as a wiki, occurs much less frequently and irregularly. Therefore, convincing professionals to visit the wiki would require regular reminders and encouragement. Educause was also willing to provide additional resources to promote the wiki after a core group was established to participate in the wiki.

4. If more information were published by your peers in the knowledge sharing wiki, would you be likely to add or modify content?

#	Answer		Response	%
1	Yes, I would contribute to the wiki weekly.		1	1%
2	Yes, I would contribute to the wiki monthly.		6	5%
3	Yes, I would contribute to the wiki when I had time.		81	69%
4	No, I would not contribute to the wiki.		29	25%
	Total		117	100%

Statistic	Value
Min Value	1
Max Value	4
Mean	3.18
Variance	0.30
Standard Deviation	0.55
Total Responses	117

The responses to this question show that if there was more content and a core group of professionals willing to start and maintain the wiki, there could have been momentum for professionals to use the wiki and expand its use. Many professionals at different levels would find the wiki beneficial and would contribute content to the community as the wiki expanded. As previously mentioned, many IT professionals were apprehensive about identifying themselves as a self-proclaimed "expert" in a service area and preferred to contribute only after experts established service areas in the wiki.

5. Please rank order the reasons you chose NOT to participate in the wiki (1 being the top reason you chose not to contribute, 9 being the least reason you chose not to contribute).

#	Answer	1	2	3	4	5	6	7	8	9	Responses
1	a. Not enough time to contribute	57	16	7	9	2	5	2	1	3	102
2	b. Wiki is too structured	1	4	8	13	15	8	14	13	19	95
3	c. No one will ever use it	5	11	16	11	12	15	10	9	6	95
4	d. Too difficult to maintain	2	9	21	15	20	9	11	3	2	92
5	e. Anxiety over editing others content	2	9	9	5	13	15	14	15	10	92
6	f. Will not receive any incentive for contributions	4	1	6	8	10	14	14	16	16	89
7	g. Management does not recognize contributions	5	9	9	12	8	7	11	23	8	92
8	h. Needed more training to use the wiki tools	2	5	10	13	6	9	15	12	23	95
9	i. I have too many other resources and tools available	28	34	11	7	8	7	2	0	5	102
	Total	106	98	97	93	94	89	93	92	92	-

Statistic	a. Not enough time to contribute	b. Wiki is too structured	c. No one will ever use it	d. Too difficult to maintain	e. Anxiety over editing others content	f. Will not receive any incentive for contributions	g. Management does not recognize contributions	h. Needed more training to use the wiki tools	i. I have too many other resources and tools available
Min Value	1	1	1	1	1	1	1	1	1
Max Value	9	9	9	9	9	9	9	9	9
Mean	2.30	6.12	4.89	4.52	5.76	6.29	5.58	6.17	2.92
Variance	4.17	4.93	5.16	3.33	5.13	4.85	6.20	5.80	4.55
Standard Deviation	2.04	2.22	2.27	1.82	2.26	2.20	2.49	2.41	2.13
Total Responses	102	95	95	92	92	89	92	95	102

There are two reasons that are clearly the primary issues professionals have with participating in the wiki. Primarily, professionals feel they simply do not have time to contribute to the wiki. Professionals also feel there are plenty of other resources and tools available to use for learning about best practices. Although the wiki would take some time to initially get started, the more professionals became involved, they would realize it would not take much individual time to maintain since it would be maintained by the community. Also, professionals did not see the benefit of having a dedicated wiki for

professionals in higher education as a good reason to contribute. Perhaps because professionals have so many other tools they reference in their daily work, they did not perceive the wiki as a valuable tool.

All the other factors, namely, wiki structure, wiki maintenance, and editing others content, were evenly distributed in the results. While these factors do contribute to the success of a wiki, they were not the primary reasons professionals chose not to participate. If the wiki did have a core group of professionals engaged in the initial wiki (versus one person), professionals would have seen tangible benefits of community information sharing.

6. Please rank order the factors which might persuade you to participate in the wiki (1 being the top factor that would persuade you to participate, 4 being the lowest factor).

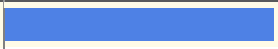
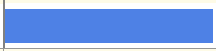
#	Answer	1	2	3	4	Responses
1	a. More time	64	21	15	4	104
2	b. More flexible wiki structure	3	19	38	38	98
3	c. Merit incentive (i.e., raises, bonuses, etc.)	11	18	28	43	100
4	d. Seeing other people participate in the wiki first	29	40	17	14	100
	Total	107	98	98	99	-

Statistic	a. More time	b. More flexible wiki structure	c. Merit incentive (i.e., raises, bonuses, etc.)	d. Seeing other people participate in the wiki first
Min Value	1	1	1	1
Max Value	4	4	4	4
Mean	1.61	3.13	3.03	2.16
Variance	0.77	0.69	1.06	1.00
Standard Deviation	0.87	0.83	1.03	1.00
Total Responses	104	98	100	100

The large majority of professionals agreed that if they had more time and they saw other professionals initially participating in the wiki, they would be encouraged to also participate. The time factor came up frequently as the top inhibitor to participating in the wiki. Incentives and wiki structure would also encourage participation, but these factors would be developed over time as the wiki progressed as an effective tool. Incentives might include an additional individual merit raise for evidence of professional development activities, or the wiki sponsor distributing regularly scheduled prizes for

contributions and activity. The structure would evolve as more professionals enhanced the wiki and professionals would be rewarded for their professional development in their positions.

7. Would you be more likely to participate if your management endorsed wiki participation?

#	Answer		Response	%
1	Yes		65	57%
2	No		50	43%
	Total		115	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.43
Variance	0.25
Standard Deviation	0.50
Total Responses	115

This topic was the most inconclusive in the survey with an even split between professionals who would or would not participate in the wiki if their management endorsed the wiki. This shows the divide that professionals have in regards to wiki participation even if their management endorsed the wiki. Many organizations do require professional development as part of their job responsibilities and will base a percentage of a merit raise on the amount of professional development completed. Participation in the wiki would benefit professionals with their professional development goals. Wiki participation would allow professionals a structured environment for sharing knowledge and ideas with others without the large time investment required for writing journal articles or developing conference presentations. Moreover, the wiki would show a demonstrable effort towards professional development and collaboration with others.

8. If you are in a management position, would you encourage your employees to participate in the wiki?

#	Answer		Response	%
1	Yes		56	47%
2	No		17	14%
3	I am not in a management position		47	39%
	Total		120	100%

Statistic	Value
Min Value	1
Max Value	3
Mean	1.93
Variance	0.86
Standard Deviation	0.93
Total Responses	120

Most managers would encourage their employees to participate in the wiki. However, no managers or other professionals volunteered to participate to start the wiki. The success of the wiki depends on participation. If management did initiate participation in the wiki, this would encourage their employees to participate. If all employee levels participate, the wiki would provide benefits for managers and technical staff.

Implications for Future Research

The community knowledge sharing wiki will have a poster presentation at the Annual Educause Conference in November 2012. This poster presentation will be an opportunity for professionals interested in the wiki to meet face-to-face and determine if there is enough interest to establish the wiki. The poster presentation will also highlight the benefits and goals of the wiki and in turn potentially motivate professionals to establish a core group to start the wiki initiative. The Annual Conference is a time for collaboration with IT professionals and this venue will be useful to see if the wiki can gain some momentum from professionals in all areas of IT.

A future article or paper will also be developed to share the outcomes of this project with the IT community at-large. The paper will further analyze the correlations which may exist between time

needed to participate in a wiki and the role of providing incentives to increase participation in a wiki. The paper will be submitted to scholarly journals and conferences.

Conclusions

Sharing ideas and best practices occurs daily on an ad hoc basis. Many IT professionals commonly use mailing lists to post a question and receive a fast answer from a colleague. Some engaging discussions take place on particular topics on these lists, but most professionals are just looking for quick advice or suggestions on solving a problem. This method of gaining knowledge can be effective, but information is frequently duplicated with many professionals asking the same questions, the knowledge not reaching the entire community, and the practices are not being shared in a format that is easily searchable and maintained on a regular basis. IT professionals use conferences as a method to expand discussions and collaborate with other colleagues on more in-depth topics. However, these conferences typically operate on an annual basis and rarely lead to on-going discussions and collaborations unless they are formalized (i.e., a consortium or constituent group).

The community knowledge sharing wiki embraces many needs of IT professionals in the higher education community. The knowledge sharing wiki would encourage regular collaborations and individual professional development, while also improving services being offered by IT organizations to their institution. Factors that should have contributed to the success of the wiki included:

1. Technology savvy community: Most of the community of IT professionals have used a wiki, understand the purpose of a wiki, and could have been easily trained to contribute to a wiki.
2. Collaborative focused community: IT professionals already participate in communities and could easily transform the knowledge being shared into a wiki entry for the benefit of the entire community. Also, it is commonplace for IT professionals working in higher education settings to collaborate and share knowledge with colleagues in other institutions.
3. Trust in Educause: Thousands of IT professionals rely on Educause to provide services to improve their professional development. Educause has numerous resources available for

professionals to use in their professional development. This wiki would have been an extension of those services.

4. Commitment from colleagues: Once collaboration began with an interested group of professionals, others would see the benefit of the work taking place and be committed to the success of the wiki.

One possible method to encourage participation would be to regularly schedule a general web conference call with interested parties to discuss ideas more fully and ask for volunteers to participate in various topics in the wiki. Regular discussions could have flushed out any issues with the proposed wiki and eliminated any apprehensions professionals may have regarding posting information in the wiki. Other alternatives for encouraging collaboration include direct correspondence with IT professionals, offering incentives to the executive committee and experts, and identifying other higher education consortiums to use the wiki (e.g., Google Apps users group, Consortium for Liberal Arts Colleges, SIGUCCS).

This study revealed the failure of the wiki collaboration had little to do with the technology or structure being proposed. This knowledge sharing wiki failed due to not having a strong community willing to invest the time to start the wiki and differentiate it from other beneficial resources. The inability to develop a strong core group for the formation of a wiki community could be due to the fundamental issues of: user lack of understanding of a wiki, user questioning the validity of the wiki content, user reluctance to invest time participating in a potentially short-lived wiki, or user information needs are not met by the wiki. During this project, the wiki did not attract a core group of participants to establish and maintain the wiki. It is hoped that future analysis and efforts will convince higher education IT organizations that their services could be more efficient by participating in the wiki.

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Appendix A

Copy of the email message requesting IT professionals to participate in the Wiki survey

Dear IT Professionals,

As part of my Master's Degree research at Rochester Institute of Technology, a knowledge sharing wiki was implemented at Educause, where IT professionals in Higher Education could share best practices (www.educause.edu/wiki/sharing). The wiki was open for contributions from different constituencies in higher education between January and March 2012. To date, participation and interest in the wiki has been very low. As part of the growing body of knowledge in collaborative computing, we are interested to know "why?"

Your answers to this eight question survey are instrumental to understanding the barriers and enablers to wiki participation. The survey will take no more than five minutes to complete. Please be assured all responses are anonymous, you will not be personally identified, and all findings will be reported in the aggregate. Your participation is voluntary and, at your discretion, you can terminate the survey prior to completion.

Follow this link to the Survey:

Take the Survey

Or copy and paste the URL below into your internet browser:

http://goo.gl/qnJuB

The survey will be open to responses until Friday, August 10, 2012. Please distribute it to your colleagues if you are able to do so.

A sincere thank you in advance, for your time and consideration!

Joe Karam

Graduate Student, Rochester Institute of Technology

Senior Manager, Collaboration Services Group, Princeton University