

The Amateur Computerist

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15 Years of the *Amateur Computerist*

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Editorial

With this issue of the *Amateur Computerist* we celebrate 15 years of publication. Our first issue appeared on February 11, 1988. Though there were various thoughts of what to name our new newsletter, we soon arrived at an agreement that the name the "Amateur Computerist" would be appropriate. Michael, one of our founding editors, had proposed the name. Floyd Hoke-Miller, who was one of our early writers, concurred, explaining that "amateur" signified those who do something for the love of it.

Since that first issue we have maintained our effort to put out a newsletter for those who do computing, and now online computing, for the love of it. Though the general tenor of the online world has changed, since the early 1990's when the *Amateur Computerist* first got online, the goal of the newsletter was constant. We had a 10 year reunion meeting in 1998, at which all the founding editors were present. That gathering was in Toronto, Canada. At

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the meeting, Michael proposed that we seriously consider publishing a book version of the back issues. We did not find a way to pursue the suggestion and to republish the back issues, but William Rohler, another of our founding editors has gotten all of our previous issues into a PDF format and they are now all online at our web site at: http://www.ais.org/~jrh/acn/Back_Issues/.

This issue is celebrating 15 years of publication, so we also include some articles from past issues to give current readers and contributors a flavor of the earlier years of the *Amateur Computerist*. We include "Dawn of a New Era" by Floyd Hoke-Miller. Floyd welcomed the publication of the newsletter and put it in the context of the pioneering struggle for an open press, that he had been part of as a contributor to the early American labor press, and the creation of a local trade union press in the UAW. The article "The Impact of the Computer on Society: The Future" describes the social potential that the computer can provide for society if the goals are kept in mind, "The Spirit of Babbage: Chapter One" looks back at the early mythological origins of the computer and gives a fresh perspective for creating this mythology anew. The labor roots of the newsletter are reflected in the cartoon by Doc Wilson . There are other articles that describe the commitment to freedom of speech that is required to support the continued evolution of the computer and networking, and an article about computer pioneers like Gary Kindall, the creator of the early operating system CPM, and why he is the kind of pioneer that need to be remembered and cherished as those who have made the open and vibrant networking world a reality. There is also an interview with Staff Member, which looks back at the roots of interactive computer development and the hobbyist movement that spawned the BBS developments and the sharing tradition it was part of. The second part of the interview looks back at the introduction of computers onto the shop floor in a factory and the kind of

challenges that presents.

Along with these reflections from the past, we have included articles on the potential for a more participatory democracy that the Internet provides. The article "Doing Democracy" was written to celebrate the 10 year anniversary of the first posting online of "The Net and Netizens". The article is reprinted from its publication in German and English in the German online Journal *Telepolis*. Another reprint from *Telepolis*, is John Horvath's article "The Reality Behind E-democracy" examining how hard is the challenge to actually achieve a democratic form of democracy, and what are some of the obstacles to be overcome. The article by K. Jean Min, "OhmyNews.com: A Case Study," describes how a participatory form of journalism was created in South Korea and how the netizens movement there was able to challenge the conservative press and achieve some victories over it. A president for the country who was not part of the conservative power structure was elected as a result.

We want to thank our readers, subscribers, contributors and all who have helped to make the *Amateur Computerist* possible through these 15 years. Most especially I want to thank the editors. William Rohler, Norman Thompson, and Jay Hauben have worked hard to keep the *Amateur Computerist* publishing and developing. Sadly one of our founding editors, Michael Hauben, is not able to share this 15 year anniversary with us. We will strive to carry on the tradition of the netizen that he helped to bring into the world.

We welcome comments on this and other past issues, contributions from readers, and support toward continuing to publish the *Amateur Computerist* long into the future so that there will be a journal for those who do computing and online networking for the love of it.

Ronda Hauben

Doing Democracy

by Ronda Hauben
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Reflections on the 10 year Anniversary of the Publication of "The Net and Netizens"

This is a period marked by serious political

dissatisfaction around the world. There is the promise of democratic societies, but the promise too often is far removed from the reality of people's lives. Yet there is the widespread yearning for a better world, for a society where democracy is practiced, not merely pretended. In this situation the question is raised: "What does democracy look like? How does it function? Are there any operational models to observe and learn from?"

Fortunately, there is a model to be examined, a practice to be investigated. Ten years ago, on July 6, 1993, a student, [Michael Hauben (1)], posted a paper on the Net. The title of the paper was "Common Sense: The Net and Netizens". The paper begins:

"Welcome to the 21st Century. You are a Netizen (Net Citizen), and you exist as a citizen of the world thanks to the global connectivity that the Net gives you. You consider everyone as your compatriot. You physically live in one country but you are in contact with much of the world via the global computer network. Virtually you live next door to every other single netizen in the world. Geographical separation is replaced by existence in the same virtual space."

It was a long paper so it was posted in three separate parts: Preface (2), Paper (3), Appendix (4).

The paper introduced a concept, which has since spread around the world, both online and off (see also *Netizens: On the History and Impact of Usenet and the Internet* (5)). This concept can provide a practical operational framework to explore a model for democracy.

Describing how he hoped to focus the paper, the student wrote: "The Net and Netizens: A Revitalization of People Power, a Strengthening of People Power. Bottom Up is the Principle of this paper."

The interesting aspect of "The Net and Netizens" is that it identifies and describes the important role of the online user in creating the new social treasure that had come to be known as the Net. The net.citizen, or netizen, as the student wrote, was the active agent in creating something new, the democratic online content and form of the 1993 network of networks. The netizen contributed information and viewpoints that made it possible to consider an issue or problem and come to a reasoned judgment or decision. Netizens would help other netizens if they deemed it worthwhile.

The initiative that was being developed was from the netizens themselves. Examples included a mailing

list by a person in Ireland summarizing the weekly news and sending it out to over 1000 people around the world who wanted to stay current with Irish news; Usenet newsgroups like misc.news.southasia and soc.culture.india which made it possible for people from an area to continue contact with what was happening; a mailing list to watch the prices of gas in California to warn against price gouging. There were many other examples that the student provided which he had learned from his research online.

The key aspect, however, of this new form of democracy, was that the previously disenfranchised reader could now broadcast to others around the world, news and views from a grassroots perspective. Previously, there had been central control of the mass media. Now the participant himself or herself, could provide information to the online world about an event or an area of knowledge. Netizens also had the ability to be citizen reporters, to offer a more wide ranging set of viewpoints and perspectives on issues or problems, a broader basis from which to form one's own opinion, than hitherto had been possible.

Netizens could meet online, discuss issues and problems, and from the process decide on the goal or direction to pursue. The student saw this process as a way of revitalizing society, as a way that those previously disenfranchised could gain power over both their society and over their personal lives.

In this operating model of democracy, there were no elections or representatives. Rather this embryo of democracy was focused on the active participation and contributions of the many in a manner not hitherto possible. The student described some of the broad ranging ages and occupations of the more than 10 million computer users who, by 1993, were connected around the world. At the time the computer networking connections were made possible by gateways between different networks, like the scientific and educational Internet, the academic Bitnet, the technical research Unix UUCP and Usenet network, the Cleveland Freenet for community people, and other networks.

While the netizen was an active contributor to the developing social treasure, the student realized the need to make it possible for everyone to have access to this new communication paradigm to realize its potential. He writes:

“This complete connection of the body of citizens of the world does not exist as of today, and it will definitely be a fight to make access to the Net

open and available to all. However, in the future we might be seeing the possible expansion of what it means to be a social animal. Practically every single individual on the Net today is available to every other person on the Net.... International connection coexists on the same level with local connection. Also the computer networks allow a more advanced connection between the people who are communicating.”

Although the path was difficult, the student also appreciated the importance of the goal. He writes:

“Despite the problems, for people of the world, the Net provides a powerful way of peaceful assembly. Peaceful Assembly allows for people to take control over their lives, rather than control being in the hands of others. This power has to be honored and protected. Any medium or tool that helps people to hold or gain power is something special and has to be protected.”

The focus of democracy, as described in “The Net and Netizens”, is on the people themselves, and on their ability and achievements in determining the nature and development of their society. It is on support for the ever increasing contributions of more of the populace in the process.

Links

- [1] <http://www.columbia.edu/~hauben/netbook/>
 - [2] http://www.columbia.edu/~hauben/CS/Common_Sense1.txt
 - [3] http://www.columbia.edu/~hauben/CS/Common_Sense2.txt
 - [4] http://www.columbia.edu/~hauben/CS/Common_Sense3.txt
 - [5] http://www.firstmonday.dk/issues/issue3_7/introduction/
- A version of this article appeared on TELEPOLIS and can be seen at: <http://www.heise.de/tp/english/inhalt/te/15166/1.html>

The Reality Behind E-democracy

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The dream of e-democracy lives on, despite the fact that it belongs in the realm of virtual reality.

Looking back, the late 1990s expectations of a “paradigm shift” to an Internet-driven “new economy” was naively over-optimistic. The economy as a whole wasn't altered as fundamentally as some had hoped (or feared). Likewise, other utopian views of our digital future have failed to materialise. This includes notions of a new form of governance, commonly referred to as “e-democracy”.

Yet a growing number of people continue to view modern communications technologies, such as

the Internet and e-mail, as a way to bridge the gap between citizen and government. E-democracy is still seen as a way to breathe new life into democratic systems of government. The interest in a “digital democracy” is in part due to the fact that participation in traditional democratic forums has hit new lows in the west. The explanations for this apparent drift towards apathy are manifold, as are the proposals for addressing it.

Without doubt, these are tough times for democracies in the western world. At every level of government voter turnout is low and, in many cases, steadily falling. Many citizens feel government is becoming increasingly remote. There is little transparency and there is corruption at all levels – economic, moral, and ideological – rendering most democratic systems as nothing more than a contest between tweedle-dees and tweedle-dums.

“From an intermittent democracy regulated by elections to a continuous democracy”

Nevertheless, European Union leaders still consider the notion of e-democracy as something worth pursuing – and promoting. In a recent special issue of The IPTS Report [1] put out this past summer by the Seville-based Institute for Prospective Technological Studies, government officials at local, national and European levels, as well as broadcasters, academics and IT specialists, attempted to identify the opportunities and pitfalls on the road towards a digital democracy.

Several of the authors noted that the Internet, by breaking down traditional barriers to communication, may provide a prime opportunity to revolutionise the mechanics of democracy. “The internet has created radical new possibilities to reinvigorate and enrich democratic dialogue,” stated Greek Foreign Minister George Papandreou in the editorial.

The feeling of those who continue to harbour pleasant dreams about a digital democracy is that the Internet could pave the way for a more participative, or direct, democracy. “We are moving from an intermittent democracy regulated by elections to a continuous democracy,” explained Andre Santini, the mayor of Issy-les-Moulineaux, a Paris suburb that has carried out several experiments in e-government. Just as some ancient Greek city-states were role models for our modern democracies, Mr Santini says that modern cities are spearheading the drive towards electronic governance. “Local government has experienced a real revival through the introduction of

information and communication technologies,” he says.

According to The IPTS Report, digital democracy has made some remarkable advances and provides a number of examples of successful experiments. These include the world’s first global online poll which was set up to coincide with the Earth Summit in Johannesburg, Internet games to promote participation among young people, as well as citizen’s forums and e-voting in local elections. One notable example at the EU level was the recent launch of the “e-Vote” project. As the report explains, tens of thousands of European citizens have already voted on numerous topical issues, with more than 100,000 expressing opinions on the Iraq crisis alone.

One major hurdle for proponents of digital democracy, however, is the enigma of the “digital divide”. Democracy is by definition inclusive, so the current level of Internet exclusion is a fundamental constraint on the spread of e-democracy. In fact, new research shows evidence of this digital divide growing in Europe. The study [2], compiled by Forrester Research, suggests that by 2008, the proportion of homes with high speed Internet access in Europe could vary from 5 per cent in Greece to 45 per cent in Norway.

The study concludes that broadband in Europe will be unevenly split along a clear north/south divide. Scandinavia and the Netherlands will dominate the ratings; German-speaking Europe, Belgium, Finland, and the U.K. will form a second tier; and Southern Europe and Ireland will continue to lag. Overall, by 2008 Forrester predicts that only 30 per cent of all homes in Europe will have broadband.

Realising the extent of this gap, some have suggested that if the EU and its Member States regard electronic participation seriously, they must then ensure universal access to the technology. “As we move towards a written EU constitution, we must ensure that the Internet [...] is in both its heart and mind,” says Derek Wyatt, member of the UK parliament. Wyatt urges governments to view the Internet in the same way as gas and electricity, as a public utility for all.

This, in itself, is a problem of sorts: if Internet access is to be regarded as a public utility like electricity, does this mean the more money you have the more you are able to exercise your democratic rights and responsibilities? And what happens when the

lights go out, as in the U.S., the U.K., and more recently all of Italy? Are your democratic rights then suspended or at least put on hold until the power comes back on? No doubt, this would give extra meaning to Bertrand Russel's saying that we have our freedom until we need it the most.

Waving the wand of electronic wizardry will not magically boost democratic participation.

Along these lines, some have been careful to warn that simply waving the wand of electronic wizardry will not magically boost democratic participation. "The process of widening involvement [...] will be harder than just creating the opportunity to participate," cautions Greg Dyke, Director-General of the BBC. "E-democracy requires not just technical development but deep cultural change where the 'citizen consumer' is given a recognised role in the political process." Mr Dyke suggests that public television can provide an instructive model for greater citizen involvement and a crucial link between government and society. "The BBC and other European public service broadcasters may be better placed than almost any other organisations to provide a starting point to encourage the widest range of people to participate in civic life."

At the end of the day, what is missed by many when considering the question of digital democracy is not just issues of technology or access. "Digital literacy" is also important. Many who use the Internet today don't exploit it to its full potential; they are trapped within the narrow confines of basic and routine tasks. Most wouldn't know how to find information which exist outside the range of Google, Yahoo, or MSN, for instance.

Moreover, democracy is not simply the act of voting but also of taking a measure of interest and responsibility for actions which may affect society as a whole. While some mention activities such as communicating with elected representatives as a step forward for the concept of digital democracy, computer-mediated communications in this case can be a curse as well as a blessing. True, it makes it easier to make contact, but automation processes also enable elected representatives to hide behind their virtual identities, sometimes avoiding the public altogether. As that old adage from the late 1990s goes, "no-one knows if you're a dog on-line".

But even more important than this is the realisation that most politicians and policymakers who talk about e-government are not really interested in

democracy at all. The proof is in the pudding, as can be seen in anti-globalisation protests in Europe and abroad. When real democratic participation is attempted by citizens at large, leaders hide behind high fences and far away in remote locations, surrounded by successive rings of security. For digital democracy to succeed in reality, off-line democracy must first exist in practice.

Notes:

[1] The IPTS Report. Special issue on e-democracy, Number 75, European Commission, Joint Research Centre, June 2003, <http://www.jrc.es/iptsreport>

[2] http://dbs.cordis.lu/cordis-cgi/srchidadb?ACTION=D&SESSION=129102003-10-8&DOC=2&TBL=EN_NEWS&RCN=EN_RCN_ID:20704&CALLER=EN_UNIFIEDSRCH

This article originally appeared on Telepolis: <http://www.telepolis.de/english/inhalt/te/15807/1.html>

[Editors Note: This case study was written before Roh Moo-hyun won the presidential election in South Korea in November 2003. The critical factor in his winning the presidency was the support and active participation of the South Korean netizens movement. *OhmyNews* is reported to have played a significant role in that movement.]

OhmyNews.com: A Case Study

by K. Jean Min

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"The Net is vast and infinite," mulls a cyborg agent, Kusanagi, in a cyberpunk anime *Ghost in the Shell* before she jumps into the Net with her new-found body.

Oh Yeon-ho also dreamed of jumping into the Net someday with a slightly different idea; recruit a corps of young cyber reporters from the vast and infinite Net. For his master's degree in mass-communication during his stay in United States, he wrote a paper on the start-up of a news media business. He aspired to publish a news media powerful enough to compete with major newspapers or broadcasting stations in terms of agenda-setting power. But doing so required a huge sum of capital investment and hundreds of seasoned professional reporters. With the meager money he raised from his pocket and that of a couple of other investors, he realized the only answer lay in the Internet.

So was launched *OhmyNews.com*, the first

Korean vernacular Internet news service made purely by Netizens. Within just two years it has earned a rock-solid reputation as one of the most influential Internet news sites among Korean netizens. Last year it was ranked as 8th influential news media in Korea by the annual *Sisa Journal* survey, a fast and unprecedented success in the fierce Korean news business. Currently it is enticing more than a million visitors everyday, an all time high number throughout its short life.

Company Overview

- Founded; February 22nd. 2000
- Initial capital; KRW 200M won (\$170,000)
- Product/Service: On-line daily news provider
- Major income source: banner advertising (70%), journalism school (20%), news contents sale (10%), *OhmyNews 2002* (Weekly News magazine), classified ads
- Market value: not listed yet
- Competition: no serious contenders in general on-line daily news category except Pressian

Turn-Off

How did it grow so fast? First of all, venturing into a news business, especially print news requires a huge initial investment. You have to build a massive printing plant, hire at least a couple of hundred reporters and establish a national distribution network in a single month or two. Even if you execute this daunting job quickly and flawlessly, there is no guarantee of success whatsoever. This is because such powerful media giants as *Chosun Ilbo*, *Joongang Ilbo* and *Dong-A Ilbo* already dominate the Korean news market with their combined market share hovering around a whopping 70%. Moreover they wield exclusive power over their critical national distribution network.

It is virtually impossible to penetrate into the news market to say nothing of surviving as a major player even if you possess unlimited resources. In other words, the Korean print news market was heavily fortified to protect the dominance of the incumbent players.

The clear evidence is Hyundai's failed endeavor. Hyundai group founder Chung Ju Young tried to set his foot into the news business by introducing *Munhwa Ilbo* with a hidden aim of using it as a

political leverage during the upcoming presidential election in 1992. Neither he nor his beloved *Munhwa Ilbo* succeeded in this bold endeavor though he poured hundreds of billions of won until he finally sold his stake in the paper. *Munhwa Ilbo* was ranked way below *OhmyNews* in the same survey conducted by *Sisa Journal* last year.

Turn-On

OhmyNews learned a lot from the fate of *Munhwa Ilbo*. It realized that venturing into the newspaper market was an insane idea and decided to create a daily news media existing and operating only in cyberspace. That way it could save tons of money which otherwise it had to provide by borrowing or fund-raising.

Secondly it opened its news gathering web server to all Netizens. Anyone who has something to tell or bits of news – whom it calls *News Guerillas* – can log on to the *OhmyNews* server, type in his or her story and upload related pictures. Dedicated editors in *OhmyNews* scan them and evaluate quality and validity of each article a netizen has reported and select ones that satisfy the preset guideline. Each netizen reporter will be rewarded with cyber cash depending on the number and importance of selected articles. That way *OhmyNews* could produce enough news content without hiring a bunch of dedicated reporters.

The validity of such a radical idea had already been proven. Countless numbers of cyber writers were flexing their editorial muscle on various weblogs, bulletin boards or their own homepages. *OhmyNews* was confident that a lot of talented writers are out there starving for public recognition. That is exactly what *OhmyNews* provided; public cyberspace where an amateur cyber writer can express his or her writing skill in the eyes of hundreds of thousands of netizens with some cash rewards as a bonus.

The cash reward per each article offered by the editing desk is a meager amount. Depending on the level of news space hierarchy that each article had occupied, the cyber reporter was paid one thousand, five thousand or ten thousand won respectively (from \$.85 to \$8.50). Nonetheless, cyber reporters or columnists did not care much about the money. After all, they were rewarded already when their editorials, columns or reports were given a little shaft of floodlight.

Since the news space of *OhmyNews* was professionally presented in terms of the look and feel and design esthetics compared with other amateur web-logs, cyber writers were generally more satisfied than elsewhere. *OhmyNews* started with 700 plus news guerillas when it was launched back in Feb. 2000 but quickly gained thousands of new guerillas month after month until it reached over 18,000 as of May 2002.

On the other hand, as the futurist Alvin Tofler once predicted in his book *Future Shock*, these netizen reporters could be deemed as true 'prosumers' in that they participate in the production of news stories that they would consume themselves. This strategy again reinforced readers' loyalty to *OhmyNews* since it assured them that their voice was heard.

Demographics of News Guerillas (As of Nov. 2001)

Sex	Number	%
Male	11189	74.40%
Female	3838	25.60%

Age	Number	%
10~19	1593	10.60%
20~29	6782	45.10%
30~39	4872	32.40%
40~49	1454	9.70%
50~59	258	1.70%
60~70	56	0.40%
70~79	17	0.10%

Occupation	Number	%
Undergraduates	3515	23.40%
Others	2408	16.00%
White Collar	2276	15.10%
Journalist	1391	9.30%
Small Business	750	5.00%
Self employed	720	4.80%
High school student	696	4.60%
Graduates	582	3.90%
IT	564	3.80%
Middle school student	527	3.50%
Teachers	481	3.20%
Public servant	375	2.50%
Arts	234	1.60%
Homemaker	199	1.30%
Medical	124	0.80%

Armed force	106	0.70%
Farmer	60	0.40%
Legal	24	0.20%

Lastly, it redefined the scope of news itself. *OhmyNews* shattered conventional wisdom that only stories about the *who's who* in politics, economy and cultural arena can merit being treated as "news". Why should ordinary people be fed with tons of irrelevant news they have no use for?, it asked. This Copernican about-face on the concept of the news came as a shock to the majority of Korean netizens. Since the majority of news consumers were deeply dissatisfied with the autocratic voice and arbitrary editorials of the Big Three newspapers, this iconoclastic approach to news created a stir among young readers.

Take off

As *OhmyNews* gained attention and became the talk of the town, the number of newly joining news guerillas as well as daily visitors began to explode. To make these first-time visitors come again, and hence retain them as permanent readers, *OhmyNews* devised from its inception another hook named *Readers' Voice*.

Readers' Voice worked this way. Each visitor can jot down his or her comment below each article. If he likes a certain article, he can show his preference by clicking into an accompanying banner. The first attempt of this kind in the news business. Each click translates into 50 won (4.25 cents) additional reward for the netizen reporters. To earn as much money as possible netizen reporters should do their best to produce quality news. And some readers would visit *OhmyNews* with a single purpose of enjoying readers' comments.

Often, *Readers' Voice* quickly escalated into the de facto Readers' Forum as readers chatted and fought among themselves. Some hotly debated topics would casually draw more than a thousand reader comments, a phenomenal number for a fledgling Internet news media. That gave another boost for its page view performance. *Readers' Voice* became so popular among netizens that even *OhmyNews'* powerful archrival *Chosun Ilbo* decided to adopt this service into *Dizzo*, its Internet equivalent. *Readers' Voice* proved an ultimate device to exploit the interactivity of the Internet.

All these efforts combined with occasional scoops brought handsome rewards to *OhmyNews*. Visitors and page views of the site literally exploded. They marveled at 100,000 plus daily visitors during the first year when *OhmyNews* reported a comical sit-down demonstration of former president Kim Young Sam for 24 hours. This incident epitomized the potential of the Internet as the most favored news media to deliver “history as it happens”.

Soon this record was broken when *OhmyNews* reported the fuss over the U.S. Presidential Election in late 2000. Record after record was broken to create new heights of daily visitors statistics.

Live cast of the historic event as it actually happened glued the readers to the site creating a powerful stickiness factor. There was an increasing pattern of daily visitors as well as website ranking since its foundation in Feb. 2000 up until May 2000.

As time went by, the news content by news guerillas was stacked up to produce a huge amount. *OhmyNews* published several books containing ordinary stories by ordinary news guerillas. Some prominent news guerillas were even approached by a publishing agency for possible publication of their columns or articles that appeared on the news site. The increasing off-line presence of *OhmyNews* boosted on-line power again making it the 10th and 8th most influential news media in Korea in 2000 and 2001 respectively in a survey conducted by *Sisa Journal*.

Using the ever-increasing number of visitors and its influence as leverage, *OhmyNews* intensified sales of its ad space and also sold its news content to DAUM, the largest Korean portal site. Its major revenue source was comprised of ad sales (70%), journalism school (20%) and news content sales (10%) as of 2001.

Live web casting from the Ruling Party Presidential Caucus

However, as is the case with other Internet ventures in Korea, the phenomenal success of *OhmyNews* would have been impossible without the world’s highest level of broadband penetration in Korea. The rapidly expanding number of broadband subscribers provided *OhmyNews* another jumping off point. It realized video and audio rich content could be easily carried to netizens’ PCs via this fat pipe.

In early March 2002, *OhmyNews* experimented

with live web casting by airing real time pictures from the ruling party’s caucus in Kwangjoo to elect a presidential candidate. It turned out to be a huge success. The *OhmyNews* server counted over three million unique page views in a single day, another record to be broken to reach five and six million figure each new month.

With the full swing broadband environment firmly in place, *OhmyNews* could become anything, be it a daily newspaper, occasional broadcasting station or live web radio. By that time the dedicated reporters in *OhmyNews* began to call themselves a multimedia news agency.

Transformation

As a progressive and politics-oriented news media as *OhmyNews* is, it has a certain limit in terms of expanding its readership potential significantly. Establishing itself as a firm news media without losing the allure of an iconoclastic underdog is a tricky game. *OhmyNews* will lose its loyal readers once it tries to satisfy as many politically varied segments at once as possible. We would rather recommend it to expand the scope of its news stories significantly without deviating from its progressive and center-left biased political color.

Publishing *OhmyNews 2002*, a weekly off-line equivalent of *OhmyNews* also helped. Off-line readers clicked into the on-line *OhmyNews* and vice versa. That way it could expand its readership foundation significantly creating on-off synergy. Focusing on covering the presidential election campaign might also help this year. The lion’s share of its readership comes from the age group ranging from late twenties to early thirties, the most politically dynamic demographic segment in Korea.

If it maintains this strategy we believe it can certainly jack up its ranking significantly as the most influential news media in Korea. Let’s wait and see this November, when *Sisa Journal* conducts its annual survey named ‘Korea’s most admired and influential News media’.

Summary & Lessons:

* Netizens want their voices to be heard; they are prosumers instead of passive consumers.

* *OhmyNews* made the most out of existing Internet infrastructure eliminating the need of a huge capital

investment.

* Find a way to translate huge viewership into a profit machine: banner advertising, classified ads, news contents sale, off-line publishing and shopping mall for readers.

* Differentiate your image to establish political identity then stick to yourself to maintain a lasting brand entity

Will the Internet and Netizens Impact the 2004 U.S. Presidential Election?

by Ronda Hauben

For a while Howard Dean's campaign for the Democratic Party nomination in the U.S. seemed to startle political observers.(1) His use of the Internet and his volunteer campaign staff of netizens were succeeding in unexpected ways to change campaigning procedures and practices. Many of his volunteers have been recruited via the Meetup.org online web site, and his campaign staff sponsors a "Deanblog for America" web site that allows readers to comment on his campaign articles.(2) There are other web sites like blogforamerica.com which provide both articles from the Dean campaign and comments by supporters.(3) Dean's campaign also surprised other contenders for the nomination by raising significant campaign funds online.

As the campaign for the Iowa caucus votes and then the New Hampshire primary gathered steam, the news media in the U.S. is focusing less on the potential of the Internet to help candidates gain the Democratic Party nomination. Instead the conservative media organizations are encouraging the old means of campaigning that has led the Democratic Party to become increasingly harder to distinguish from the Republican Party. Negative or positive campaign ads on television, leaflets in mailboxes, newspaper and television editorials, and televised debates are forms of campaigning that bring the old guard of the major political parties back on the political stage they have dominated for so long. This is the kind of politics that led to the situation in the 2000 Presidential election where the distinction between the major party candidates was so slim that the Supreme Court was allowed to decide the election.

Can the Internet help overcome the barriers to defeating an incumbent in the 2004 U.S. Presidential

election? Observers of the role played in the South Korean Presidential election by netizens and the Internet are wondering if the success of their efforts are a phenomena that can be repeated in the upcoming U.S. Presidential election. In 2002, a South Korean netizens movement was able to effectively challenge the political old guard by waging an Internet campaign first to nominate and then elect Roh Moo-hyun as the South Korean President.(4) Netizens challenged the previous forms of campaign strategy. Critical to the success of the South Korean netizens was an online press that welcomed discussion of its articles by online users. Even more important, however, was the way it promoted the practice of "Every citizen a reporter."(5) The most notable of these is the media organization *OhmyNews*. This organization started online in February, 2000 with little money and four full time reporters. The publisher, Yeon-ho Oh welcomed articles from volunteer reporters he called "citizen reporters". The online newspaper soon had contributions from 737 citizen reporters and the interest of a growing number of readers. By September 2003, the number of professional journalists working for *OhmyNews* had climbed to 53, and there were 26,700 citizen reporters contributing articles. Citizen reporters are paid a small fee for their articles. They contribute their articles to make *OhmyNews* a force to challenge the conservative news organizations that had previously monopolized Korean politics.

There is not a similar kind of news media organization in the U.S., though the different Democratic candidate campaigns, especially the Dean campaign, are using weblogs to promote communication among their supporters.

A recent event in China, however, demonstrates the power of participation online. Recently the Chinese online press described the death of a Chinese peasant and the injury of several others in Harbin, the capital of the Heilongjiang Province in Northeast China. The woman, Liu Zhongxia, was killed after a BMW driven by Su Xiuwen hit her. The BMW had had its rearview mirror slightly damaged after Liu's husband Dai Yiquan, who was driving a tractor, swerved slightly to avoid hitting a vehicle that was coming into him on the narrow road.(6)

The driver of the BMW got out of her car and reportedly threatened Dia and his wife. Then Su got back into her BMW, and instead of backing away from the accident, drove the car forward killing Liu

and injuring several of the bystanders. The case went to court and the BMW driver was given a suspended sentence. The fact that none of those injured, or who had been bystanders testified at the trial, however, was part of the troubling circumstances that led to a public outcry over the events of this case. Dai and the others injured received cash settlements from the BMW driver's husband. In exchange, they agreed not to speak about the case.

Chinese netizens learned of the case, and the court verdict and began posting to Internet forums. Soon there were 70,000 comments on the news web site Sina.com, a famous Chinese web portal.(7) By the second week in January, 2004, the Washington Post reports that there had been over 310,000 messages posted at the Sina portal, when the Chinese government had the site delete 20% of the messages as being too critical of the government. By Thursday, January 15, 2004, the 250,000 messages that remained were deleted as well.(8) By this time, the case had achieved international attention. It had become a symbol of the growing gap between rich and poor in China and of the frustration among the Chinese population with the corruption in government accompanying the government's pro business policy.

Even in a country censoring Internet use, like China, netizens have demonstrated the power that online discussion forums can provide for the grassroots. Those discussing the BMW incident online, have been able to bring the case to the attention of the national and international media and are seeking to have the case retried. Can the Dean campaign or the campaigns of other democratic candidates vying for the nomination tap this power of the Internet and of netizens to achieve what seems unachievable? An online press welcoming and encouraging citizen contributions of articles and discussion of those articles would help. In China, netizens are finding ways to counter the censorship of online discussion. In South Korea, netizens were able to create a vibrant online netizens movement to elect the candidate they supported to the South Korean Presidency. The upcoming election in the U.S. is a challenge to U.S. netizens to learn from the experience of others around the world and in the U.S. to be able to tap the power of the Internet to make a significant impact on the 2004 Presidential election.(9)

(1) <http://www.heise.de/tp/deutsch/inhalt/co/16503/1.html>

(2) <http://www.deanforamerica.com/>

(3) <http://www.blogforamerica.com/>

(4) http://www.seoprise.com/technote/read.cgi?board=min&y_number=106&nnew=2

(5) <http://www.japanmediareview.com/japan/internet/1063672919p.php>

(6) http://www1.chinadaily.com.cn/en/doc/2004-01/18/content_300105.htm

(7) <http://bbs.chinadaily.com.cn/forumpost.shtml?toppid=39672>

(8) <http://www.washingtonpost.com/wp-dyn/articles/A21197-2004Jan15.html>

(9) <http://www.columbia.edu/~hauben/netizens2004.txt>

This article appeared on Telepolis and can be seen at: <http://www.heise.de/tp/english/inhalt/te/16613/1.html>. It also appeared in Korean and English on OhmyNews at: http://www.ohmynews.com/articleview/article_view.asp?menu=c10400&no=148854&rel_no=1&adcheck=1&index=1

Fifteenth Anniversary of the *Amateur Computerist*

Two thousand and three marked the 15th year of publication of the *Amateur Computerist* newsletter. To commemorate those 15 years the staff held a reunion. We reprint in this issue three letters connected with the reunion and eight articles reprinted from our earlier issues. Back issues from all 15 years are online in PDF format at http://www.ais.org/~jrh/acn/Back_Issues.

Letter from the *Amateur Computerist*

Date: Tue, 29 Jul 2003 22:18:17 -0400 (EDT)

From: Jay Hauben

Subject: *Amateur Computerist* 15th Anniversary

Dear Friend,

Begun in 1988, 2003 marks the 15th Anniversary of the *Amateur Computerist*.

For these 15 years the *Amateur Computerist* has championed love of computing, universal access, netizenship, defense of the net as a public domain and progress toward participatory democracy on and off the net.

Sending out the *Amateur Computerist* for 15 years we have occasionally received comments, suggestions and criticisms from our readers. These are always welcomed and helpful in our work.

We would be especially happy to receive comments and greetings via email from any and all of our readers on this occasion.

In 1988 when we edited our first issue the whole staff lived in the Detroit area. Since 1994 we have edited our issues using the Internet because we no longer live close enough to meet in person. We did have a reunion in 1998 to mark the tenth anniversary. This weekend August 1-4 we will again have a reunion. This time to mark the 15th anniversary of our publication.

The reunion will be in the Harrisburg region of Pennsylvania in the USA. If any of our readers in that region would like to greet us in person, please send me email and I will try to make arrangements. I will be reading my email until Friday morning August 1.

Take care.

For the *Amateur Computerist*,
Jay Hauben

Letter from Germany

Date: Mon, 28 Jul 2003 09:44:10 +0200
From: Ronald J. Bartle <RJBartle@t-online.de>
Subject: AW: 15 year anniversary

To the Staff of the *Amateur Computerist* on the Occasion of the 15th Anniversary.

Hi to you folks. I am a British (Royal) Air Force war disabled veteran who has generally speaking, been through a bit in life and as a result have some opinions and views that I had for many years not found much opportunity to express. Not many of us are blessed with the ownership of a newspaper-publishing house or have the wherewithal to set up a TV Station. On the other hand many of us have quite legitimate reasons to feel strongly about this or that matter of concern on the political front and are keen to see a bit more real democracy practiced. In the early 80's I was encouraging discussion by distributing progressive literature on the Streets of SW London and backing this up by regular debates via CB Radio. Then – as if destiny had seen the frustrations of folks such as myself – along came the Internet. Not surprisingly – with my background in military and other professional communications – I personally found it not too hard to get online and became one of the early subscribers to the *Amateur Computerist*. One had become well aware of the potential for real advancement in the lot of mankind that the net could mean if it was maintained, pre-

served and defended as a modern-day Forum in the old democratic Tradition of Greece and Rome.

Not only because of climate – many of our modern industrial-nation cities do not really offer much of a physical forum where the citizens can sit around and discuss the affairs of the day and formulate a common position, which would then come to the notice of the ruling classes. If there is a widely accessible Forum today – it would tend to be on-line and still needs to be made more accessible to a broader proportion of the general public globally. As you will be well aware – it is just such considerations as these that the *Amateur Computerist* has been pursuing and upholding down the years and one can only hope that the readership will extend and that its influence will expand. I congratulate you folks on your faithful support for this important project down the years and trust you will find fulfilment and occasionally even some fun while continuing to do so.

Ronald J. Bartle
(Computer and Internet Consultant to the German Federal Association of Psychiatric Survivors – www.bpe-online.de)

Letter from Australia

Date: Tue, 12 Aug 2003 15:11:27 +1000
From: Geiselhart, Karin
Subject: 15th anniversary

Dear Jay and Ronda,

Sorry I could not be with you for the anniversary of the *Amateur Computerist*. My thoughts were with you, and I hope it was a great pleasure for all concerned....

My latest work project (local broadband content) is at <http://creativecanberra.net>. My contract here finishes mid-September, then I might continue the project with community groups.

Much love,
Karin

[Editors Note: To mark the 10th anniversary of publication online of the seminal article the Net and Netizens, Pier Luigi Capucci, Director of Noema, in Italy and his students reformatted the article and put it on their web site. The following is Capucci's

Net and the Netizens Commemorated

This is a draft, originally in text format, which led to the book *Netizens: On the History and Impact of Usenet and the Internet*, by Michael and Ronda Hauben, published by the IEEE Computer Society in 1997 and which also appears in an online edition. “Netizen” is today a common and widespread term. We can find it on many occasions, debates, articles, essays, art exhibits, political acts (like the Netizens Protection Act introduced by the U.S. Congress against online spamming in 1997)... search engines can show about 100.000 instances of this word. The “Netizen” concept involves a new and extended vision of our society, which we are hardly shaping and redefining with many social, ethical, political, cultural issues to be aware of.

Michael Hauben, who coined the term “Netizen” and gave it a meaning, posting his research on Usenet just ten years ago, died suddenly in New York on June 27, 2001, at 28. His research, starting from the origins and development of Usenet to the diffusion of the Net (he participated in online communities since the early 1980s), is fundamental for understanding the current information society, from sharing information to online communication and participation, from the rising and diffusion of the Internet communities to the net policies. He is one of the pioneers who can envisage the future and help us to find the way. With Michael we believe in a vision of the online world as a powerful and positive place.

We greatly thank Ronda Hauben for the permission to republish this draft and the help in this Noema issue on the Netizen idea.

Pier Luigi Capucci, Noema director

In honor of 15 years of the publication of the *Amateur Computerist* we are reprinting some articles from our early issues.

[The following is reprinted from the Volume 1 number 1 issue of the *Amateur Computerist*.]

INTRODUCTION

This newsletter is to inform people of developments in an effort to advance computer education. Workers at the Ford Rouge Plant in Dearborn, MI. were denied computer programming classes. There was an effort by administrators of the UAW-Ford program at the Dearborn Engine Plant to kill interest in computers and computer programming. We want to keep interest alive because computers are the future. We want to disperse information to users about computers. Since the computer is still in the early stage of development, the ideas and experiences of the users need to be shared and built on if this technology is to advance. To this end, this newsletter is dedicated to all people interested in learning about computers. We welcome articles, programs, reviews, etc. We want this newsletter to help people use their computers in ways that will be useful and fun.

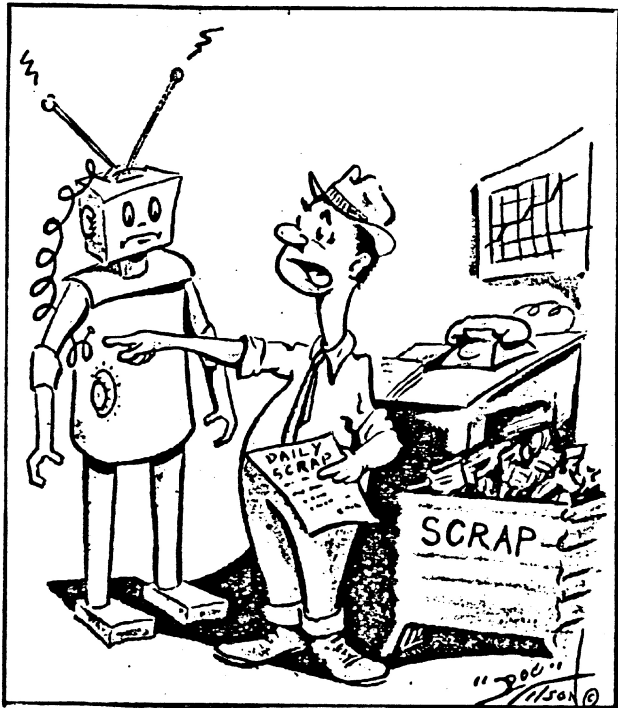
[The following is reprinted from the Volume 1 number 1 issue of the *Amateur Computerist*.]

DAWN OF A NEW ERA

From the Age of Darkness to the Age of Enlightenment – from the Machine Age to the Mind Age, here we are. Let not any force or forces keep it under wraps. Let it be free to circulate in the Public Domain. Let us base it upon principle, not on price, like Truth or Love. From the Great Wall to the Great Pyramid, from the hieroglyphics to the screen of the computer, mankind is still progressing. So make the new born science, that has given us the computer for the amateur and not as a prerogative of the professional to be shrouded in secrecy from humanity, the choice of the individual, not an election of a minority. From the falling star to the falling apple, from the minute to the multitudinous, from secrets to disclosure, I am pleased to endorse the amateur method. Therefore I implore all to plan and to participate even though I have been on disability for 26 years and have not had the opportunity to participate in the great sea of knowledge that has flowed over the Dam of Secrecy since I was inactivated physically and mentally – in my advanced years and state of general debility I still see the mind of man the greatest computer of all – So Let Us Continue to Make Use of It to the Advantage of the Masses – Come, Let Us

Reason Together. With an open mind and a free spirit. Let me reiterate, there is so much more to know, that what we do know, is still insignificant. It gives me great pleasure to endorse this free-for-all program of a restless mind.

Floyd Hoke-Miller, UAW Retiree and Flint Sit Down Striker (1895-1990)



Turn in your Robot ears, Bud;
You're All Done!

Cartoon by "Doc" Wilson

[The following is reprinted from the Volume 1 number 3 issue of the *Amateur Computerist*.]

COMPUTERS AND FREE SPEECH

by Michael Hauben

Should there be unlimited freedom of speech? Should the Supreme Court or any other federal court have the right to censor? Does EVERYBODY have freedom of speech? These are some of the questions based on freedom of speech. When Hitler came to power in Germany, he limited freedom of speech by ending constitutional law. When the Chairman of the opposing party made a passionate plea, Hitler said, "Late you come, but still you come...during the time

we were in the opposition...in those days our press was forbidden and forbidden and again forbidden, our meetings were forbidden and we were forbidden to speak, and I was forbidden to speak, for years on end. And now you say: criticism is salutary!"(1)

For our society, freedom of speech is part of the Bill of Rights of our Constitution. Many of the states that ratified the Constitution did so with an understanding that a Bill of Rights restricting the power of the federal government would be adopted. Patrick Henry was one of the many to demand the Bill of Rights. He argued successfully for the Bill. The different freedoms, including freedom of speech, protected by the Bill of Rights have been and still will be defined through various cases brought up in federal courts.

The concept of freedom of speech has a long history. It expanded to speech on paper in the 15th Century when Johannes Gutenberg invented moveable type in Europe. Books that were cheap and common replaced the valuable, rare manuscripts immediately after the press was introduced. Information could now be delivered to all who could read, instead of only to those within earshot of a speaker. In England, the governing body thought the power of the printing press dangerous enough to assign a censor. That censorship was shut down by Parliament and then reinstated after a flood of licentious and seditious literature came out of the mighty presses. Many of these new uncensored books were politically or theologically based.

John Milton, a 36 year old poet and a classical scholar of known reputation, published on his own and without a license in the 17th Century, an answer to the Parliament's censoring of printed materials. He called it *Areopagitica*. In it he says "First, the decision of a censor cannot be trusted unless the censor is infallible and beyond corruption. No mortal possesses such grace; therefore no mortal is qualified to be a censor. Second, since anything may tend to evil if misused, an effective system of censorship will end up suppressing everything even music, dancing, windows, balconies, eating, drinking, clothes and 'the mixt conversation of our youth, male and female together.' Third, if a scheme for issuing licenses be instituted, what does one do with books already printed and in circulation? Fourth, the job of censor is so dull and unsatisfactory that no able person will want it."(2)

In the five parts of Milton's text, he talks about the

types of people for whom he is writing this book. The main type, the humanist, is devoted to the debate and the discussion of things like freedom of speech. He was the man of learning that Milton had in mind. Milton knew that the person who talks about freedom of speech requires freedom of speech.

Freedom of speech has been a topic widely debated around the world on university campuses. For example, in 1964 on the Berkeley Campus of the University of California, there developed the Free Speech Movement which was a forerunner of the student-based civil rights and anti-war movements that were active for the next ten years. From Berkeley came several leaders for the up and coming computer Homebrew movement which was the beginning of all personal computers we know today. In the last two years, there have been student revolts against the political system in China and France.

Freedom of speech is still freedom of speech even for bad causes. In North Carolina, and several other states, one can pay \$5.00 for an "open sesame" password onto the Aryan National Liberty Net, an electronic Bulletin Board. It contains the latest in neo-Nazi thought offering sections entitled "Know your Enemies", "ZOG Informers" and "Patriotic Groups." One of the main concerns is that of kids who like to hack into closed computer bulletin boards. They are the most vulnerable to this type of hate propaganda.

An important vehicle in the fight for free speech is the personal computer. The personal computer can be a facilitator of free speech because it is an information machine. It grew out of the supporters of the anti-war movement who wanted a personal computer for the masses. At the time, the computers available were the mainframes made by IBM and other big manufacturers, affordable to only huge companies and the government, and the mini-computers manufactured by DEC (Digital Equipment Corporation) and others. The minicomputers were more of a people computer because universities could afford them and make them available to students.

Many clubs formed that had people interested in a people's computer. California's Homebrew Club was one of the famous ones. Many important founders of the personal computer blossomed in the Homebrew Club. The first couple of real personal computers were made exclusive, because the manufacturers wanted to make profit from them. The hackers soon defeated the exclusive rights that these manufacturers

wanted. They figured out and standardized different aspects of the machines to fit the hacker ethic, which stated everything should be in public domain so that people could learn something from, be able to benefit from, and finally be able to enhance it. As a result of these pioneers, IBM was forced, when it entered the personal computer market, to conform to the pioneers and to make an open, public machine. IBM of all companies! IBM was the Godfather of the Mainframes. These pioneers achieved a victory for free speech!

In 1987, on the campus of the University of Michigan (Ann Arbor), free speech was again brought into question. On an electronic bulletin board available to the University community, a file of ethnic, racial and other jokes offensive to specific groups was made available by certain students. The file kindled the fire of debate on freedom of speech and computer propriety. After the student who started the file, was pressured to close it, more debate flourished. Some students started files with page-long essays on the evils of bigotry, while others started new joke files. So some students answered the discontinued joke file, while others restarted it. Now that's definitely freedom of speech!

Even more debates have been started about whether to limit what people can say by computer, whether bad jokes should be allowed as a category. "Some schools such as Dartmouth and Carnegie-Mellon have imposed a code of ethics for students using their computers, with violators facing removal from the system. Dartmouth specifically prohibits offensive material in a code that warns: 'Obscenities should not be sent by computer nor stored where they could offend other users'." (3) Supporters of the joke file say that no one was forced to read the file and that they had to go out of their way to read it. Isn't there always a temptation though? Robert Parnes, programmer of the software used for the electronic bulletin board, said that he thought that the students would try to test the bounds of decency.

Our world would have to be made better to have unlimited freedom of speech. Most people in the world who have a type of Bill of Rights have some protection of their freedom of speech. As Barbara Amiel writes in her article "Censoring One, Censoring All", "You either have free speech for everybody or you do not have free speech" (4), you have to have unlimited freedom of speech or you are discriminating against a viewpoint. The result of unlimited

freedom of speech is that if someone exercises their freedom and expresses their viewpoint on a matter, a person of an opposing viewpoint would be able to answer the first person's work. This way everyone could hear all sides on that matter and make up their own minds on what they agree with.

1. Barbara Amiel, *Censoring One, Censoring All*, MacLean's, April 15, 1985, p 11.
 2. Irving Younger, "What Good Is Freedom of Speech?", *Commentary*, vol 79, Jan. '85, pp 45 - 46.
 3. Isabel Wilkerson, "Ethnic Jokes in Campus Prompt Debate", *New York Times*, April 18, 1987
 4. Barbara Amiel.
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[The following is reprinted from the Volume 2 number 4 issue of the *Amateur Computerist*.]

TRUE HEROS

by Michael Hauben

A hero is not someone who only appears a hero in our eyes, but one who achieves good for the common man, against the will of the establishment. This person must be able to stand up against the common bad, instead of pleasing somebody. Often this person will either have all or most of society going against him. The hero must be able to stand up for what he believes in and not succumb to outside pressure.

Galileo is a good example of a hero. He challenged the Church by publishing his scientific findings, which were against the then current and less accurate Aristotelian science. He kept on studying and his mind was unchanged even after the Inquisition challenged him. So in the end, when the Inquisition tried to silence him by putting him under house-arrest, he still got his writings out to the people. Galileo would not be silenced by the Inquisition because in his search for the truth he was not afraid to oppose authority!

Gary Kindall is another hero or at least part of a heroic movement. He was the creator of CP/M (Control Program for Microprocessors), the first operating system for micro-computers. CP/M was developed during the beginning of the micro-computer revolution. Before micro-computers were developed, IBM (International Business Machines) and other big companies produced the only computers available. The computers that they marketed were incompatible mainframes and mini-computers which

only big businesses and big universities could afford. What the micro-computer revolution brought together was a community of people who wanted to bring the power of computers to the common people, instead of just to these institutions. This community succeeded in making the personal computer. They insisted that the personal computer have an open architecture and be compatible. CP/M played a big part in making the personal computers compatible. After a while, IBM wanted to get into the micro-computer market, so they introduced a micro-computer that was incompatible with everything else. No one would have anything to do with this machine, so IBM was forced to come out with a more compatible and open machine! IBM went to Gary Kindall and asked to use a version of CP/M for the IBM PC (Personal Computer), but first they wanted him to sign a non-disclosure agreement. He wouldn't agree to IBM's requirement of secrecy because that would be breaking the micro-computer principle of keeping everything open and available to all the people. So IBM didn't use CP/M. Instead they used something that was almost exactly like CP/M except it was developed especially for IBM's PC. Gary Kindall and the people who brought the micro-computer into existence are heroes! They brought the secret of computer power from IBM and other big companies to all the people!

Sports heroes and celebrities are not true heroes because they cannot bring about real changes. People like Galileo and Kindall are real heroes because they make a significant change in the world benefitting the common person. All ages have untrue heroes, but true heroes are rare.

[The following is reprinted from the Volume 4 number 4 issue of the *Amateur Computerist*.]

The Impact of the Computer on Society: Two Views The Future

Trond Andresen
ta@itk.unit.no

If I should discuss "the future", I would take, not a 10-20 year perspective, but a 200 year perspective. I would ask myself: What is the real LONG RANGE trend in the economy, and what sort of real LONG RANGE target is made possible by that? Having decided on a 200 year perspective, I would use that

projection as a premise for the course I would want society to follow in the more near future (0-10 years).

What then is the fundamental trend in the economy, seen from the perspective of 200 years? The answer is of course trivial: An immense increase in productivity. And I will say: We have just seen the start of this, what with automated manufacturing, process control, expert systems, and in the not-so-near-future, Artificial Intelligence. I disagree with environmentalists saying that increased productivity is impossible because of environmental constraints. I agree with their mental alarm about the constraints, but I think that automation, robots, and so on will make us a better society for all, at the same time REDUCING the strain on the environment.

Now comes the next point, which is not trivial at all: What sort of society should we strive for in the light of the enormous technological potential that a lot of us agree on?

Here is my scenario: A society where a small percentage of the population oversees automatic processes in administration, manufacturing and commerce. The industry will be running nearly without human work-hours. So what do the other 95% do? Before I answer that question, some thoughts about "the meaning of life". Why do we need industry? Is it an end in itself? (Listening to politicians and industrialists in the media, one is led to believe that.)

In my view, industry is only a means TO GIVE PEOPLE MORE TIME FOR WHAT THEY REALLY WOULD LIKE TO DO. The remaining 95% of the workforce in my future society would have the following jobs:

- Kindergarten teachers and nurses, 2 adults per 5 children.
- Teachers, in classes with less than 10 children in each class.
- Sailplane instructors, scuba-diving instructors, football trainers.
- Teaching kids mountain-climbing
- Rearing horses.
- Drama instructors, singing instructors, actors, singers, musicians, painters, etc.
- Health personnel, one doctor per 50 persons. Free hospitalization for everybody.
- Researchers in anything from flowers to chess to astronomy to historical masks of the South American Indians. A very big part of the population in university-level education and research – ecologically

sound agriculture and animal husbandry, which, by the way, may be MORE labor-intensive than today's industrialized attack on the environment.

- Ecological managing and rebuilding of the world. Reforestation is one important example.

OK, you can see where I'm going. And I would also stress: Mandatory work-hours in this society are in the range of 2 - 4 hours, if they are mandatory at all. But people will be on the job a lot more, because they will LIKE what they are doing. No problem.

This far future scenario has the following consequences for shorter-term policies:

- Automation is a good thing.
- Higher wages which lead to more automation is a good thing.
- Shorter work hours accompanied by job-sharing is a good thing.
- Less people in industry and more people in education/health care/culture is a good thing.
- More people employed taking care of other people - and this cannot and should not be "automatized" - is a good thing.

In countries with publicly financed health care and education, like my own country, this means the public sector taking a BIGGER piece of the GNP. This, in my view, is a sign of an advanced society, and I therefore find the persistent wailing from industry, finance and the political right against growth in the public sector totally reactionary and lacking any long term perspective.

[The following is reprinted from the Volume 3 number 1 issue of the *Amateur Computerist*.]

The Spirit of Babbage

Chapter ONE

In the beginning The Spirit of Babbage created the software and the hardware.

And hardware was expensive and low-tech; and incompatibleness was on the face of the hardware.

And The Spirit of Babbage said, Let there be a micro, and there were micros.

And The Spirit of Babbage saw the micro, that it was good: and The Spirit of Babbage divided the Micro from the Mainframe.

And The Spirit of Babbage called the micro Mark 8, and the Mainframe he called the IBM.

And the evening and the morning were the 1st day.

And The Spirit of Babbage said, there be a firmament in the midst of the common elements, and Let

it divide the transistors from the ICs.

And The Spirit of Babbage made the firmament and divided the common elements which were ICs from the common elements which were transistors: And it was so.

And The Spirit of Babbage called the Firmament history. And the evening & the morning were the 2nd day.

And The Spirit of Babbage said, Let the common elements from recent history gather together unto one place and let the clubs appear: and it was so.

And The Spirit of Babbage called the new clubs, homebrew clubs; and the gathering together of the common elements Zilog: and The Spirit of Babbage saw that it was good.

And The Spirit of Babbage said, Let the Hardware be programmed after Jacquard's kind: and it was so.

And the Hardware was programmed: and The Spirit of Babbage saw that it was good.

And the evening and the morning were the 3rd day.

And The Spirit of Babbage said, Let there be microcomputer companies to divide the 4 bit from the 8 bit microprocessor, the 8 bit from the 16 bit microprocessor, and the 16 bit from the 32 bit microprocessor.

And let them be for the existence of versatility in the world: and it was so.

And The Spirit of Babbage made two great companies, the greater company to dominate the business world, and the lesser company to rule the graphics world: and The Spirit of Babbage made the competition too.

And The Spirit of Babbage set them in the Fortune 500 to make sure they could be versatile: and The Spirit of Babbage saw it was good.

And the evening and the morning were the 4th day.

And The Spirit of Babbage created the Altair, which stored data on paper tape, And every Commodore Pet which stored data on cassette tape after his kind: and The Spirit of Babbage saw that it was good.

And the evening and the morning were the 5th day.

And The Spirit of Babbage said, Let the Amateur Computer Clubs bring forth the microcomputer, which stored data on disks, called Apple: and it was so.

And The Spirit of Babbage said, Let us make IBM PCs in our own image, after our likeness, and let them have dominion over the Altair with paper tape storage, and over the Commodore Pet with cassette tape storage, and over the Apple with disk storage.

So The Spirit of Babbage created the IBM PCs in his own image, in the image of The Spirit of Babbage created he it; XT and AT created he them.

And The Spirit of Babbage said, Behold I have given you every programmer, who are in the clubs, and of every piece of software, who wrote all of the pieces; to you it shall be meat.

And to all of the other computers with paper tape for storage, and to every computer with cassette tapes for storage, and to every computer with disk drives for storage, wherein they work, I have given all pieces of software for meat: and it was so.

And The Spirit of Babbage saw everything that he had made, and, behold, it was very good. And the evening & the morning were the 6th day.

Chapter TWO

Thus the hardware and the software were finished, and all the host of them.

And on the 7th day The Spirit of Babbage ended his work which he had made; and he rested in the seventh day from all the work he had made.

But The Spirit of Babbage rested by playing computer games on all of his creations.

And The Spirit of Babbage decided to bless this day by creating a place for him to play computer games peacefully. And The Spirit of Babbage said, Let there be a Charles Babbage Institute. And there the Spirit of Babbage awaits.

To be Continued...in the future.

Michael Hauben

Interview with Staff Member Michael Hauben on the Occasion of the 10th Anniversary of the Personal Computer

(Editor's Note: This interview was conducted on August 11, 1991. It has been edited.)

Ronda: Tomorrow is the 10th anniversary of the introduction of the IBM personal computer on August 12, 1981. Also, one of our staff members, Michael Hauben, is leaving Michigan to go to college in N.Y. Therefore, it seemed an appropriate time to look back on the past 10 years and to review how the introduction of the personal computer has affected our lives. Michael is now 18. In 1981 he was 8 years old and already involved with computers. Michael is not only one of the beneficiaries of the computer

revolution. The computer revolution was carried out, not so much by companies like IBM, but more importantly, by computer hobbyists like Michael Hauben. Thus in honor of the computer hobbyists, who gave birth to and developed the personal computer, we would like to review some of your experiences, Michael, with the computer.

William: How did you get started with computers?

Michael: The first place I really saw computers was at an exhibit in Toronto over 10 years ago. There was a robot that was like the 4 axes machine that auto workers use. They also had a computer exhibit. I don't remember what kind of computer was on display but they were just a bunch of computers running different kinds of programs set up there at the Canadian National Exhibit. That really peaked my interest somehow.

When I was 8 (in 1981), I took a computer class at Schoolcraft Community College, in what was called the Kids College. It was part of what they called the TAG (Talented and Gifted) Program. The teacher's name was Mrs. Brown. We learned on the Apple II+'s. The first day of class, Mrs. Brown lifted the top of the APPLE and said, "There, that's all there is to it, There's nothing to be afraid of." That was a very good introduction to the computer because it showed there was nothing to be afraid of. That we could completely control it. I learned BASIC there. I took several other classes in that program. I think I took three. I didn't take all the BASIC language classes offered. But I took a test that they had for their normal BASIC college level classes and I wound up getting three college credits for the BASIC language class. And I didn't do so good because I ended up only getting a B on the test. But the experience was interesting and from then on whenever there was a computer available I tried to use it.

After the trip to Toronto, I always wanted to buy a computer. There was the Texas Instruments 99/4a (TI 99/4a) and I don't remember how much it cost, but it was expensive. There was the Timex Sinclair 1000 (TS 1000) and that was much cheaper. My family and I had seen Sinclair computers in England when we visited. These computers could be hooked up to a normal t.v. set. I saved up my money and bought a TS-1000. Using it I more thoroughly learned BASIC. My father and I programmed a lot in BASIC with only 2K memory. We never seemed to run out of memory. We just played around and tried to do lots of different things, tried writing little games, graphics

and we dabbled a little in machine language, not a lot however. Whenever I had the chance, whether it was summer camp or in a computer store, I'd try to do something with the computer. I learned BASIC, I learned LOGO on the TI-99/4a in Camp, and I played around with APPLES and with Commodore PETS. In my elementary school, there was a terminal hooked in with the mainframe of the Dearborn Schools. At that time there were many programs on the mainframe. They had BASIC. They had games like the OREGON TRAIL, etc. I subscribed to two or three magazines for the TS-1000. I bought books, did all the TRY THIS type of small programs. Those were always fun because there would always be problems with the programs. There would always be bugs. The books and sample programs were exciting somehow. I haven't found many books similar for programming on the IBM PCs today, books that I have found exciting for a hobbyist. And this is sad.

Soon after I bought the TS-1000, it couldn't have been more than a couple of years, I was trying to choose between the TS-2068 and the Commodore 64. I think the Commodore was more expensive. The TS-2068 had better color, and a more developed version of BASIC. The Commodore 64 was better in that it had a disk drive and the TS-1000 only had a tape drive you could use. The Commodore also had a real keyboard, while the Timex utilized raised chicklet keys. I bought the TS-2068. Then I had my first real lesson in the computer world. Three months after I bought the TS-2068, Timex stopped selling it and supporting it. Timex made a deal with Commodore. There was an agreement to sell the Sinclair in England and Europe and Commodore in the United States. That was a shock because I thought I made a better choice, but it turned out the better deal is not always the best choice.

And my father and I did programming on that, but not really as much as we did on the TS-1000. It was a lot less, even though there was the added attraction of the color and the sound and the joystick port. And so I still did things and I tried to pick up on things whenever I could.

Christmas of 1984, we bought a Sanyo MBC-550-2 which was a MS-DOS compatible, but not an IBM compatible, machine. The operating system was IBM compatible, but the graphics were different, the sound was different, and the BASIC was different. The Sanyo was a better machine for graphics, I think 640 x 400 with 4 colors if not 16. And WordStar worked.

That's why my family got it – as a wordprocessor. I learned MS-Dos. I got more into the PC world. We subscribed to a Sanyo magazine for a while. We went to the Sanyo Users' groups for a while. We occasionally went to SEMCO (Southeast Michigan Computer Organization), but somehow that was already oriented toward business and they weren't very interested in helping us. Then in 1985, through INACOMP, my mother won a Compaq Portable. It was one of the earliest to come out that was fully IBM compatible. It was a luggable portable, and it weighed about 20 pounds, if not more. And that's how I really got into IBM. We had a choice between a modem and a hard drive. We got a modem. It was a breakthrough. The hard drive seemed important but the modem was more important. We wound up getting a hard drive later on. With the modem, it lets you connect to the outside world. With your own little system you'd be like a hermit, but in connecting with the rest of the world, it's other people's opinions, different discussions about computers, about current events, debates about what's going on in the world and just general BS also. And you came into contact with people, you came into contact with different files to use with your computer, with what was going on with the computer scene and so somehow it was like a replacement for a user group. And depending upon the time, there was either a lot going on or a little going on.

Ronda: What do you mean?

Michael: Well right now not many boards I know have much debate on them. There are two that I am on. Both of them have debates on-going. I'm sure there are others, but I just haven't had time to look. But for a while I was on many of the boards and at one point many of the boards were silly contests to see who could post the most numerous messages.

Ronda: Do you have a sense what you were looking for on the BBS's? You used to spend a lot of time on them.

Michael: Well at first I wasn't on local BBS's. Originally, I was on COMPUSERVE.

William: Free time?

Michael: Well, the first two hours were free. I almost became a beta-tester for Infocom through COMPUSERVE. I sent in the application forms. I then received a congratulations letter, but Infocom never sent me any games to test. The only response was a Christmas card. That was a soured CompuServe memory. I found some local BBS numbers listed on

CompuServe and from my father and some friends of his from work. For a while I was mostly on Commodore BBS's and not many IBM boards. But then I started calling the IBM boards. It was new for me when I started. Modeming was a connection to the outside world to other people with similar interests. It was interesting – the debates about current events. Somehow there was the possibility for intellectual discussion which I couldn't find elsewhere besides my parents and a few friends like Floyd Hoke-Miller. But among my friends at school or neighbors, there wasn't much of a possibility.

When we lived in East Dearborn, our next door neighbor, Tom, had an Atari and a Commodore 64. He shared an interest in computers with me. He was my friend, even though there was a large age gap, because we were both interested in computers. He let me come over and try some things on his computer and I'd go with him to computer stores.

William: Another thing about modems you can't tell the age. Treats you more like an equal.

Michael: There's an anonymity. You don't know anything about the other users. So you are more willing to accept them. There are still first impressions. If you act like a real idiot, people won't like you. But the full element of first impressions is left out. And people tend to rank you or be friends with you on how you act on-line, what you speak about. It does help. You tend to get to know the people and there isn't as much blocking. And my first handle was Wizkid. I changed my handle 2 or 3 years ago to Sentinel. And there was one person who signed on and said it was great knowing you. He was one of the people who knew me as Wizkid. There was a "Remembering the OLD Days" theme area on one of the BBS's and someone said, "remember that Wizkid." And I said, "that was me." And he said he didn't know that. When people change their handles, it's public but somehow people don't always realize it. When I changed my handle, I decreased my activity. When I decreased my activity it was because there were just silly messages that didn't mean anything, or they just seemed juvenile, and I don't know if that's because the people calling were younger or they were more juvenile. The way people accept you is based on your maturity on-line and your maturity showed through more than your age. And there was one debate where someone said you are just a kid. And I used to have the handle Wizkid. But it didn't matter what your age was, it was more how mature you

were. He was trying to say “Well you’re just a kid, you can’t know anything.” But he was wrong. So there is less age discrimination on the boards.

Ronda: Why did you decrease the time you spent on the boards?

Michael: I had to spend more time with school, with friends, with my job. Whenever I used to come home from school, I used to spend 2 or 3 hours, but then my mom said, “We need the phone.” So I didn’t spend my free time before homework on the modem. And then with work, I wasn’t even home on certain days to use the modem.

Ronda: But it seemed you were also a little disappointed. There were user parties, but it seemed the computer world didn’t extend outside of the modem.

Michael: It did to a certain extent, but it didn’t include everyone. Like some people were friends before. There were modem parties where people from the boards got together, whether it was a software swap or a party.

Ronda: There weren’t many, were there?

Michael: Well, what happened was the main person who had the parties was from a TAG board in Taylor. He had his computer stolen after the 2nd or 3rd party. So he stopped holding them. Then there were multi-user boards. There was M-Net which was a multi-user. The general ages of the users on M-Net was older than on the other single-user BBS’s. And it was more serious. It was more a UNIX board. It was a different bunch. It was not the home but the people in school, in Ann Arbor. It seemed like the multi-user boards made it easier to hold parties because users could chat live one-on-one. And when AMUSERS (a multi-user board) closed down, I didn’t get on other multi-users that were like AMUSERS. Some people already were friends but you didn’t end up doing much so it was a little disappointing. Cause it didn’t seem like there was any – it didn’t get anywhere – it was just on-line so that was a little disconcerting. It was disappointing because that was where I had found more intellectual people but it didn’t go anywhere. And things like COMPUSERVE cost a lot of money. There’s COMPUSERVE, there’s Delphi, there’s Geni, there’s PC Link, there’s Q-link, there’s a couple of services but they all cost money, so that’s hard to deal with. And then there are bigger boards that exist. But they all cost money. There’s the WELL. That’s in California. You also pay per hour like Compuserve. So it’s harder to be on. It’s like M-Net. It’s the same software as M-Net. And maybe

I did find it disappointing. It used to be there would be lots of new BBS’s popping up. But they were interesting. And now there still are lots of new BBS’s popping up. But they’re silly. So it’s gone downhill a little bit. And also BBS’s are similar to the CB or the Ham radio in that people voice their opinions, or have discussions or chat or there used to be DDial’s – all they were were multi-user, people chatting, but they were 300 baud so they were super slow. Some of those you had to acquire membership. But they were linked up across the country. There were things called LINKS that would connect you to other DDial’s around the country. So that way you could talk to people.

Somehow the thing about BBS’s was it was the ultimate vehicle of Free Speech, uncensored speech. For the most part things were not censored. What you posted was left alone. It was like everyone’s Letter to the Editor was allowed to be printed. There would be letters debating other previous letters. Different SysOps had different rules and some would delete messages that contained profanity or were only personal attacks or something. BBS’s are the greatest form of free speech. The problem was you needed a modem and a computer to get into it. So it’s not as free as it might be, but compared to the newspapers, the newspapers print what they choose, whereas on BBS’s everything is printed, everything is published. It’s more of a dynamic medium than a static medium because depending on the board there’s different forms of dealing with messages. For example, some boards after the first 50 messages go by, the first message is deleted, so it’s a dynamic thing. Unless somebody prints out a copy or saves it to disk, it doesn’t stay static. Like on M-Net, things aren’t deleted. They are deleted when the message SysOp of the area decides no one is interested anymore. That’s more of a choice method of deletion, than where it deletes messages or the new one pops in, the old one pops out and it’s deleted. And even depending on what happens, it’s still an important medium.

There was, for example, just a debate about the war against IRAQ on BBS’s. Usually you didn’t see where there was dissent. Whereas on the computer, if people wanted to, they could debate it and there was debate about it. A free medium. It’s open access. Not closed. It’s also a field where the hobbyist still exists. There are people who develop ways of using the modem, whether it’s different compression techniques where you can send more and larger files

quicker, or whether it's different file protocols that send them faster over phone lines. Those are constantly developing. That is a hobbyist frontier now. Maybe there are less people than when the computer started out. But it still exists. It's a frontier that's not closed up yet. It's not definite yet. New things are continuing to come out. For example, higher speed chips for the serial ports in the computer so that the computer can talk to the modem at a higher speed and everything.

Part II

Ronda: Do you think there are any lessons from what is going on?

Michael: Well, the Timex/Sinclair Commodore agreement was proof that the best choice is not always for the best. The best product does not always end up being marketed or sold. That seems true of many things in this capitalist world. Sony's Beta video system was technologically superior to the current VHS standard. I don't know if there is a lesson to draw or not. A similar problem is occurring with computer magazines. In particular I am thinking of: Popular Computing, Family Computing, PC Computing, Creative Computing, and Compute. Most of the magazines have changed their priorities from an emphasis on hobbyist or home users to business. Popular Computing disappeared shortly after changing its name to Business Computing. The same thing happened with Family Computing after it changed its name and emphasis to Home and Office Computing. Unfortunately PC Computing is following the same path. PC Computing started out as an alternative to other magazines such as PC Magazine and PC for the home or hobbyist crowd in the PC community. It had reviews of games and broader articles, while being a smidgen less technical and completely unconnected to a business point of view. The subtitle is now "The magazine for Business Computing Experts." Readers have recognized the change and written letters to the editor to comment and complain. As for other examples, Creative Computing vanished and Compute compressed down to one magazine from what was four. However, Commodore 64s still sell, and that is a viable community. I guess PCs are coming home from the office, but that doesn't mean they are only used for business at home. A whole community seems to be left un-serviced by this trend in computer magazines. True, computer gaming magazines exist, but home computers are used for much more than just playing games. One problem is that PCs are not

particularly getting cheaper. Any decrease in price has more or less been incidental to the increase in power. The 386s (Intel 80386) cost today what the 286 (Intel 80286) cost yesterday. But there are still no really affordable computers in the \$100 to \$200 range. This is sad, because the computer is not as affordable as it should be. Thus, personal computers are still not a normal part of most households which was the real goal of the personal computer revolution. While most homes have been affected by the arrival of microprocessors in many home appliances, the Personal Computer itself is not yet a home appliance. The general recent trend of computer development is aimed at business, as opposed to the people. Not for the majority, but for the minority. It's like what IBM did for the mainframe and other mainframe manufacturers in the '50s, '60s and '70s. The mainframe then was only affordable by the biggest of the big companies or the large educational institution. The difference today is that small business can afford computers, but still only businesses. Computers are marketed as for businesses and entrepreneurs, and not for the average person at home, or for the majority of the people. The radical push of the personal computer movement in the mid to late '70s was to make the computer available to everyone, and not just accessible to Fortune 500 companies. True, these days computers are much more affordable than 20 years ago, but the general movement in the personal computer world seems opposed to its roots.

Ronda: How so?

Michael: IBM exemplifies this movement with the release of their PS/2 line. These computers have a proprietary bus. IBM changed the name away from Personal Computer to Personal System/2 which is more like the main-frame names. It made it less friendly in that sense.

Ronda: Are you optimistic? Pessimistic? What do you think will be the future with computers? With you and computers?

Michael: Well by going away to school I'll gain more access to what's called the Internet, the big net that exists, the connection of computers across this country and across the world. You gain more access when you go into an educational community. I'm optimistic because of that. I'll have to manage that as part of my time. Businesses and education are involved in that. It's harder if you live at home to have access to it. (Editor's Note: Home access is more available now, than it was a year ago when this

interview was done.) Somehow you need something powerful enough to hook into. It's not quite fully open. If you live near an educational community you can gain access to it. I have and you can. Our connection is MichNet. So that will be broadening. That will be a connection with the rest of the world computer-wise, but it's not quite just the computer. So that's encouraging.

Somehow they are working on building things smaller and more minuscule but not quite pricewise. The computers aren't quite like the microwave and the VCR. Home appliances started out expensive but there are now so many different companies making them that they have come down in price so they are affordable. As I said before computer performance increased but it doesn't come down in price. Actually, it's going to be a stretch to buy a computer for myself, but I wouldn't have been able to buy one last year. What used to be \$2000 is now \$1000 or coming closer to \$1000.

Ronda: Do you think there has been some kind of revolution with computers? Do you think there has been a computer revolution?

Michael: Well, there is the personal computer. If it was up to the big companies, there wouldn't have been one. As I said the corporate trend is reactionary.

Ronda: Do you think there's been a computer revolution, William?

William: What do you mean by a computer revolution?

Ronda: That something fundamental has changed because of the computer.

William: Fundamental?

Ronda: Or something substantial that you see at work?

William: We're using computers more. We've got IBM 486 computers on the shop floor.

Michael: But what do you use them for?

William: For altering and transferring programs to our CNC machining center. We got rid of the Westinghouse computer in the computer room and you can download more files into the 486 computer. It has all our files already. It won't hold us up when we are running the machine.

Ronda: But the computer isn't being used to run a machine?

William: No it's not to run a machine directly. You have other computers for that.

Michael: So the computers are like terminals?

William: It's like a database. But you can edit and

change the data if you need to.

Ronda: Are most people comfortable with them. Or is it that if people don't have home computers it's harder to use them?

William: Well they have menus instead of working with DOS. It just takes a F[unction] key and that is it. We finally got a manual for it. The editor is difficult to work with. They're still working on a new editor....

Ronda: Remember they were talking about the workerless factory in the last 7 or 8 years. My sense is that hasn't come to pass.

William: Well, there are a lot less people working in my shop. They're standardizing everything so there's less skill involved in putting dies together.

Ronda: But the computer hasn't cut the people out or caused problems?

William: No.

Ronda: So do you think there's been some kind of computer revolution in the last 10 or 15 years? That something substantial has happened to change....

William: Society?

Michael: Well a lot of things have computer chips in them now. All your household appliances have them from the tv set on.

William: Cars have them.

Michael: Cars have them now so society has been changed by the introduction of them. The mainframe computer didn't use processing chips. It took buildings with several floors to house those computers. But now, the personal computer is the achievement of the trend of miniaturization that came in the 1950s.

William: More like evolution, right. You got chips in tv's now. You got picture-in-picture, not revolution, not a substantial change.

Michael: Well, there was the miniaturization after WWII but it didn't hit computers then. Computers were still the great big mainframes that used the vacuum tubes. Then came the transistor, the micro-processor, and the integrated circuit. But they weren't really utilized with the mainframes. Or if they were, instead of a whole floor, it was a room. But it wasn't down to a single chip which now exists and which is constantly getting smaller. They think they're reaching the bounds actually. Now people are speculating that the silicon chip has reached its physical speed and size limits and a new material needs to be used, like chemical or biological materials instead of electronic. But I feel if it had not been for the personal computer revolution, there wouldn't be such use of processing chips and use of computing tech-

nology involved in so many things in our daily lives.

Ronda: But I feel the substantial question is are they being used to produce more with less labor? I think they are being used more as consumer goods. But it doesn't sound like there has been a change, a fundamental change in the way things are produced. For example, at the beginning of the Industrial Revolution, people worked in their homes. Then people were brought into the factories to work together. There was an increasing division of labor, and then machines were introduced and people operated the machines. Then machines were used to operate other machines.

It doesn't seem as if the computer has led to a similar kind of change in industrial production. It doesn't seem that computers are widely used to produce things. It seems the computer has been used for paperwork but not for producing goods.

William: It takes longer to get a computer to do something than it does a machine. They are probably working on that stuff too.

Michael: But actually there's something called CAD/CAM or Computer Aided Design and Manufacturing. But then there's something called CIM which I did study and it seemed like it was trying to steal the computer and give it to management which was a top down design and not a bottom up design. When I read about it two years ago it seemed a flop. It was trying to steal the computers from the people rather than using the computers to help the manufacturing process. But I don't know what your experience has been with CIM.

Ronda: But there was also a big push to lower wages and have people work a lot of overtime. And I thought that got in the way of using the computer to make production more efficient.

William: You also had international competition too. Third world countries have cheaper labor. So we had to compete with them. So that's one reason why the lower wages.

Ronda: But you can never compete with the cheapest country, and in fact the story of production is that the higher the wages, the more advanced the technology, the less labor that goes into producing something, the cheaper it can be sold for. Somehow the whole stress of trying to make U.S. workers compete with workers in less industrialized countries is a backwards trend. The price of things is very high because hand labor is very expensive. So in this country we had the ability to make production more

efficient, that's the story of how cars have gotten cheaper, how microwaves have gotten cheaper, how air conditioners have gotten cheaper because there were more advanced technologies, not because you found someone abroad to work for cheaper wages. With cheaper wages and backward production methods, the price of goods stays high. There is a need for more public discussion over how computers can be used to change industrial production. There was a fight with the corporate world over what would happen with computers and people had to challenge the corporate barrage demanding wage cuts and longer hours which impede automation. There are examples of countries where advanced technology that was available was never used in production because workers' wages were so low or their hours so long that it was not cost efficient to put in the new machine. So that country remained technologically backward. The story of the development of technology is that the more advanced technology somewhere replaces the lower wage backward technology somewhere else, not that goods made by low wage workers replace goods made with less human labor and operating more efficient machines. But workers have to organize to prevent the wage cuts and increased hours that impede the introduction of new technology. Somehow the corporate attack on workers and unions has led to people looking backward, not keeping our eye on how to go forward.

Ronda: Any final words?

Michael: Even though I have decided to go to Columbia University in NYC instead of the University of Michigan, I am optimistic. Columbia is less computer-oriented than the University of Michigan, but Columbia seems better connected to the educational and academic computer networks. But Michigan for me would have been a better computer school. Columbia has more of its computer roots in the past while Michigan has more in the future. There are a couple of centers opening up and there is, at Columbia, the State Center for Computing Research. But it's not as obvious as Michigan how involved Columbia is with computers. I am sort of pessimistic, because with the age of the computer industry, it seems to have receded. But it's probably just a cycle.

Ronda: No, it's a fight. You have to figure out how to take it up. The personal computer caught people by surprise when it spread so quickly and so substantially. People now have to evaluate what has happened. I feel the lesson is you can't trust the business

world of large corporations to develop computers and computer technology. Big corporations can't be coddled by government, the press, etc. and encouraged to freeze the development of technology or to go backwards to hand labor as they have done in many instances. The machine is a machine for society. It was a mistake to have trusted that the corporate world would develop it. Instead the corporate world must be regulated and limited in its efforts to impede the development of technology. That's what antitrust legislation originally accomplished. The personal computer was created while there was a U.S. govt. anti trust suit on against IBM which kept it from interfering with the development of the personal computer. Once again there is a need for something independent of the corporate world, and there is a need for regulations and limitations on the corporate world so that their narrow self interest is prevented from interfering with social and technological development.

Michael: You need a new Henry Ford for the Computer world.

Ronda: No, you need another Computers for the People movement.

Michael: No, again.

William: My niece is going to go to Michigan State and she's not going to get a computer. She's going to get a word processor. You have a screen, keyboard, and a printer all in one unit. That suits her.

Michael: But it's not compatible with anything other than another wordprocessor of the same type.

William: There are some that have a floppy disk.

Ronda: But it's sad the computers aren't cheap with a cheaper printer too.

William: Well it's a letter-quality printer, she's not going to be doing graphics.

Ronda: I thought John Kemeny once predicted that there would be computers used in the schools for wondrous things. But now he is disappointed that that has not happened.

William: One of the problems is software. There aren't enough software developers to write programs people need. To get them involved.

Michael: It's not just software developers, it's ideas. People are not creating new ideas but merely copying old ideas.

Ronda: But I thought that there was the discouragement, when people were told "People don't need to learn to program." Michael learned to program and it was a good thing he learned to program. Instead of

saying it's a good thing to learn a little programming it was said you don't need programming. So it seems that there has been a lot of pressure to keep people away from utilizing computers and discouraging them instead.

Michael: I left out that I know a little MS-DOS batch language, a little C, and a little Forth. I did very little in Assembler.

William: Are you going to take computer classes in collage.

Michael: I don't know if I'll have time.

Ronda: To sum up, it seems it is as if this period is like the period in France before the French Revolution. Then there was the basis to have capitalism, but you had the feudal lords and the King holding society back. You had a Monarchy. There was a need for the French Revolution to get rid of the Monarchy and the Aristocracy and the feudal social forms and laws that they kept in place. They prevented the reforms that were needed to develop large scale production in France. The problem we have today seems similar. Big companies are discouraging investment in new technology like computers because such investment will lower their rate of profit. There is a need to get rid of this fetter so that technology can be encouraged and developed. In France, in 1789, it took a revolution to get rid of a similar fetter. What will it take now?

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