

# **Bridging the Digital Divide: Lessons from the East Palo Alto Community Network**

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## Abstract:

This paper reports the efforts of the East Palo Alto Community Network (“Community Network” for short) and the success of its two programs over the past three years. The first program, Technology Access Points (TAPs), conveniently locates centers in East Palo Alto where residents may access computers, the Internet, fax machines, and copiers. The second program, EPA.net, is an online resource center for the East Palo Alto Community that allows residents to post news articles and event information relevant to the city that often cannot be found anywhere else. The site also contains numerous other online resources for residents.

Plugged In outlined four outcomes at the outset of this project to track the success of the Community Network Project:

- 1) Increased Participation of Community Residents in Online Information and Idea Exchange, Leading to Increased Sense of Commitment to the Community
- 2) Increased Technology Skills and Use of Technology by Staff of Community Based Organizations, Leading to Increased Efficiency and Effectiveness
- 3) Increased Access to Relevant Information for Community Residents, Leading to Increased Ease in Utilizing Community Services
- 4) Increased Technology Skills for Community Residents, Leading to Greater Educational and Employment Opportunities

In general, all four outcome goals have been met. Quantitative and qualitative data suggests that both Community Network programs have led to an increase in the number of residents who participate in online information exchange and a subsequent increase in these residents’ sense of connection to the greater East Palo Alto community. Similar data also indicate that there has been an increase in technological skills and thus educational and employment opportunities for residents. Meanwhile, qualitative evidence indicates that the second and third outcome goals, increased technology skills for staff of community based organizations and increased efficiency and effectiveness in such organizations, as well as increased access to relevant information for residents, were also met through the TAPs and EPA.net programs.

Our analysis has led us to make five recommendations for improvements in the Community Network project: more aggressive advertisement of EPA.net, stronger outreach to other CBO's, promoting unused aspects of EPA.net, designating specified places and times for adults in TAPs, and design improvements to the layout of EPA.net.

This paper is an adaptation of a report that was written for the Technology Opportunities Program (TOP) of the U.S. Department of Congress, evaluating the Community Network's use of TOP funding. The plan is to evolve the paper in an academic direction, and we would appreciate comments on relevant other projects to use for comparison. As a preliminary step in this direction, we have included a list of references at the end of the main body of this paper.

# INTRODUCTION

## *The East Palo Alto Community Network*

East Palo Alto is a vibrant, low-income, multi-ethnic and multi-lingual community of 29,506 people in the San Francisco Bay Area. While residents in neighboring Silicon Valley cities have prospered greatly with the growth in technology in recent decades and many have access to technology, many East Palo Alto residents do not have access to computers and the Internet. The East Palo Alto Community Network seeks to close this digital divide.

The Community Network consists of two resources. Located in numerous accessible locations throughout East Palo Alto, the Technology Access Points (TAPs) provide computer and Internet access and training to adults and youth in East Palo Alto. Residents may use the easy-to-reach facilities free of charge. Although the local public library does provide computer and Internet access, residents are often frustrated by time limits and reservation requirements placed on use of these machines. There are simply not enough machines to meet the population's needs. The introduction of nine TAPs in the community greatly increased the number of public computers and allowed many adults and children to learn to use a computer and/or the Internet for the first time. Besides increasing their technological skills, with the TAPs, residents could perform online job searches, research educational information, look up important personal information, and network with fellow community members.

EPA.net, the second Community Network project, is an online resource center for the East Palo Alto community. It allows residents to get up-to-date information about current issues in their neighborhood. There is no local newspaper in the city, and residents often must turn to articles in newspapers published in other nearby cities if they want to find out about local issues. EPA.net is designed to "be a real voice for the community by providing families, businesses and community-based organizations with online tools that increase their capacity to serve their local community."<sup>1</sup> By listing upcoming community events, providing a space for residents to write and post relevant news articles, and hosting a forum space for the discussion of important local issues, EPA.net helps keep residents up-to-date on what is happening in the city, allows other community organizations to publicize their efforts, and facilitates a sense of community spirit. This community Website also offers free file storage, photo albums, and other resource pages, such as a comprehensive online directory. It also hosts the Websites of several local community-based organizations.

## *The Partnership for Internet Equality and Community Engagement (PIECE)*

Began in January 2002, PIECE brings together students and faculty affiliated with the Symbolic Systems Program (SSP) at Stanford University and the East Palo Alto Community Network to work on digital divide issues in East Palo Alto. Goals of the partnership include enhancing how effectively the East Palo Alto Community Network promotes community involvement and addresses the collective and individual needs of East Palo Alto residents; ensuring a robust user base for EPA.net and TAPs; closing the

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<sup>1</sup> EPA.net Website, "About Us", <http://www.epa.net>.

gaps in Internet access, technology control and ownership and computer usage that exist between and within different populations in East Palo Alto; facilitating uses of the Internet that empower disadvantaged residents to gain more of a voice in community decision making; and sharing what we learn through reaching these goals with the East Palo Alto community, other communities, and academic researchers.

Over the past three years, SSP has performed numerous projects with the Community Network. In 2003, after discovering that the face-to-face nature of meetings in East Palo Alto and other communities does not permit many willing residents who have time constraints to participate in community decision-making, we began creating a tool for online deliberation. Called "Deme", this online software is still underdevelopment, but available in an alpha-stage version at <http://www.groupspace.org>. From spring 2002 through winter 2005, SSP also performed three Community Technology Usage Surveys. Residents were interviewed about their computer and Internet use, involvement with the community, and interest in Community Network programs. The results of these surveys were used not only to quantitatively illustrate the need for Community Network programs in East Palo Alto but also to help Community Network staff determine how to perform better outreach. PIECE has also recruited Stanford student volunteers to work at the TAPs, where they designed and taught two-hour Internet tutorials.

# METHODOLOGIES

## *Methodology I. Community Survey Regarding Computer Usage*

First created in 2002, three versions of this survey have been administered, including a community-wide survey just before the launch of EPA.Net in 2002 with a sample size of 142, a more targeted survey, focusing on residents who are less likely to know about the Internet, in 2003 with a sample size of 46, and another community-wide survey in 2004 and the early weeks of 2005 with a sample size of 131. From here on, these cycles of the survey will be known as the 2002, 2003, and 2004 versions respectively. The survey, which has varied in content somewhat but with substantial overlapping content to allow cross-year comparisons, was originally designed to gauge how familiar residents of East Palo Alto are with computers and the Internet, and if residents would be interested in the technology resources it has to offer. The 2003 and 2004 cycles also served the purpose of evaluating how many residents are aware of Community Network Project resources and helping Plugged In determine if there were particular communities in which it needed to expand its outreach efforts. Although the original intent behind the survey differs somewhat from the measurable outcomes mentioned above, there are many areas where data from each cycle can be appropriately applied to this evaluation.

A convenience sample was gathered for all three cycles of the survey. Although samples were not randomized, interviewers ensured that the demographics of each sample were statistically comparable to the demographic data listed for East Palo Alto on the 2000 Census. In order to achieve this, respondents were approached and interviewed at a variety of community events and commercial areas throughout the city.

There are four types of the survey: an oral type in both Spanish and English, and written types also in Spanish or English. Blank copies of each version of the survey can be found in the appendix. The data from each survey can also be found there.

## *Methodology II. Technology Access Points (TAP) Exit Interviews*

Between May and July 2004, consultants conducted exit interviews at all nine TAP locations. A representative from each organization where a TAP was located responded to a two-page written survey. Respondents were asked to describe how hosting a TAP impacted their organization, the nature of their collaboration with Plugged In, and rate how successful the program was overall. Copies of these interviews can be found in the appendix.

To analyze these questionnaires, we searched for common themes in respondents' answers with a particular focus on the "impact on the organization" question. Furthermore, these 2004 responses were compared to assessments conducted three months after TAPs began providing services in late 2002 and to one-year evaluations conducted in 2003.

## *Methodology III. EPA.net Case Studies*

In Fall 2003 and Spring 2004, under the direction of EPA.net's content manager, students from Stanford University interviewed resident contributors to EPA.net, Community Advisory Board (CAB) members, and staff from organizations that had been featured on the site. While the specific questions each interviewee was asked varied from

case study to case study, each respondent was generally encouraged to discuss his/her relationship with EPA.net and how the site has affected her personally or the organization she represents. A total of thirteen case studies were conducted.

These studies were analyzed in a manner similar to that of the exit interviews. We searched for similar comments within each of the reports that were relevant to one or more of the measurable outcomes.

#### *Methodology IV. EPA.net User Tracking*

Plugged In used server traffic software to track the number of users and visits EPA.net receives. They have also kept records of how many people post to EPA.net. We evaluated these statistics to see how rapidly use of the site has increased over the past two years. We also reviewed the posting history to see if there has been an increase in the number of East Palo Alto residents who have become actively engaged with the site.

#### *Methodology V. EPA.net Observational Records*

In order to evaluate what EPA.net currently offers to the East Palo Alto community, we performed a spot check of the site on April 6, 2005. We counted how many organizations were linked to the site, noted the nature of the articles current posted on it, and reviewed the number of city-specific resources (such as job information and bus schedules) that are currently on the site.

# ANALYSIS OF EXPECTED OUTCOMES

In this section, the reader will find a detailed evaluation of the success in relation to each of the four outcome goals Plugged In listed in its Start-Up documentation for TOP. Our approach to analysis and central findings are listed under each goal. General conclusions drawn from these findings and recommendations for the future may be found in the subsequent sections of this evaluation.

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## ***Goal 1: Increased Participation of Community Residents in Online Information and Idea Exchange, Leading to Increased Sense of Commitment to the Community***

### **Analysis Approach**

This outcome goal was divided into two parts, the first of which was investigating whether TAPs and EPA.net have increased East Palo Alto residents' participation in online activity. Data from the community usage survey were used to quantitatively research the success of this part of the outcome. Although the questionnaire did not directly ask respondents if use of Community Network Project programs increased their use of the Internet to exchange information, it did ask the following the questions:

- Have you heard of EPA.net? If yes, have you used it?
- Have you heard of the TAPs (Technology Access Points)? If yes have you visited one?

Because EPA.net is in and of itself a Website for information exchange, we inferred that a demonstrated increase in the use of EPA.net also statistically represented "increased participation of community residents in online information and idea exchange." The second set of questions provided speculative answers to our inquiry. Because one of the main draws to the Technology Access Points is that they provide Internet access, we surmised that an increase in use of TAPs would suggest that there was some general increase in the number of East Palo Alto residents who participate in online information exchange in the past two years.

We also reviewed EPA.net tracking data and posting history to evaluate this first half of the goal, looking for an increase in the number of site users as well as an increase in the number of residents who post to the site. Finally, we reviewed TAP exit interviews and case studies and looked for comments from interviewees concerning the number of people who use EPA.net and TAPs.

The second element of evaluating this outcome involved determining whether or not use of TAPs and EPA.net led to an increased sense of commitment to the community among residents. We employed data from the 2004 cycle of the community usage survey to research this, particularly focusing on responses to the questions, "What do you find most useful about EPA.net?" and "Where do you get your news about the community?"<sup>2</sup> For the former question, we looked for responses that showed a sense of involvement in the East Palo Alto community, such as "access to community news" and "awareness of community issues." For the latter question, we evaluated the number of people who listed EPA.net as one of their answers.

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<sup>2</sup> The first question was not asked on the 2002 and 2003 versions of the survey.

Finally, we also reviewed qualitative data from TAP exit interviews and case studies to evaluate the second half of this outcome. In each of these data sets, we searched for reports that use of EPA.net and/or TAPs led to a greater awareness of community issues, familiarity with resources available in East Palo Alto, knowledge of community events, and a sense of connection to the community. Such answers illustrate an “increased sense of commitment to the community.”

## **Findings**

Comparisons between the 2003 and 2004 versions of the community usage survey suggest that EPA.net is rapidly becoming a more visible resource in the East Palo Alto community. For both cycles, respondents were asked, “Have you heard of EPA.net?” Those who responded yes to this question were then asked, “Have you used it?” The 2003 survey was only performed in street locations, where residents were thought to be less likely than those attending community events to know about computers and Internet resources in the city. For a valid comparison, therefore, we restricted the use of data from the larger 2004 survey to street locations, where the population would be expected to be similar to those sampled in 2003.

In 2003, only 2% of the total sample answered yes to both questions. This number rose to 9% in the comparison sample from 2004.

Data from the questions concerning TAPs suggest a correlation between TAP use and EPA.net use. Again 2% of 2003 respondents and 12% of 2004 respondents answered affirmatively to both questions, “Have you heard of the Technology Access Points (TAPs)?” and “Have you visited one?”

Tracking data also shows that use of EPA.net has risen drastically in the past two years. In the first measured period from June 24 to October 2, 2003, the site averaged 236 users per day. Now, one of the most recent periods showed an average of 2,082 users per day. The number of total visiting users rose from 10,042 visits between October 2003 and January 2004 to 56,206 visits between January and February of 2005.

Four TAP exit interviewees described how their center increased the number of Internet users in the East Palo Alto community. For example, a staff member of the East Palo Alto Senior Center noted that “now ‘our users’ are using technology not only for access to the Internet, but as part of their lifestyle: the way they communicate, the way they get the news, the way they create/produce documents, etc., the way they get entertainment...all has changed for the best because of TAP.”<sup>3</sup>

Meanwhile, two case study interviewees noted how much use of the EPA.net website has increased since they first became involved with it. “CAB member feels confident that EPA.net is continuing to grow, as evidenced by the increasing number of contributors and visitors to the site,” noted one student reporter who interviewed an EPA.net Community Advisory Board member.<sup>4</sup> “According to another member, EPA.net has seen success....The site has only grown in popularity and impact since its creation, receiving more visits by the day,” notes another student who interviewed another CAB member.<sup>5</sup>

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<sup>3</sup> Cecily Vaughters-Johnson, East Palo Alto Senior Center TAP Exit Interview

<sup>4</sup> Interview of Yolanda Rhodes by Will Greene

<sup>5</sup> Interview of Ruben Avelar by Christina Ward

Case study interviewees collectively made 36 comments about the site. 19% of these comments were categorized as “information about community events” and another 42% were qualified as “access to community news.” This suggests that those who use EPA.net do so to feel more connected to what is occurring in their community.

Out of the 131 respondents, 95% answered the question, “Where do you get your news about the community?” and gave a total of 243 responses. Seven percent of these responses were “EPA.net.” This suggests that, though EPA.net users recognize the site as a news source, it still has a ways to go in being recognized as such in the overall community. In other words, though more residents may see EPA.net as a general tool to increase community spirit in East Palo Alto, it appears that few are familiar with this particular community-connecting use of seeing it as a news source.

Many case study reports noted that interviewees described community engagement and forming connections within the community as some of the benefits of using Community Network programs. For example, one case study concerned an interview with a city official who had written an article for EPA.net.

Lily believes that EPA.net provides many things to the community. First off, she likes that ‘just regular people’ can contribute. ‘The city doesn’t have a newspaper or regular forum for exchange. So this gives an opportunity for everyone to do that. It has great potential.’...Finally, even though she doesn’t contribute specifically, outside of her Cooley Landing article, she knows people who have written articles that relate to her area of work. EPA.net is a means of connecting her to these people.<sup>6</sup>

While this respondent praises the site for its efforts to get all residents involved, another respondent notes how publishing an article on the site can inadvertently help residents become more familiar with local community organizations. “EPA.net has greatly benefited the Block Clubs, allowing for more publicity,” noted one member of an East Palo Alto Block Club. “It has helped the Block Clubs become more “visible in the community.”<sup>7</sup>

The TAP exit interviews showed that a few organizations that hosted TAPs also commented on how the center affected their relationship with the community. Two organizations, City Team Ministries (CTM) and OICW, noted that their TAP connected them to the larger EPA community. Furthermore, they remarked that the TAPs also help connect other organizations to one another. CTM noted that there was a “two-way-street” dynamic in hosting a TAP. The organization felt that it was “in and among the groups that want to see changes in the city” and exposed to other similar organizations while other organizations became exposed to CTM.<sup>8</sup>

The Community Network led to the establishment of PIECE, the Partnership for Internet Equity and Community Engagement (see <http://piece.stanford.edu>). This joint project between Plugged In and the Symbolic Systems Program at Stanford has been funded by the Vice Provost for Undergraduate Education at Stanford since January 2002 as a community-based research initiative, and has supported 10 students for academic year and summer research with total funding of \$45,000. A number of projects within PIECE have as their aim the enhancement of community participation online and use of

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<sup>6</sup> “Lily Lee,” Interview of Lily Lee, Written by Ben Klein

<sup>7</sup> “Block Clubs of Palo Alto,” Interview of John Chavez, written by Jessica Marie Carter

<sup>8</sup> Angel Ruiz, City Team Ministries TAP Exit Interview, interviewed by Kathy Walters

the Internet, including the Deme platform for online deliberation being developed for community groups to interact online, the survey research reported here, and student projects aimed at getting residents to use the Internet. This program represents leveraged funds that would not have been allocated to East Palo Alto-based projects were it not for the Community Network coming into existence.

## ***Goal 2: Increased Technology Skills and Use of Technology by Staff of Community Based Organizations, Leading to Increased Efficiency and Effectiveness***

### **Analysis Approach**

TAP exit interviews, the case study interviews, and observational recordings of the EPA.net website were used to evaluate this outcome. In the exit interviews and case studies, we searched for reports of how staff members from other community-based organizations (CBOs) had been involved with Community Network programs. We also searched for information concerning how hosting a TAP increased organizations' efficiency in how they performed their internal, administrative duties as well as reports of how having the TAP improved their external effectiveness and bettered their ability to provide their services. In observing EPA.net, we looked for how other organizations were involved with the site, particularly viewing how many CBO staff members used the site to improve their outreach to the community by linking their organization to the site and/or posting relevant articles.

### **Findings**

TAP exit interviews demonstrated that the staff of the TAPs' host organizations did gain computer skills that helped increase their internal efficiency. One host organization, Free At Last, commented that the TAPs had a "tremendous impact" on the organization and that they were able to "stream line business operations."

There is now DSL access for offices, with direct connection to the county, which makes the transfer of data much more efficient. Payroll data is also now input and transmitted very fast. In general the administrative staff is doing now a number of things that they didn't before thanks to the technology that the TAP has brought: keeping the books, auditing records of clients that used to be done by hand, etc. It is really a big change in how Free at Last operates.<sup>9</sup>

Five other TAPs had similar positive comments. "The TAP has changed the way the center does administrative tasks," commented one representative from the East Palo Alto Senior Center."<sup>10</sup> He noted that because the center is now more dependent upon technology, staff productivity has increased.

Case study interviews show that local CBO staff also noted that they were better able to advertise to residents through both TAPs and EPA.net. In one report, the

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<sup>9</sup> Bob Hoover, Free At Last TAP Exit Interview

<sup>10</sup> Cecily Vaughters-Johnson, Senior Center TAP Exit Interview

interviewee described how the site helped the CBO staff member she had spoken with for an EPA.net article.

Karen never thought that anyone noticed the work that she had been doing over the past two years for this project. The acknowledgement was both surprising and gratifying, connecting her and the community in a new way. After the article was posted, she received an onslaught of questions, not only from adults who wanted to know more, but from children as well. For those connected to the Internet, EPA.net has been a great resource for getting informed, allowing community members to make better use of the resource available to them. The article has served as a springboard for getting more involved.<sup>11</sup>

Five other reports also noted how becoming involved with EPA.net allowed non-profit staff members to publicize their organization's work, increasing the number of people reached by their service.

A review of EPA.net showed that thirty-seven community and youth development organizations were listed in the site's community directory.<sup>12</sup> Twenty-two of these listings included links to other websites, and twenty-one of these links were functioning. We also found that the youth services link on the site's homepage led us to the East Palo Alto Youth Development Online Center. A review of this site revealed a collaboration between EPA.net and the City of East Palo Alto, in which links to organizational profiles of over thirty youth serving CBOs are listed. As part of this collaboration, EPA.net hosted the site for the Community Services department of the city.

Though we were able to discover many fruitful connections between EPA.net and other organizations by browsing the site, there does not appear to be a complete, easy-to-find description of exactly what the Community Network can do for other organizations publicized on the site. This is perhaps an area where the program can be improved.

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<sup>11</sup> "Snapshot," Interview of Karen Kepney and Mikaya Strickling, Written by Christina Ward

<sup>12</sup> Image available in Appendix, p.21

### ***Goal 3: Increased Access to Relevant Information for Community Residents, Leading to Increased Ease in Utilizing Community Services***

#### **Analysis Approach**

To evaluate the success of this outcome in terms of EPA.net, we first observed what resources were posted on the site. In this manner, we were able to determine how accessing the site would allow a resident to be better able to use the community services available in East Palo Alto. We specifically searched for resources that residents would have difficulty finding elsewhere. Then, using the case study interviews, we looked at how being both actively involved in the site (i.e. writing an article) and simply visiting the site allows residents greater ease in participating in community services. We searched for comments concerning what residents were able to do with information they found through EPA.net.

To evaluate if TAPs achieve this outcome, we reviewed the TAP exit interviews looking for comments about how residents used the TAP centers to learn about community services.

#### **Findings**

In observing EPA.net, we found five resources that draw residents uniquely to the site, the first of which is the events calendar.<sup>13</sup> There is a calendar on the City of East Palo Alto website, but it does not appear to be updated as often—e.g. no events were listed for April 2005. The EPA.net events calendar, by contrast, appears to be kept up to date. This calendar allows residents to find out about community events without relying on methods of outreach that make it difficult to communicate efficiently with a wide, diverse audience, such as paper flyers or word of mouth.

The second resource of note is the articles written by residents.<sup>14</sup> These articles allow community members to discover important resources in their community that are not necessarily publicized in media sources from nearby cities. Residents can also read stories of what it's like to use these services or what their value is, written from the perspective of a fellow community member. In this manner, residents do not just learn about the existence of certain resources. Rather, they learn about such resources in detail. For example, in one article entitled "In Schools We Trusted" posted on March 25, 2005 on EPA.net, an East Palo Alto parent describes the opening of a tuition-free public charter school in the city. By reading this article, parents not only find out about the opening of a new school, but they can also hear why another local parent believes it is a good choice for children. Another recent article on EPA.net entitled "Supermarket Prayer Vigil," publicizes the efforts of five local organizations to bring a grocery store to the city. A reader may learn not only about these organizations, but also how he/she may become involved with them.

EPA.net's forums are a third resource that draws residents to the site. Here, residents may informally discuss resources available in the community and widely publicize them to others in a way that only an online tool can achieve. In particular, an education, a health care, and a general community service forum may be found on the

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<sup>13</sup> Image available in Appendix, p.21

<sup>14</sup> Image available in Appendix, p.20

site. One critique of this resource, however, is that use of these particular forum spaces has tapered off recently, with no posts in either of them for 2005.

The fourth resource of note is the public transit section of the EPA.net.<sup>15</sup> The site appears to be the only online resource that gives users a route map and schedule for the East Palo Alto Senior Shuttle. The free shuttle is open to all residents and takes riders to nearby medical centers and shopping areas, a resource that is very valuable in a city where there is no grocery store.

Finally, a fifth important resource on EPA.Net for the community are the community subsites created on the site for community partners such as One East Palo Alto, the East Palo Alto Bayshore Rotary Club, and New Perspectives. The OpenACS software that runs EPA.Net makes it possible for these groups to control their own content while having it hosted on Plugged In's server. This has clearly brought a Web presence to several organizations that had none before, and given them state of the art content management software for managing their sites.

A review of the case study interviews for this particular outcome goal also demonstrated the success of this outcome. One interviewee, an East Palo Alto resident since the age of nine, reported how writing an article for EPA.net encouraged her to become more active in local community organizations.

Volunteering was a very new concept to her; prior to writing for EPA.net she had never done any nonprofit work. According to the community writer, working for EPA helped her gain a new perspective on and appreciation for volunteering. This community website has given her a chance to express her views on events in EPA.<sup>16</sup>

Others who are actively involved with the site reported similar experiences. One EPA.net Community Advisory Board member noted that "she realized that her community possessed a number of community organizations working in many areas to make East Palo Alto a stronger and better community" as she became involved with the site.<sup>17</sup> Finally, another resident, who works at a local non-profit that works on environmental justice issues, commented on how the site exposes users to information about local issues that cannot necessarily be found elsewhere: "He really appreciates the fact that the content in EPA.net is different... 'Issue areas like environmental justice aren't given much voice in the general media.'" <sup>18</sup> In this manner, EPA.net exposes those who become involved with the site and those who view it to a wide array of community resources that they may have never heard of before.

As previously mentioned in the analysis of the preceding outcomes, comments from the TAP exit interviews illustrate that residents discover community services by going to the centers. Though they may be coming in specifically to use the TAP, residents may also inadvertently discover the resources the host organization has to offer. As City Team Ministries noted, hosting a TAP provided "a level of connectivity that was not there before... a level of exposure for City Team Ministries with the city of East Palo Alto."<sup>19</sup>

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<sup>15</sup> Image available in Appendix, p.19

<sup>16</sup> "Snapshot," Interview of Mikaya Strickling, Written by Christina Ward

<sup>17</sup> "Case Studies for EPA.net," Interview of Yolanda Rhodes, Written by Will Greene

<sup>18</sup> "Goro Mitchell: An EPA.net Contributor," Interview of Goro Mitchell, Written by Ben Klein

<sup>19</sup> Angel Ruiz, City Team Ministries TAP Exit Interview

## ***Goal 4: Increased Technology Skills for Community Residents, Leading to Greater Educational and Employment Opportunities***

### **Analysis Approach**

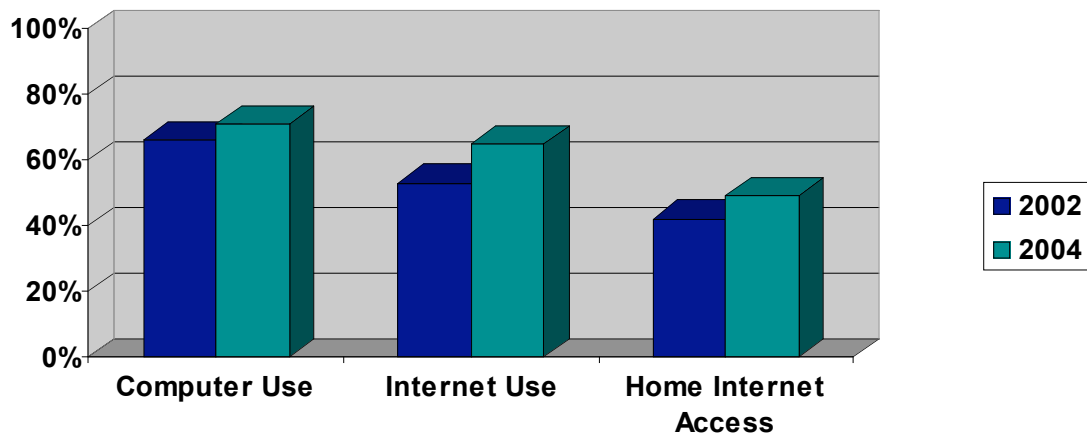
To evaluate this outcome, we first searched for evidence of an increase in technology skills in the East Palo Alto community that could possibly be attributed to the development of Community Network programs, particularly TAPs. We evaluated how the percentage of residents who responded “yes” to the following questions has changed between the 2002 and 2004 community usage surveys:

- Do you use a computer?
- Do you use the Internet or World Wide Web?
- Do you have Internet access at home?

To determine whether or not Community Network programs have allowed residents to have greater education and employment opportunities, we reviewed both the TAP exit interviews and the case studies and looked for comments affirming such an increase. We also used observational data from EPA.net to determine what type of education and employment resources are available on the Website.

### **Findings**

The community usage survey has shown slight increases in certain aspects of technology use in the community over the past three years. While 66% of respondents had used a computer in the 2002 cycle, the 2004 cycle of the survey noted that 71% of respondents used a computer. In 2002, 53% of respondents reported that they used the Internet; this figure rose to 65% in the 2004 cycle. Furthermore, 49% of respondents have Internet access at home in the 2004 cycle compared to 42% in the 2002 cycle. It is not clear how much, if any of these increases can be attributed to the Community Network project, but we note at least that access has improved for residents.



In their exit interviews, two TAPs commented on how their adult users were able to search for employment opportunities by using their facilities. The TAP “enables clients to put together a resume and look for jobs” a representative from the Ecumenical Hunger Project noted. At the end of her report, she noted that she “really wants to thank Plugged In for making computers available to people who otherwise do not have them. It brings

them up-to-date on what's going on in the world; it helps them to get jobs; it empowers them."<sup>20</sup> The second host, Saint Samuel's Church, noted that "just having the basic computer access for the community to learn how to operate a computer, use the internet, write a resume" is what worked best for their TAP.<sup>21</sup>

Many TAPs also noted the increased educational opportunities for children as well. Free At Last, when asked about the benefits of hosting a TAP, commented that "more and more people from the extended community (beyond staff and clients) are using the TAP, especially children that come, make their homework, play but also interact and teach each other what they are learning."<sup>22</sup> A low-income housing complex that hosted a TAP, the Light Tree Apartments, commented that local children "now have a more structured way to spend their afternoons. They used to be running around, and now they are learning because of the TAP. Other benefits include running special projects for kids/teens and training sessions for adults on how to do research, send e-mails, etc. using the Internet."<sup>23</sup> The increased educational opportunities for children are especially pronounced in the TAPs placed in or near schools. A staff from a school based TAP noted that, "[the] TAP provided an after-school tutorial center for the students to do their homework, print out their work, surf the net."<sup>24</sup>

It appears, however, that one area that can be improved upon to increase adult's use of TAPs and the employment opportunities and technological skills they get from them would be to have spaces designated solely for adults. Several TAPs noted that the presence of schoolchildren often inhibited adults learning and willingness to visit the TAP in the hours that school was not in session. One center noted that, "Parents report not wanting to come in when kids are around" because of the increased noise level and the fact that "there is nowhere to sit and they do not feel comfortable asking that the kids give up the computers for their use." Overall, "parents come to learn and are uncomfortable in this atmosphere." The representative does note that "separate areas for adults and children may have helped."<sup>25</sup> Plugged In staff have pointed out that the number of children attending the TAPs could have been a function of the TAP location since 3 of 9 TAPs were placed in agencies that naturally attracted children after-school – the 2 elementary school sites as well as the CTM – youth center. 3 other TAPs had children from local apartment complexes visit often- Light Tree, Free at Last and St. Samuel.

Case study interviews show that EPA.net has increased educational opportunities for those actively involved with the site. Those who write articles have the opportunity to better their communication skills. One report noted that the interviewee "enjoyed the balance of support and mentorship for improving her writing and editing skills from other community members, as well as the great freedom she receives in creating her own writing style... She summed up what EPA.net has done for her, by stating 'working for EPA.net has opened up many personal doors.'<sup>26</sup> Two other writers also noted how EPA.net's content manager is particularly helpful in the process of helping them fine-

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<sup>20</sup> Nevida Butler, Ecumenical Hunger Project TAP Exit Interview, interviewed by Kathy Walters

<sup>21</sup> Paul Bains, Saint Samuel's TAP Exit interview, interviewed by Kathy Walters

<sup>22</sup> Bob Hoover, Free At Last TAP Exit interview

<sup>23</sup> Anonymous, Light Tree Apartments Exit Interview

<sup>24</sup> Yvonne Casias, Belle Haven Parent Resource Center, interviewed by Kathy Walters

<sup>25</sup> Lalo Martinez, Cesar Chavez Parent Resource Center, interviewed by Kathy Walters

<sup>26</sup> "Snapshot," Interview of Mikaya Strickling, Written by Christina Ward

tune their writing style. “He helped him learn to add ‘a little life to the writing,’” noted one interviewee.<sup>27</sup>

EPA.net seems to expose residents to a wealth of education and employment opportunities. The City of East Palo Alto uses the site to post its current job openings as well as posting the job openings that come through the City’s First Source Hiring Program, through which businesses in the redevelopment areas hire local residents. In previous years, it has relied on paper fliers to promote its openings. A classifieds section lists other job openings as well. The “Job Help” link underneath EPA Resources lists seven other search engines users may use to search for jobs and lists links to 189 other sites that frequently post jobs. There is a “post your resume” feature on the site as well, and although a few postings can be found in the archives, it appears to be difficult to find. Better placement should make this resource more useful for residents. An education resources section of the website lists all local schools as well as resources for children from kindergarten through high school.

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<sup>27</sup> “Goro Mitchell: An EPA.net Contributor,” Interview of Goro Mitchell, Written by Ben Klein

## SUMMARY AND CONCLUSIONS

Overall, it appears that the Community Network programs have sufficiently met the outcome goals described in the Start-Up documentation. The first and last outcomes seem to be the Community Network's greatest strengths.

The first outcome, increased participation of community residents in online information and idea exchange, leading to increased sense of commitment to the community, appears to have been met through the installation of both Community Network programs. Resident reports demonstrate that EPA.net and the Technology Access Points are both inherently designed to get residents skills needed to exchange information online. Data from the community usage survey suggests that use of both these programs has increased over the past year. Furthermore, using EPA.net seems to be linked to residents gaining a greater sense of community—many residents who visit the site reported that learning about community events and/or issues is one of its most useful aspects. TAPs also seem to foster community spirit but in a different manner. Organizations that host a TAP reported that having it allowed residents to become more familiar with their organization. Though data suggests that EPA.net in particular has a long way to go in being recognized as such by the general community, it appears that these two programs have been tools for fostering a sense of community among their users over the past three years.

Qualitative data from the case studies and exit interviews suggests that the second outcome goal, increased technology skills for staff members of other community organizations leading to increased efficiency, has been mostly met. Organizations that host TAPs have improved their administrative capabilities as well as their ability to outreach their clients by having the centers on their premises. Although there is no evidence of organizations that have become involved with EPA.net improving their internal efficiency through use of the program, it appears that many organizations have been able to improve how well they outreach to clients with the site. A collaboration between EPA.net and the City of East Palo Alto, in which EPA.net hosts the site for the city's Community Services Department, stands out in particular. One area in which the Community Network can improve for this outcome would be to further publicize exactly what the programs can do for other organizations.

The third outcome goal appears to have been successfully met as well. Five key aspects of the EPA.net site allow residents increased access to information about local community services. Being actively involved with the site's administration also allows residents to become more familiar with what is offered in their community. They can also find out more about local organizations by visiting TAPs.

Finally, the last outcome goal -- increased educational and employment opportunities for residents due to increased technological skills -- has been achieved. Quantitative data allows us to speculate that EPA.net and the TAPs have moderately increased residents' use of computers and the Internet. TAP exit interviews show that residents of all ages have been gaining technological skills by using TAPs, although perhaps adult needs should be made more of a focus at some of the centers. Case study interviews demonstrate that becoming actively involved with EPA.net can increase a resident's personal growth in writing skills. Observations show that there is a wealth of resources listed on the site.

# RECOMMENDATIONS

Though the Community Network programs have sufficiently met the four outcomes previously described over the past few years, the programs can still be improved. We suggest the following to help these programs continue to grow in their success in the future.

## ***Goal 1 Recommendation: More Aggressive Advertisement of EPA.net***

Our studies indicate the EPA.net certainly has the potential to be a primary news source for East Palo Alto residents. Yet, only 7% of responses to the question “How do you get your news about the community?” for the 2004 cycle of the community usage survey were “EPA.net.” Interviewees also expressed frustration with the site being underutilized. A more defined outreach strategy may help increase the speed at which more residents are becoming familiar with the site.

## ***Goal 2 Recommendation: Stronger Outreach to Other CBO's***

Certainly local organizations have benefited from Community Network services. Yet, perhaps the number of organizations could increase even further if the Community Network made an effort to better advertise exactly what TAPs and EPA.net have to offer other CBOs. This includes clearly defining these services on EPA.net.

## ***Goal 3 Recommendation: Promoting Unused Aspects of EPA.net***

In our analysis, we noted that the three particular forum spaces we viewed on EPA.net had not been posted to since fall of 2004. Encouraging resident discussion on these forums may increase the number of community services residents are exposed to even further. Development of software to allow true collaboration and decision making online (the aim of the Deme project mentioned earlier) would motivate groups and their members to use the Web to do work that currently must be done in face-to-face meetings, increasing the value of the Community Network and of EPA.Net.

## ***Goal 4 Recommendation: Having a Specified Place/Time for Adults in TAPs***

One of the strengths of TAPs is that it appeals to all residents of all age groups. However, some host organizations noted that adults were deterred from using the center sometimes because of the presence of children. Adults either feel that the atmosphere is too noisy when numerous children were at the center or they do not feel comfortable taking a computer spot when there are children around searching for valuable computer time. Advising host organizations to create designated spaces in center for adults or times for adult use only may help with this frustration.

## ***Goal 5 Recommendation: Design Improvements to the Layout of EPA.Net***

The layout of the homepage and the selection of links on the site appears overly complex for a site aimed at residents who are not experienced Internet users. We recommend a design study leveraging local usability experts at Stanford or elsewhere who should be able to improve the user interface. For instance, the resume database is difficult to find, making it less useful than it could be for employers and those seeking work.

The staff of Plugged In and the many residents who have worked on the Community Network should be commended for creating a truly useful set of tools and access points that have benefited many residents. They have clearly proven themselves worthy to receive further funding toward the improvements we suggest and others that would help the network increase its impact on the community.

# Acknowledgements

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# References

The following are articles that we plan to use for comparison in making connections between the analysis here and related literature and projects.

Spanning the Digital Divide: Designing Social Futures with Technology in Community-Based Youth Organizations

SRI International

[http://ctl.sri.com/publications/downloads/VStreets\\_White\\_Paper\\_10\\_12\\_99.pdf](http://ctl.sri.com/publications/downloads/VStreets_White_Paper_10_12_99.pdf)

Neighborhood Link: A Community Network for Cleveland's Inner City

Mary Ellen Simon

<http://ceep.crc.uiuc.edu/eearchive/books/fte/equity/simon-m.pdf>

(specifically mentions Plugged in on p.135)

Community Learning Environments

Colin Bill and George Motz

[http://www.winwinsf.org/resources/white\\_cle.pdf](http://www.winwinsf.org/resources/white_cle.pdf)

Online Content for Low-Income and Underserved Americans

[http://www.markle.org/downloadable\\_assets/digitaldivide\\_onlinecontent.pdf](http://www.markle.org/downloadable_assets/digitaldivide_onlinecontent.pdf)

(see section III. What Underserved Internet Users Want)

Creating Community Connections

(p.41...chapter on community technology)

[http://crcep.mit.edu/documents/pinkett\\_thesis.pdf](http://crcep.mit.edu/documents/pinkett_thesis.pdf)

The Digital Divide In Western Europe: Problems and Prospectus

Carveth and Kretchmer

<http://proceedings.informingscience.org/IS2002Proceedings/papers/Carve161Thedi.pdf>

(refers to Plugged In on p.247)

Reading Comprehension on the Internet

Julie Coiro

[http://www.readingonline.org/electronic/rt/2-03\\_column/](http://www.readingonline.org/electronic/rt/2-03_column/)

Technology and Cities

<http://www.huduser.org/periodicals/cityscape/vol3num3/article5.pdf>

(Mention on p. 118)

Teaching Basic Computer Science Concepts through Programming by Example

Caitlin Martin

<http://teacherbridge.cs.vt.edu/public/users/isenhour/demos/NRHD+demo/Creator.pdf>

(study participants were students at Plugged In)

