Beyond the Digital Divide
Using the power of information technology to build a more diverse, inclusive and tolerant 21st century community

Computerworld Honors
Case Study

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Short Summary

At a Digital Clubhouse, people of all ages and backgrounds learn and teach one another how information technology can give them and their communities a powerful "share of voice" in determining the future direction of the rapidly evolving Information Age. Together, they are using the tools of digital communications to build a more inclusive, tolerant and compassionate 21st century community for all members of society.

Long Summary

During the past several years, the Digital Clubhouse Network, a nonprofit organization established in 1996 in Silicon Valley as a spin-off from a NASA research project, has been developing a new kind of community technology center that brings people of all ages and socioeconomic backgrounds together to explore how information technology can be used to build a better society.

The main functions of a Digital Clubhouse are:

1. To develop innovative ways of accelerating the spread of **digital literacy** among all members of society in help close the growing gaps between information technology "haves" and "have nots", by mobilizing youth to teach the rest of their community;

2. To be a **test bed and an ongoing focus group** for developing new ideas and applications of information technology and digital communications that respond to the real world needs of society in such areas as education, health care, social services, and commerce;

3. To be **an objective forum for raising issues** about the social, economic and political impacts of the Digital Revolution, and to **promote cyberethics and netizenship**;

4. To provide **opportunities for young people to become well rounded, socially responsible citizens** by equipping them with 21st century job skills while instilling in them a commitment to community service;

5. To develop templates and demonstration models that can **help others replicate the Digital Clubhouse model** in their community.

The cornerstone of the Digital Clubhouse model for community involvement is something we call "digital storytelling", a continually evolving methodology that teaches virtually anyone, regardless of skill level or experience, how to become a producer of new media by using their personal lives as their primary source of content.

Our experience is that if people care deeply about the content they are creating, and can see the immediate impact of their story on others, they are willing to make a major effort to master the tools and techniques that will enable them to express themselves with passion and power. Learning about technology becomes a means to an end, not an end in itself. Or as one of our young Clubbies likes to say, "We're teaching poetry here, not pencil."

The 20th century has been the age of mass media, driven by the popularity of radio, movies and television. In some ways, the public has abdicated its rights to storytelling to Hollywood and broadcast scriptwriters. People have gotten used to others preparing stories for them. They've been encouraged to become passive consumers of other people's stories, at their local Cineplex, and now on 500 cable channels.

At the same time, because they have been so heavily exposed to film and video during their lives, most people have absorbed a considerable amount of intuitive awareness of the possibilities of these forms of communication. Now the tools of digital communications are making it possible for people to reassert themselves as storytellers in their own right, using networked multimedia technology to convey their message, their point of view, and their values, with much of the "look and feel" of professional productions.

Our digital storytelling process introduces people to all facets of digital communications--from basic scripting and storyboarding techniques typically taught in film schools, to how to use sophisticated multimedia software tools and networked computers and peripherals--quickly and efficiently.

A typical digital storytelling workshop takes place during a single intensive weekend, or over a week of evenings. Participants work in groups of 15 to 30, in a highly collaborative, user friendly environment, digitizing images, recording audio, designing titles, integrating video clips, and putting everything together in a 3- 5 minute QuickTime movie. Finished productions are shown to the rest of the group at the end of the workshop or on special Premiere Nights, which are open to the general, public. The group's digital stories are then captured on CD-ROM or VHS tape for sharing with family and friends, or put up on a web site for wider distribution to a global audience.

A key element of the digital storytelling process at the Digital Clubhouse is that the workshop participants are in full control of their productions from beginning to end. They draw from their personal memories of events, people, and places. They use family photographs, heirlooms, and documents. They craft their stories in their own words and in their own style. They are reminded that there is no substitute for their own voice on their soundtrack, unique in its authenticity, it's individuality, and in the inimitable "bumps in the road" as the speaker describes a particularly emotional incident only they experienced firsthand.

Personal attention is another essential ingredient of the Digital Clubhouse digital storytelling experience. Each cycle of digital storytellers is encouraged to hone their skills by volunteering to help newcomers, sharing in the joy of seeing yet another collection of finished productions on the final evening of the workshop.

Cross generational learning is encouraged by teaming youth to work with older adults, helping with the technical aspects of the production process, while learning valuable life skills from the story being told. Families frequently come together to create stories of their heritage. Often groups of people who share a similar experience come together to do special editions of digital storytelling that deal with a common theme, such as personal anecdotes from World War II, surviving breast cancer, or even dealing with the death of a loved one by creating an anthology of memories by friends and family members.

In our experience, digital storytelling can have a direct positive impact on people's lives in the following ways:

Computers as "Lifespace" Tools:

Digital storytelling is helping to redefine the role of the computer as we enter the new millennium. No longer merely a work place tool for computation and calculation, the networked computer is now essential to one's ability to communicate and participate in the "lifespace" of the 21st century. Digital storytelling suggests a whole new realm of possibilities for users to consider, and should further stimulate technological improvements in tools that enhance ease of use for people.

Everyone Participates:

Digital storytelling appeals to literally every segment of society, regardless of age, gender, cultural background or economic status. Our process engages the interest of the most sophisticated of users, as well as people who have never previously touched a computer. People often tell us how digital storytelling has given them an extraordinary sense of accomplishment, fulfillment and self-esteem. Sharing their creations with an audience is for many a life affirming transformational experience.

A Share of Voice for All:

Digital storytelling gives voice to people who might not have otherwise understood or have been able to use digital communications to express themselves. If information technology is indeed fundamentally reshaping our civilization, as many informed

observers suggest, then the most compelling issue facing any democratic society is how to assure that, as many people as possible are able to participate more fully in the emerging Digital Age. Digital storytelling is an effective way to help give a greater sense of inclusion to groups that otherwise might be left out of the Digital Dialogue.

Preserving Our National Memory:

Digital storytelling is enriching the lives of community by providing a new method for capturing and preserving the collective story of our greater community, in ways that it can be shared with virtually everyone. It makes possible for each individual citizen to contribute his or her piece of the greater whole of our history, and to have a direct hand in preserving and weaving together the tapestry of our common heritage. As William Ferris, former Director of the National Endowment for the Humanities once said , "We're the most powerful country in the world, but we're losing the battle for our culture. As a people, we're in danger of losing our memory." Digital storytelling can help us each play a part in restoring our memory as a people we move into the next millennium.

Unlocking New Sources of Content:

Digital storytelling has a special role to play in opening up unlimited opportunities to find new sources of content. In a world where the centralization of "valuable content" is ever increasing and where the costs of competing in-production quality with large studios and producers have dramatically escalated, companies and individuals are having increasing difficulty purchasing or producing multimedia content. Programs that help people to mine the content that they do control (i.e. family photos and home videos), inspires not only the novice, but the professional, to find ways to creatively tell their stories without expending enormous resources to acquire material for their final product.

Putting a Human Face on Technology:

Finally, and most importantly, digital storytelling as a process brings people together and reasserts the values of community. It builds trust, caring, understanding and a sense of shared experience among people that lays the foundations for cooperative action. At an accelerating rate, information technology has made it possible to conduct almost every conceivable transaction through some form of impersonal delivery -- plastic card, fax, voice mail, the internet. Virtual worlds surround us, nothing is as it appears to be, no one knows if you are a dog or cat in Cyberspace...

Digital storytelling puts a human face on technology. It has a special kind of integrity because it is about real people, real life, and real feelings, told with the actual images and in the voice of the person who was there. It's about people sitting down together as friends and neighbors and telling each other about what was and remains important to them, and capturing these experiences, ideas and emotions in digital form. It's about seeing the world from someone else's perspective. It's about respecting differences, in skill, in ability, in values. It's about a world in which one is judged not by their material riches, but by what they have experienced, by the quality of their wit, by their wisdom. It's about information technology causing people to meet face to face, not making it easier for them to be apart.

Everyone has a story. Storytelling is universal in time and space. People have always shared their knowledge, their ideas and their dreams in the form of stories. Stories are about consequences. About what happens when someone makes a decision or takes a certain action. Stories are how we preserve our past, to maintain continuity as we look into the future. That's why we encourage our children to read and understand history. Stories have a structure--a beginning, middle, and an end. All life is a story: we are born, we age, and we pass away. Good stories can be amusing, entertaining, and instructive. Howard Gardner of Harvard, in his book "Leading Minds", describes leadership as being the ability to tell a story, to create a vision that inspires others to follow. Great stories have the power to move people and to change the world.

Over the past two years, we have seen the power of digital storytelling at work. Educators have embraced digital storytelling as a way to enrich the classroom experience and involve communities in the life of their school. Seniors have collaborated with teenaged assistants to create memoirs of their experiences in World War II. Inner city youth have developed personal statements about their lives on the street triumphing over gang violence and drugs. A group of women created mini-documentaries about their battle with breast cancer. A group of young people with disabilities prepared "digital resumes" that won them summer jobs. Nonprofit agencies learned how to tell their story by having the people whose lives they have impacted chronicle their road to recovery. Families have created histories of their ancestors' struggle to find a place in America. Hundreds of people, from a 6 year-old with Down's Syndrome, to a 92-year old Hispanic man who had never touched a computer and young man who cannot move from the neck down and has to create his stories by puffing on a straw, have used digital storytelling to have their "share of voice". The results are always remarkable and very often extraordinarily compelling...

At the Digital Clubhouse Network, our goal is to encourage the development of new forms of "digital literacy" that enrich our lives and that of the community of which we are a member. Digital storytelling is a proven method for accomplishing this goal. We are pleased to be among the nominations for the 2001 Computerworld Honors Awards, and to have this opportunity to share our story with a wider public.

Benefits

Our project has unquestionably helped those for whom it was designed: our community. Young and old from almost every conceivable ethnic group and economic strata, "geeks" and novices, artists and executives, people with disabilities, women of all ages, schools and educators, libraries and museums, nonprofit organizations and service clubs, large and small businesses, all have been attracted to our project, and how we use intergenerational digital storytelling to enrich community. Indeed, the impacts of our projects and programs are already being felt far beyond the walls of the Digital Clubhouse, as we gain increasing exposure through the media, resulting in inquiries about our model from virtually all over the world.

Invariably, people who have passed through the Digital Clubhouse storytelling process come away feeling empowered and with a positive outlook on the possible applications of information technology in their lives and the future of their community. They feel they are truly active participants in the rapidly evolving "InfoAge", rather than mere passive observers. They are eager to learn more and to help teach others who otherwise might not be able to "cross the Digital Divide" to take part in the opportunities of the future.

Digital storytelling, as it is has developed at the Clubhouse, is helping to fundamentally change how people typically communicate with one another, while at the same time it restores, revives and reinforces the values of age old oral traditions. We believe that we are also developing new way of helping people comprehend technology that leverages proven concepts of project-based learning by connecting what people are trying to learn to the things they really care about: their personal life stories. We find they are learning faster and better.

On a practical level, our cross generational model is both a solution to controlling the high costs of technology training (a 15-year old is less expensive than an adult), as well as a way to build self esteem and an appreciation of the values of service and responsibility among the young. Our emphasis on volunteers with "neighbor helping neighbor", builds connections between people that not only strengthen the sense of belonging and shared responsibility in the Clubhouse, but also have a positive benefit by encouraging greater collaboration among our members and the organizations they represent, when they return to the community. For example, many of our fellow nonprofit organizations form new alliances and partnerships with one another at the Clubhouse through their shared experience with digital storytelling.)

Based on the response to digital storytelling from not only the public, but from the press and the research community, we sense that digital storytelling is likely to become increasingly popular within the next few years. Our initial work has been featured frequently in the local, national and international print and broadcast media, and we regularly play host to study groups from around the country, Europe, Japan, Latin America and other parts of the world.

The Importance of InformationTechnology

Digital storytelling does not involve any new technologies as such, rather it is an innovative way of applying existing technology to the needs and interests of a greater number of people in a way that is very appealing to them. However, new technologies are likely to be stimulated by the popularity of digital storytelling as it evolves in the coming years.

Simply described, digital storytelling is the process of guiding people through multimedia software tools (video, web publishing, CD ROM authoring, animation) using moderately priced computers and scanners The internet is used for pulling down photos and documents from sources such as the America's Memory at the Library of Congress. Final productions are converted to CD-ROM, VHS tape or a web site.

Just handing a person a pen, a paintbrush or a hammer does not make them a "writer", a "painter" or a "master builder". We believe that the ability to use multimedia to express oneself effectively will not come from merely providing people with tools. A strong sense of the elements of good storytelling, as well as fundamental concepts of visual composition and design, must go hand in hand with learning the new tools of digital communications.

We are just new emerging from the first stage of technical development in the networked multimedia arts. In this initial phase, software and hardware engineers have controlled the process and therefore the content of multimedia creation. In the next stage, there will appear new kinds of multimedia computing appliances with more user-friendly software, allowing the public to take over and apply these improved tools to explore infinite creative possibilities.

Ultimately, highly skilled craftsmen who are able to integrate a deep and unique understanding of the culture of the medium, as well as the strengths and weaknesses of the form itself, will emerge. Our digital storytelling processes and Clubhouse methodologies promise to have a profound impact on the second and third stages of this evolution.

Originality

Digital Storytelling is not brain surgery. Most moderately priced desktop computers have the multimedia software tools for creating a QuickTime "movie". Armed with an inexpensive scanner, a handful of pictures, a couple of CDs with the desired music and sound effects, virtually anyone can create a little digital production and broadcast it to a global audience over the Internet.

However, there are several aspects of digital storytelling as it has developed at the Digital Clubhouse Network over the past four years that make it exceptional, and, in our opinion, the most effective application of its kind.

1.   **Focusing on Issues of Community Development**

To our knowledge, we are the only organization that has made digital storytelling its core competency for bringing people together to focus information technology on community development issues. Digital storytelling is the common language that creates a special bond among people who frequent the Clubhouse. We are continually developing new ways of applying our methodology in such areas as education, health care, diversity relations, economic development, and creative ways of helping to close the gaps between information "haves" and "have nots".

2.   **Unique Integrative Program Design**

Digital storytelling at the Clubhouse is highly integrative in its entire conception. We do not offer a class on design, for example, and a separate class on tool acquisition as so frequently occurs in most vocational and technical approaches to multimedia and computer training. Digital storytelling at the Clubhouse is derived from curriculum developed in advanced schools in the performing arts and fine art, and design, where the understanding of materials and understanding of artistic traditions are not considered as distinctly different worlds.

3.   **Reinforcing Positive Values**

Because it is so firmly rooted in the values and images of the family, of sense of place and of oral history, digital storytelling at the Clubhouse tends to result more often than not in the creation and sharing of stories that encourage self esteem, and are positive, uplifting, and emotionally fulfilling for both the storyteller and the audience. Technical

virtuosity for mere effect makes less an impression at the Clubhouse than simple well-crafted stories delivered with sincerity and conviction about things that really matter to people. As any Hollywood studio knows, great production values alone are no substitute for a good story.

4.   **Bridging the Generations**

Our strong commitment to mobilizing the young to be technology trainers is based on our belief that the most valued skill in the approaching Information Age is to be an effective teacher. The so-called Net Generation is quick to adapt new technology and is very optimistic about its potential. However, young people generally can gain a great deal of insight as to how to productively use the power of technology through constructive interaction with their elders.

5.   **Neighbor Helping Neighbor**

The culture of volunteerism is an essential element of the digital storytelling process at the Clubhouse as a whole. Although many assistants have only slightly more understanding and experience that those whom they are trying to help, they bring a strong personal commitment and sensitivity to their work that tends to be lost in more professional instructor-student relationships. The storyteller knows the volunteer is sincerely interested in their story and has recently "been there". Also the process of requiring that each participant be responsible for teaching their newly learned skills to at least two other individuals during each 12-month cycle also strengthens the sense of community among our members.

The digital storytelling process has evolved over the past few years as an integral part of the development of the Digital Clubhouse Network. The Digital Clubhouse Network grew out of a NASA research project in Silicon Valley, California, in an unfurnished room in a half-vacant office building where a cross section of the local community were invited to share their perspectives on how information technology was likely to impact their lives in the future during three months in the spring and summer of 1996.

Ultimately, more than 400 people participated in these weekly meetings. The youngest was in elementary school; the eldest was a great grandfather who had grown up in days when Silicon Valley was still an orchard. Some of the participants were schoolteachers, dentists, computer executives, church officials, grocers, and college students. More than 30 distinct ethnic groups were represented. For several of the participants, it was the first time they had ever engaged in an extended conversation about computers and the internet, and some had in fact never actually used, let alone owned, one.

One by one, people shared their experience, their concerns, and their ideas for making sure that the future of information technology was guided by the real needs of society, that it was inclusive, and that users should have more direct influence on the next generation of applications. They raised a diverse spectrum of issues:

"I'm all in favor of IT, but where do I find the time to learn all of this!"

"The boys are all into playing drill 'n'kill. I'm just not interested in computers."

"What use do I have for a damn spread sheet at my age...Who needs this stuff?"

"Everybody be better off if we had quality speech recognition at a reasonable price."

"Our market research just doesn't give us the information we need to make intelligent decisions about what people really want from technology..."

Everyone seemed to feel that the pace of change was speeding up and that trying to stay abreast of technological change through traditional educational structures and teaching models was increasingly difficult, if simply not altogether impractical. A number of participants felt society was in danger of losing its bearings, as one after another or its institutions felt the destructive impact of technology ("America is in danger of losing its memory!").

Others cited a gnawing sense of "technoangst", that being more connected virtually was making them feel less involved and cut off from relationships on a more personal level ("E-mail is the drug of the nineties!"). There was a lot of concern that while youngsters seemed to go to technology the same way they went to the refrigerator, the more "wired" they became, the less connected they were to their families and their community.

Out of these Friday night "ideation" sessions, there gradually emerged the concept of a Digital Clubhouse -- a new kind of public learning center for the 21st century, a "cyber lyceum" where neighbors could learn about technology from one another, volunteering their time to help others. A place where youth could be mobilized as teachers exchanging their technology skills for life experience through interaction with their elders. Universal accessibility, open systems and collaboration between "haves" and "have nots" would be the guiding principals for this digital oasis, where companies could interact directly with households, schools, nonprofits and small businesses, and people of all ages and backgrounds could have a say in how information technology could make a positive difference in their lives.

While it was clear that people wanted a physical space in which to learn and work together, there was no consensus about what might be a common denominator that would appeal to such a diverse array of stakeholders and strengthen their sense of shared community. What was the "killer ap" that could respond to all the issues raised by our constituents and have the power to motivate even the most recalcitrant "want not" to reach out and engage the possibilities of information technology on his or her own terms so that the Clubhouse would truly represent a place of inclusion?

We decided to test the theory that digital storytelling would indeed be the best way to draw that we could begin experimenting with our ideas, converting our empty room into a prototype Digital Clubhouse. Apple Computer, Adobe Systems, IBM, Macromedia and NTT Data of Japan were the first to respond, providing us with the tools we needed to get started. At a special Digital Picnic on June 17, we put out the word to the community, inviting them to come to the Digital Clubhouse and attend our first free public workshop.

In July 1996, we launched our first pilot version of "Producing Producers". Over forty people, ranging in ages from 5 years to 80 years from all walks of life, came to the Digital Clubhouse each weekday morning for three hours for two weeks to create their digital stories. Working together in an intensive, highly creative--and sometimes frustrating--process of developing a cogent and compelling story while struggling to master multimedia tools, and seeing each others finished productions at the end of the workshop, resulted in a unique sense of shared accomplishment and camaraderie. As the workshop series continued through the summer, with participants from each previous cycle assisting with subsequent sessions, it became increasingly obvious that digital storytelling had broad, universal appeal. We have continued to build on this initial digital storytelling program, working with a broad spectrum of organizations and individuals, refining our processes on a continuous basis.

Success

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Over the past four and a half years, the Digital Clubhouse concept has evolved considerably from its origins in an empty room in an industrial park in Santa Clara, California. More than 7000 people have participated in our programs and projects. The first prototype Digital Clubhouse now occupies 4,500 square feet of retail space in a major shopping mall in Sunnyvale (the official "heart" of Silicon Valley), with more than 40 multimedia computers and peripheral equipment, connected to a T1 line. A second prototype Digital Clubhouse is now operating at the New York Information Technology Center in downtown Manhattan.

One of our most successful programs—"Webucation for New Netizens"--teaches 5th to 8th grade children how they can be leaders of the Net Generation by teaching others, including their parents, how to use the internet. They are being taught positive values, such as cyberethics and netizenship, as well the principles of Universal Accessibility (how many after school programs ask their students at the end of a web design class "Now, can a blind person read your web page?") In April, Attorney General Janet Reno visited the Sunnyvale Digital Clubhouse to commend our Clubbies

There is growing interest in the Clubhouse model, reflected in the increase in media attention and the study tours that visit us from Europe, Japan and other parts of the world. We are getting inquiries from other parts of the country asking how their community might create a similar kind of public digital literacy center and we are considering plans for trying to respond to them. We believe digital storytelling to be the key factor in attracting this kind of audience to our work.

Here are some examples of how digital storytelling at the Clubhouse has benefited specific individuals and organizations over the past two and one half years:

Cousins of the Clubhouse Project:

Over a period of two months, a group of 10 elementary, middle and high school sent groups of teachers, administrators, parents, students and community members to the Digital Clubhouse to learn the techniques of digital storytelling so that they could bring the Clubhouse concept to their neighborhoods. Several of the participating schools were from minority and economically depressed areas of San Jose. At the completion of this seven-week project, more than 400 people convened for a night of "Thanks 'n' Giving" to share their stories. Adobe Systems provided each participating school with software to enable them to continue to offer the digital storytelling experience to their communities as uniquely effective way of introducing technology to the underserved.

"The Digital Clubhouse model is a proven method for engaging not only teachers and students, but also parents, seniors, the disabled and others in gaining access and understanding of the technologies of communications for the 21st century. In the process, we will be laying the foundations for this broader community to take a greater interest in the life of their neighborhood schools and to participate with them in meeting the challenges that face us all in this Digital Age."

Bonnie A. Plummer
Assistant Superintendent
Santa Clara County Office of Education
San Jose, CA

"Our school is located in a multicultural, low income neighborhood... We are dedicated to closing the growing gaps between the information technology haves and have-nots through the innovative use of multimedia technology. We would like to expand upon the Digital Clubhouse concept to connect our community and our school for the empowerment of both. . We are ready to provide a cross generational creative learning environment for our students and their families, a model for helping teachers integrate networked multimedia projects into their curriculum, and a springboard for processes and methodologies that can be used to replicate and sustain collaborative models in communities everywhere."

Robert Topf
Principal
Edenvale Elementary School
San Jose, CA

"Our computer lab is used virtually every minute of the school day. However, it sits idle the other 18 hours of the day. By becoming a Clubhouse Cousin, this facility can be leveraged to much greater effect...and will enhance our abilities to use our computer network for new kinds of personal connections with our local community through the magic of "digital storytelling'"

George Manthey
Principal
Bullis-Purissima Elementary School
Los Altos Hills, CA

."Our school is committed to using our resources, human and technological, to the inclusion of the current population that are being left out of the digital literacy curve...our community is 95% minority with a high percentage of poverty. This project dovetails very well into our commitment to our larger community and our willingness to work together to strengthen our future."

Chris Corpus
Principal
Katherine R. Smith Elementary School
San Jose, CA

An extension of the Cousins of the Clubhouse Project is now underway, with the Digital Clubhouse in Sunnyvale, assisting the Housing Authority of Santa Clara County create 20 mini-versions of the Digital Clubhouse at each of 20 residences where more than 5000 low income seniors, single families and people with disabilities live. Members of the Digitally Abled Producers Project, recruited from local high schools and middle schools will provide technical assistance and training to the residents, who will eventually work together to create a learning network to assist other replicate their experience.

21st Century Education Initiative:

Dozens of public school teachers were trained in digital storytelling at the Digital Clubhouse as part of a regional effort to develop more creative ways of bringing technology into the classroom. As a result, the digital storytelling methodology is now being practiced throughout schools in the Silicon Valley as a means for enriching history, English and science curriculum using multimedia.

"[We] commend the Digital Clubhouse Network for its excellent work and reiterate our support of your efforts. The teachers in our Challenge 2000 Multimedia Project benefited greatly from their introduction to digital storytelling and many of them have applied the technique effectively to their classroom practice. The clubhouse has served as a superb venue for our ongoing professional development activities. We also are very impressed with your approach to using networked technology to forge new and stronger bonds between generations and to bring new voices into the digital community."

Tim Cuneo
Senior Executive Director
21st Century Education Initiative
San Jose, CA

World War II Memories Project:

On the evening of July 8, 1998, more than 80 veterans of World War II gathered at the Digital Clubhouse in Silicon Valley, to begin documenting their personal memories of the most cataclysmic event of the 20th century. They served their country honorably, without fanfare. None were famous, nor did any of them consider themselves heroes. Indeed, few of them had ever discussed their wartime experiences with their families or friends, even though for most if was the defining moment in their lives. Most of the vets

were in their late teens and early twenties at the time of the war. Now they are being assisted by young volunteers from local area high schools and middle schools, helping to preserve precious memories of a turning point in American history. Their project, now in its third year, has been featured twice on CNN and in the New York Times, and culminates in a special Premiere Night for sharing with the public each Veterans Day.

"I have come to understand just a small portion of the horror my father experienced under serious war conditions. At 74, he has just begun to divulge stories of his past memories. The pain and anger he bottled up for so many years, has begun to escape…"

> Deborah Vanni
> Veterans Daughter

My Life As A Movie:

People with disabilities often have difficulty getting opportunities to demonstrate their qualifications, or lack the skills to qualify for jobs where their physical or mental disability is not a factor. The Digital Clubhouse sponsored a special edition of digital storytelling for 20 high school students with severe to moderate disabilities in the spring of 1997. The participants created "digital resumes" of their lives and accomplishments as a way of conveying to prospective employers their true capabilities, and their quick mastery of digital tools. All of the students were able to secure jobs or internships that summer. One student, Kevin, created a digital story about what he has accomplished since being hit by a car in the 8th grade, leaving him paralyzed from the neck down. His story has inspired considerable media attention, including Kevin being interviewed by Japanese television and being featured in Adobe Systems' 1998 annual report.

"My digital story shows how I can become part of the upcoming age in technology, and that I can work with computers and that there is a job out there for me. I can do it on my own. I can do it independently. I don't need someone to do everything for me."

> Kevin Lichtenberg
> Student

Children With Down's Syndrome:

One of our more satisfying experiences was a workshop in digital storytelling devoted to families with children who have Down's Syndrome. The participating families came to the Digital Clubhouse to create person Christmas Stories, co-produced with their children, filled with achievements, humor, and love. Their productions were shown at a special holiday party, to friends, teachers and family members, an event covered by the local news media.

"I enjoyed doing the recording part. I enjoyed the photographs, too. I took some of the photographs. It was fantastical!"

Kaitlyn

"To see that she can see images of her family, her friends and herself coming back from the computer I think will be an eye-opener.

> David Wiley
> Father of Kaitlyn
> Families of Children with Down's Syndrome
> San Jose, CA

Share of Voice, Share of Heart, Share of Mind:

Most non-profits work long hours on shoestring budgets, depending largely on volunteers and a small dedicated staff. Unfortunately, too few non-profits have the opportunity to learn how to apply new technology to their work, due to a lack of resources, especially experienced "humanware". One of the most innovative applications of digital storytelling at the Clubhouse has been to train nonprofits in how to use digital media to improve their fund raising, volunteer recruitment and related activities. The first such program was held in 1997-98, involving 30 local nonprofits dealing with homelessness, disadvantaged youth, health maintenance, and women's issues. Participants created digital stories about people whose lives have actually been positively impacted by the work of their organization. A small startup organization, AIM (Atypical Infant Motivation), a small startup organization that specializes in counseling for parents with children born with a disability, used its digital story to raise more than $300,000 within less than 6 months after their workshop--a very tangible example of the power of digital storytelling.

"As you well know, as a non-profit, we have no funds for the extras that would bring us into the 21st century. We were so delighted we were given a chance to learn how to create our own "digital story"... Armed with our story and filled with new confidence from our workshop, we were ready to reach out to the community... Construction of the state of the art infant intervention center has already started. Many more delayed and "at risk" babies will be served and teachers trained, because you gave us a chance to tell our story. There aren't enough words to tell the Digital Clubhouse thank you.

> Gail Wiest-Haywood
> Operations Manager
> Atypical Infant Motivation, Inc.
> San Jose, CA

Surviving Breast Cancer:

The Digital Clubhouse has sponsored special versions of digital storytelling that focus on the power of storytelling as a healing experience. One such workshop was conducted in

October 1998, for a group of women who had successfully survived their battle with breast cancer. The women created digital stories of their experience, which were shown to the public as part of National Breast Cancer Awareness Month, generating publicity regarding the importance of early detection and the issues of dealing with postoperative issues. The women are now working with the American Cancer Society and other organizations to conduct a continuing series of similar digital storytelling workshops, as part of a major multi-year project.

"Healing occurs in many different ways and on many different levels. Digital storytelling is another medium for people to share their thoughts and feelings, to teach others so that they don't have to live through the same mistakes, and provide healing to the storyteller as well as to those afflicted with the same disease or similar circumstances. I believe digital storytelling allows one to grasp more fully the message trying to be conveyed. You have not only the ability to hear the storyteller's voice, but actually see her on screen, watch her transform before your eyes, and experience emotions stirred up from the background music... I will be forever grateful."

> Karen Kwast
> Breast Cancer Survivor
> Palo Alto, CA

Ross Moran Memorial:

Ross Moran, one of the first Clubhouse members and an avid technologist, died in early 1997 of cystic fibrosis at the age of 20. Ross had been very active in promoting uses of technology that benefited children with life threatening illnesses, including having played a key role in launching the Convomania web site and getting computers installed at the local Ronald McDonald house and children's hospitals. A few weeks after his death, Ross' family gathered at the Clubhouse to create a very personal anthology of their memories of Ross through various stages of their lives together, introducing us to yet another poignant and powerful application of the Digital Storytelling process.

These experiences and words of appreciation give us encouragement that we are on the right track as we approach the end of the millennium. During 1999, we plan to focus our resources on the following areas:

1. Continue to further develop and refine our methodologies, strengthen our internal training processes, and do more outreach to attract necessary resources to support our work.

2. Develop more fully high impact applications of digital storytelling identified thus far, e.g. nonprofits, schools, health related projects (breast cancer, terminally ill youth, disabilities, veterans stories), and document our methodologies so that they can be replicated by others.

3. Work with our Corporate Members to establish a Cyber Lyceum of Digital Clubhouses through the U.S. and internationally, that can share their experience over the net -- a global community of digital storytellers for the 21st century.

Difficulty

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Despite our achievements thus far, we continue to encounter challenges that test our commitment to the ideals that led to the formation of the Digital Clubhouse Network and the creation of the first two Clubhouses. We are quick to remind people that we are still very much a work in progress, and that we are still "debugging the software".   Having "tested the demo", we are continually revising the business case for making a Digital Clubhouse sustainable and replicable so that we can maintain and build on our momentum.

1.   Financial issues:

We are constantly in a precarious financial condition, which threatens our ability to sustain our digital storytelling programs and other projects. Up until now, we have operated the two Digital Clubhouses on a very limited budget, relying almost entirely on donated equipment and volunteers. The first Executive Director of the Silicon Valley Digital Clubhouse, Mary Ellen Locke, wasn't paid a salary in two years.

In part, this has been by design. We were concerned that having originated in Silicon Valley, that the Digital Clubhouse concept would be perceived as having little or no relevance to other, less well-endowed communities. We wanted to demonstrate that even with little or no money, a Digital Clubhouse was feasible if everyone pitched in and did his or her part, a little like a traditional Amish barn raising.

We continue to struggle with trying to identify the right balance between paid having professionals or volunteers teach our various networked multimedia programs, as well as manage and staff the day-to-day operations of the Clubhouse. We consider volunteerism to be at the heart of what makes a Digital Clubhouse special, and believe that paying people to teach digital storytelling somewhat threatens to undermine the very personal "neighbor helping neighbor" atmosphere that has tended to produce the better quality stories.   Digital storytelling at its best requires as much technical and creative talent as possible, but we do not want the process become a form of purely mercenary "pay and play" activity.

However, we have always recognized that for the Digital Clubhouse to be sustainable over the longer term, we need to have at least a minimum funding base in place to support basic overheads, including a skeletal staff, communication expenses, modest equipment replacement and other operating costs. We also feel that now that we have successfully "test marketed the demo" we are in a better position to approach funding

sources that see a proven track record of accomplishment. Ironically, our success in the past in attracting equipment and media attention sometimes has worked to our disadvantage, by causing people to think we are better established than in fact we are.

In the meantime, we are deeply grateful to Adobe Systems and the Mitsubishi Electric America Foundation for their financial support of our digital storytelling programs during 1998. Adobe Systems and Macromedia have also supplied both the Silicon Valley and New York Digital Clubhouses with software tools to support our work. We are also grateful to American Mall Properties and the Rudin Management Company, for their providing the Digital Clubhouse Network with rent-free space in Sunnyvale and the New York Information Technology Center for the past three years.

2.   Technology Issues: As wonderful as technology can be, it is also prone to break down unexpectedly for reasons that even a highly sophisticated engineer may have trouble determining. The functions of a Clubhouse, especially its digital storytelling programs, place an extraordinary burden on our technology resources. This is compounded because we tend to attract people who are not very knowledgeable about computers, networks or software and often inadvertently foul things up if not carefully supervised. Our heavy reliance on volunteers further exacerbates these potential problems by creating additional discontinuities and uneven expertise. We hope to remedy some of these issues by putting in place a full time systems administrator in 1999.

Technology continues to move inexorably ahead at an accelerating rate, and we sometimes feel that our Clubhouses, too, are in danger of joining the ranks of the "have-nots". Relying solely on donated equipment is probably not tenable over the longer term, again, an issue that will have to be resolved by our defining ways to develop the necessary funding base to support at least some purchases of needed equipment in the future.

3.   Intellectual Property Rights Issues: Digital storytelling in its purest form involves people using their personal assets as the source of their content. In this case, we are only concerned with their protecting their own intellectual property and encourage them to do so. (We have considered creating a blanket IP agreement that would automatically cover any and all Digital Stories produced at the Clubhouses). However, when people use images and sound files from third party sources to enrich their personal productions, the legal implications become somewhat more complex. Our stance to date has been that since we are a nonprofit organization and neither our workshop participants nor we are making commercial use of the digital stories produced at the Digital Clubhouses, then we are not infringing on someone else's copyrights. As we continue to expand the scope of our work, however, these and related IP issues will require further investigation and analysis.