Creating an Information Technology Science Shop for Greater Madison:

Stage I: An Assessment of Nonprofits' Information Technology Issues.

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Introduction

One of the biggest challenges facing many nonprofit organizations is managing information [1]. And the technology solutions that can help them use information to its greatest impact are often unknown to the groups. They lack the knowledge to choose, manage, and troubleshoot their own technology, which often makes the technology itself a problem rather than a solution [2].

If higher education is going to help nonprofits meet their challenge, it must first meet its own challenge--finding enough students with enough skills on a regular enough basis for community organizations to feel confident that the civic engagement program will serve the community as much as the students [3]. Such programs never have the wide ranging expertise required to serve the diverse needs and challenges facing nonprofits. Thus, they have difficulty sustaining both the services they provide and even their own existence.

This project addresses those two challenges through the perspective of community informatics.[4] The goal in community informatics is to work collaboratively with communities and community organizations to use participatory action research to discover ways of using information technology to achieve power and self-sufficiency, and then implementing what they discover. Our specific strategy for using the community informatics approach will be to

adapt the European "science shop"[5] model to information technology issues. European science shops are different from U.S. civic engagement offices in two important ways. First, they adopt relatively narrow agendas, focusing on a single area of expertise rather than trying to provide relatively unskilled generalist services. Second, they are organized to respond specifically to community-identified needs rather than being driven by curricular-defined offerings.

We will create an information technology science shop in collaboration with Madison's premier nonprofit information technology assistance provider, DANEnet.[6] The main task of this project phase is to use a participatory action research process to diagnose nonprofits' information and communication technology issues.

Method

A core group of Madison area nonprofit organization staff guided the overall design of the research. We began by contacting approximately 500 Madison area community organizations to conduct an initial assessment of their interests in having better information technology support. The results of that research are reported in Appendix A at the end of this document.

We then contacted all 68 organizations that responded to the initial survey to request one-hour in-depth interviews (interview questions are listed in Appendix B). Students went through one week of in-class training and then one week of training with nonprofit organization representatives. Each student then chose 5-6 organizations to request interviews with. Thirty-four organizations agreed to interviews.

The students then divided into pairs and we divided up the questions among them. Since the interviews primarily used open-ended questions, rather than forcing interviewees to choose among pre-set answers, the data had to be coded for themes. Each pair of students coded the data for major and minor themes in one or more questions. Coding for themes involves looking for common answers to a question [7]. Working in pairs helps to establish reliability in the coding process.

Another group of students conducted a case study [8] of the University of Wisconsin Division of Information Technology (DoIT) Help Desk. The DoIT Help Desk is staffed by students, and the purpose of the study was to determine the extent to which such a model could be adapted to nonprofit support.

Findings

The students present detailed findings in the following chapters. Below are what we see as among the most important findings:

1. All organization staff are interested in donated computers but worried about them at the same time, especially for their main offices.

2. Consistency of computers in the office is important to organization staff, especially for networking.
3. Website development is very important to organization staff.
4. Staff technology education is very important with continuous diagnosis, education, and follow-up, especially in regard to software.
5. “e-communication” is seen as important to furthering organizational mission
6. Budget constraints hinder getting adequate tech support
7. Nearly all computers are running Microsoft XP, which could create challenges as XP is discontinued and organizations need to buy new computers to be compatible with Microsoft Vista.
8. The interviewing process allowed people to reflect on their computer technology and clarify their needs, which may point to the usefulness of providing support for technology strategic planning.
9. Organization staff strongly desire one-on-one on-site service.
10. Computer labs need space and ongoing maintenance.
11. The DoIT study emphasized the importance of modular training and an emphasis on customer service, which NPOs also desire.
12. The DoIT study showed the utility of a strong online knowledge base to support trouble-shooting.
13. The DoIt Help Desk model may require more resources than are available at this time.

Next Steps

This research will be used at a May 12 planning event to develop a basic plan for a student-based technology assistance program for Madison area nonprofits. We are in the process of seeking funding to support implementation in fall of 2008.

Notes

[1] See Stoecker, Randy. 2005. "Are We Making a Change: The Data and Research Needs of Toledo Area Non-Profit Organizations." American Sociological Society Annual Meetings, Philadelphia.

[2] See Stillman, Larry, and Randy Stoecker. 2005. "Structuration, ICTs, and Community Work." Journal of Community Informatics, Vol. 1, no. 3.. http://ci-journal.net/viewarticle.php?id=54&layout=abstract.

[3] See Sandy, Marie. 2006. “Different Worlds and Common Ground: Community Partner Perspectives in Campus-Community Partnerships. Michigan Journal of Community Service Learning. Vol. 13, no. 1. Also see Stoecker, Randy. 2006. Community Organizations and Service Learning. http://comm-org.wisc.edu/sl/news.php

[4] Michael Gurstein. 2003. Community Informatics.http://www.communities.org.ru/ci-text/ci-v2.doc

[5] See Living Knowledge: The International Science Shop Network. http://www.scienceshops.org/

[6] http://danenet.wicip.org/

[7] Graham R. Gibbs and Celia Taylor. 2005. How and What to Code. http://onlineqda.hud.ac.uk/Intro_QDA/how_what_to_code.php. John V. Seidel. 1998. Qualitative Data Analysis. ftp://ftp.qualisresearch.com/pub/qda.pdf

[8] Stoecker, Randy. 1991. "Evaluating and Rethinking the Case Study." *The Sociological Review* 39:88-112.

APPENDIX A—Initial Survey Results

Results	
No of responses: 68	

1. Do you budget for technology expenses?		
Answer	**Count**	**Percentage**
No answer	4	5.88%
Yes (Y)	44	64.71%
No (N)	20	29.41%

2. How many computers does your organization have for the exclusive use of staff, including laptops? Please do not count computers in a computer lab used by program participants or the public.	
Calculation	**Result**

Standard Deviation	13.107850470029
Average	12.088235294118
Minimum	0
1st Quartile (Q1)	2
2nd Quartile (Median)	7.5
3rd Quartile (Q3)	14.75
Maximum	70

3. How many of those computers did you buy new in the last three years?	
Calculation	**Result**
Standard Deviation	6.8633945771103
Average	4.3
Minimum	0
1st Quartile (Q1)	0
2nd Quartile (Median)	2
3rd Quartile (Q3)	5
Maximum	38

4. How many of those computers were donated?	
Calculation	**Result**
Standard Deviation	3.4335952185089
Average	1.7

Minimum	0
1st Quartile (Q1)	0
2nd Quartile (Median)	0
3rd Quartile (Q3)	2
Maximum	20

5. On a scale of 1 to 5, with 1 being very reliable and 5 being very unreliable, how reliable is your information technology?

Answer	Count	Percentage
1--very reliable (1)	9	13.24%
2 (2)	25	36.76%
3 (3)	19	27.94%
4 (4)	12	17.65%
5--very unreliable (5)	3	4.41%

6. On a scale of 1 to 5, with 1 being very satisfied and 5 being very dissatisfied, how satisfied are you with the usefulness of your information technology to your organization?

Answer	Count	Percentage
1--very satisfied (1)	7	10.29%
2 (2)	20	29.41%
3 (3)	22	32.35%
4 (4)	12	17.65%
5--very dissatisfied (5)	7	10.29%

7. If your paid staff provides information technology support, please rate how satisfied your organization is with that support.

Answer	Count	Percentage

No answer	27	39.71%
1--very satisfied (1)	7	10.29%
2 (2)	10	14.71%
3 (3)	12	17.65%
4 (4)	8	11.76%
5--very dissatsified (5)	4	5.88%

8. If one or more volunteers provide information technology support, please rate how satisfied your organization is with that support.

Answer	Count	Percentage
No answer	42	61.76%
1--very satisfied (1)	4	5.88%
2 (2)	9	13.24%
3 (3)	6	8.82%
4 (4)	4	5.88%
5--very dissatsified (5)	3	4.41%

9. If paid consultants provide information technology support, please rate how satisfied your organization is with that support.

Answer	Count	Percentage
No answer	30	44.12%
1--very satisfied (1)	11	16.18%
2 (2)	11	16.18%
3 (3)	12	17.65%
4 (4)	3	4.41%

5--very dissatsified (5)	1	1.47%

10. If you use websites to get information technology support, please rate how satisfied your organization is with that support.

Answer	Count	Percentage
No answer	34	50.00%
1--very satisfied (1)	2	2.94%
2 (2)	9	13.24%
3 (3)	15	22.06%
4 (4)	5	7.35%
5--very dissatsified (5)	3	4.41%

12. Does your organization manage a computer lab available to community members or clientele?

Answer	Count	Percentage
No answer	8	11.76%
Yes (Y)	15	22.06%
No (N)	45	66.18%

13. Does your organization have a strategic plan?

Answer	Count	Percentage
No answer	3	4.41%
Yes (Y)	46	67.65%
No (N)	19	27.94%

14. If your organization does have a strategic plan, does it include a section on information technology?

Answer	Count	Percentage

No answer	23	33.82%
Yes (Y)	17	25.00%
No (N)	28	41.18%

15. Would you like people in your organization to learn more about how to use information technology

Answer	Count	Percentage
No answer	9	13.24%
Yes (Y)	55	80.88%
No (N)	4	5.88%

16. How important is it for your organization to develop your information technology capacity?

Answer	Count	Percentage
No answer	1	1.47%
1--very important (1)	28	41.18%
2 (2)	18	26.47%
3 (3)	17	25.00%
4 (4)	4	5.88%
5--not at all important (5)	0	0.00%

17. How many full-time equivalent staff does your organization have?

Calculation	Result
Sum	978.37
Standard Deviation	25.572965323329
Average	14.387794117647

Minimum	0
1st Quartile (Q1)	6
2nd Quartile (Median)	5
3rd Quartile (Q3)	13
Maximum	150

18. What is your annual operating budget?

Answer	Count	Percentage
No answer	3	4.41%
less than $100,000 (100)	13	19.12%
$100,001 to $200,000 (200)	5	7.35%
$200,001 to $500,000 (500)	21	30.88%
$500,001 to $1,000,000 (1000)	13	19.12%
more than $1,000,000 (over1)	13	19.12%

	5. On a scale of 1 to 5, with 1 being very reliable and 5 being very unreliable, how reliable is your information technology?					
18. What is your annual operating budget?	1	2	3	4	5	(empty)	**Total Result**
Less than 100,000	2	4	4	2	1		**13**
100,000 to 200,000	1		2	2			**5**
200,001 to 500,000		7	6	6	2		**21**
500,001 to 1,000,000	4	2	6				**12**
(empty)	1	1		1			**3**

Over 1 million	1	10	1	1		**13**
Total Result	**9**	**24**	**19**	**12**	**3**	**67**

	6. On a scale of 1 to 5, with 1 being very satisfied and 5 being very dissatisfied, how satisfied are you with the usefulness of your information technology to your organization?					
18. What is your annual operating budget?	1	2	3	4	5 (empty)	**Total Result**
Less than 100,000	2	3	5	1	2	**13**
100,000 to 200,000		1	1	2	1	**5**
200,001 to 500,000		3	8	7	3	**21**
500,001 to 1,000,000	3	3	4	2		**12**
(empty)	1	1	1			**3**
Over 1million	1	9	2		1	**13**
Total Result	**7**	**20**	**21**	**12**	**7**	**67**

Cross-variable analyses:

	6. On a scale of 1 to 5, with 1 being very satisfied and 5 being very dissatisfied, how satisfied are you with the usefulness of your information technology to your organization?					
1. Do you budget for technology expenses?	1	2	3	4	5 (empty)	**Total Result**
(empty)	1		2	1		**4**
N	1	4	2	7	5	**19**

Y	5	16	17	4	2	**44**
Total Result	**7**	**20**	**21**	**12**	**7**	**67**

	5. On a scale of 1 to 5, with 1 being very reliable and 5 being very unreliable, how reliable is your information technology?					
1. Do you budget for technology expenses?	1	2	3	4	5	(empty)	**Total Result**
(empty)	1	2		1		**4**
N	1	5	5	6	2	**19**
Y	7	17	14	5	1	**44**
Total Result	**9**	**24**	**19**	**12**	**3**	**67**

	6. On a scale of 1 to 5, with 1 being very satisfied and 5 being very dissatisfied, how satisfied are you with the usefulness of your information technology to your organization?					
14. If your organization does have a strategic plan, does it include a section on information technology?	1	2	3	4	5	(empty)	**Total Result**
(empty)	3	5	6	6	2	**22**
N	1	8	10	5	4	**28**
Y	3	7	5	1	1	**17**
Total Result	**7**	**20**	**21**	**12**	**7**	**67**

	5. On a scale of 1 to 5, with 1 being very reliable and 5 being very unreliable, how reliable is your

	information technology?						
14. If your organization does have a strategic plan, does it include a section on information technology?	1	2	3	4	5	(empty)	**Total Result**
(empty)		3	7	5	7		**22**
N		1	11	10	3	3	**28**
Y		5	6	4	2		**17**
Total Result		**9**	**24**	**19**	**12**	**3**	**67**

APPENDIX B—In-depth interview questions

1. In what ways are you satisfied and dissatisfied with your computer technology in accomplishing the tasks you listed [from a separate sheet completed prior to the interview]?
2. What would your organization like to do with computer technology that you currently cannot? Why can't you currently do those things? [probe for time, money, skill, management issues]
3. What is your organization's current primary source of tech support? What do you like about that source? What would you like to change about that source? [probe for getting tech support information off the web].
4. What brand and version of operating system do your computers currently run [Microsoft Windows-95, 98, ME, XP, Vista; or Mac-OS 9, OSX, OS 10.5]?
5. If your organization has donated computers, from where did you receive them? In what ways are you satisfied and/or dissatisfied with them? If you don't have donated computers, why not?
6. We are using this information to develop a student-based computer technology assistance program for nonprofits. What are the most important reasons you need computer technology assistance? What advice do you have on how we should design the program and train students?
7. [if have a technology strategic plan] How have you been using your technology strategic plan? [if do not have a technology strategic plan] Why do you not have a technology strategic plan?
8. [for organizations with public computer labs only] what challenges do you face in managing a computer lab?
9. [if time allows] What computer technology successes has your organization had?
10. Is there anything else you would like to tell us about your computer technology?