City of Seattle
Information Technology Residential Survey
Final Report

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Acknowledgments

Executive Summary

Background

The City of Seattle Department of Information Technology (DoIT) contracted with a consultant team (Applied Inference, Pacific Market Research and Andrew Gordon of the UW) to assess the current level of information technology access and literacy among Seattle's residents, explore residents' perceptions about information technology and assist in assessing community needs and interests for use in the cable franchise renewal process. City staff from DoIT and the Citizens Telecommunications and Technology Advisory Board (CTTAB) developed a set of indicators to measure a broad range of impacts that information technology is having on Seattle residents. This survey is intended to update and, when possible, to compare with a similar survey conducted in 2000.

Methods

City of Seattle staff and consultants developed a 19-minute telephone survey that was administered to 1000 random Seattle residents. Certain ZIP codes were sampled more heavily to increase the percentage of respondents from ethnic minorities to reflect Seattle's demographics. Cell phone only households and non-English speakers were not surveyed. Statistical weights were developed for the final sample to balance ZIP code, ethnicity, age and income according to Seattle values reported in the 2000 U.S. Census. Statistical comparisons were made using unweighted data while accounting for subgroup imbalance by including age, gender, income, education, ethnicity and when possible, year of survey in each analysis. In-depth analysis was conducted for subgroups, though small sample sizes limited analysis of some ethnic subpopulations.

Key Findings

Overall, Seattleites are technologically savvy – 83% of Seattleites use the Internet somewhere and 83% have a computer at home. Seventy percent of households have cell phones and nearly two-thirds subscribe to cable television.

Computer access and literacy

The level of home computer access has grown about 10% from 2000. In lower income homes, the increase in home access is about 40%. Although, broadband Internet services adoption has tripled since 2000 (from 18% to 55%), Seattle still has a significant digital divide. The top two reasons for not having a computer at home are cost and lack of interest. Older Seattleites or those with less income or education are less likely to be current or comfortable technology users. Lower levels of connectivity and comfort with technology are also evident among African American respondents – African Americans were about one-third less likely than respondents of other ethnicities to have home Internet access – but the gap is not as pervasive as with seniors and those with less income or education. Residents with disabilities were also much less likely to have computer access at home (58% vs. 83%).

Comparisons with responses given in 2000 indicate that overall, Seattle residents' technology use and literacy is growing. The responses further suggest that Seattle's digital divide is closing for some groups – the greatest gains in home computer and Internet access were in the lowest

income households – but access and literacy are not yet equal across all of Seattle's communities. Of the dimensions of the digital divide examined here, the age divide seems the most consistent, pervasive and unchanging.

More education and younger age seem to offset the negative effects of low income on access to technology. Further, the younger respondents seem to lead the way in adopting new technologies and expressing interest in technology coming to the market that is not yet widely available, indicating that Seattleites are likely to continue to demand access to cutting edge technology into the future.

People with more education and more income use a computer for more activities. The most popular activity is keeping in touch with family and friends (92%), followed by researching prices and products (85%), purchases (82%) and getting news (81%). Just under three-quarters (71%) use the computer for education and almost 7 in 10 use it to find health or medical information. About half use it for social services or legal information and assistance.

People also have an interest in contributing content. More than a third contribute to a website, bulletin board or online group, one of the two activities that were similar across demographic groups. The other was finding social services. Demographic differences based on age or income emerged for many other activities, with more use associated with more income and younger respondents. Some surprising demographic differences emerged that suggest access or awareness gaps. For example, seniors are less likely to use computers for keeping in touch with friends and family, sharing photos, seeking information about leisure interests or about health or medical information.

Most people are "satisfied" or better with the content of the Internet for their needs (85%), with just under half (48%) being "very satisfied." Seattleites are quite concerned about viruses and SPAM (unsolicited advertisements sent over the Internet), and confidence in the security of financial transactions is moderate with only 15% saying they are "very confident." Concern about the security of online financial transaction follows the fault lines of the digital divide reported above – those with less education, less income, seniors and African American respondents are least confident in the security and privacy of their online financial transactions. This suggests that the transition to electronic payment for government transactions will also be most challenging for these groups.

People are generally, but not overwhelmingly satisfied with customer service from their ISP's. Broadband users feel their Internet rates are too high.

Cable

Nearly two-thirds (65%) of Seattleites subscribe to cable TV. The subscription rate is about the same across subgroups, except it is higher among seniors and lower among younger respondents. Overall, cable subscribers are satisfied with their cable service, but most have had at least one problem with it and those who have are less satisfied with customer service. Cost of cable service is an issue for subscribers (two thirds find it too expensive) and non-subscribers alike (37% say they don't subscribe because of the cost).

Four out of five respondents – subscribers and non-subscribers alike – said they would be somewhat or very likely to subscribe to at least one new service that requires higher bandwidth, should it become available. Younger respondents – the group least likely to be current cable subscribers – led the interest for several of these services.

This survey uncovered some outreach opportunities for the City. About one-fourth of the respondents, subscribers and non-subscribers alike, are aware of the City's Cable Office and 20% said they wanted to be contacted by the City regarding their rights as a cable subscriber and discounts for low income seniors and people with disabilities. This information was provided to the Cable Office for follow-up.

About half of the respondents have watched SCAN, Seattle's public access channel, and about 80% think it is important or very important for individuals and organizations to have the opportunity to create and show their own television programs. Those who have seen SCAN give it a higher importance rating, but 78% of those who haven't watched it also rate it as important or very important.

Accessing city services

The City's website and TV channel have both seen significant growth in use since 2000. Use of the City's web site has gone up by half (from 33% to 49%). About half (56%) of 2004's respondents have seen the Seattle Channel. Among cable subscribers, 69% have seen it, up from 57% of cable subscribers in 2000. No increase in use of the website was seen among those with less education or for those above age 65. The increase in use of the Seattle Channel is seen in nearly all the demographic groups except those with lowest income, where it remained low (largely due to lack of access to cable services), and among African American respondents, those with more education and males, where it was already fairly high.

About half (55%) of the respondents say they prefer to access City services online, and 63% say that they've used the Internet to get information from some government entity in the past year. Even a quarter (27%) of those who don't have home Internet access say they prefer online access to services. Demographic differences emerged in preferred mode of communication with the City. Seniors, and those with less income or less education fell well below the 55% average preferring online access to services. Seniors tend to prefer using the telephone (31%) or writing a letter (24%), those with less education also prefer to write a letter (23%) or visit the City offices in person (19%). African Americans are less likely to select email as the preferred method to interact with government. African American users of Seattle.gov are also significantly less likely to use it to contact a city official to express an opinion (41% vs. 67%). Seniors are least likely to pay bills or fees online (11% vs. 60%).

The most important online government services indicated were paying bills, fees or taxes (26%), applying for license or permit (24%), finding maps (21%), and expressing opinions (20%).

Community involvement and civic participation

Seattleites are involved in a variety of organizations. Nearly three-fourths (71%) are involved in some type of group or organization, the great majority of which (77%) use email or a web page to communicate with their members.

Respondents are moderately positive in their assessment of the effectiveness of email and the Internet as ways to communicate opinions about issues that affect them in their community (half say it is effective or very effective). These responses are similar to those given in 2000. People with more education and younger people tend to see email and the Internet as more effective. Respondents are less positive about the use of email and the Internet as a way to communicate with elected officials (41% say it is effective or very effective), although the ratings are more positive than they were in 2000 (when 37% gave these ratings).

Business and economic development

There has been a large increase since 2000 in the percent of residents selling goods or services from home (8% to 20%, up 2 ½ times) and more people are looking online for information about local businesses. This use is up to 71% from 61% in 2000. Respondents with more education or more income, men, and people younger than 65 are more likely to look online for information about local businesses. For those younger than 36, the income differential disappears. African American respondents with less education are especially less likely to use the Internet for local business information.

Conclusions

Seattleites are technology-users. Increasingly, residents are using the Internet and cable in many aspects of their lives: personal, business, community, and civic. Even though concern about the safety and privacy of online financial transactions, computer viruses, and SPAM is high, Seattleites continue to want electronic access to information and services, as well as the opportunity to create their own content via public access television and web sites. As more services and technologies become available, Seattleites are likely to adopt them, creating a need for increasing infrastructure capacity to support emerging applications.

As many of Seattle residents are using new technologies and services, the adoption of, and comfort with these technologies continues to be highly disproportionate. There is a risk of leaving a relatively large percentage of specific groups of residents behind – seniors, those with less income or education, and to some extent, some ethnic minorities. People in these groups are adopting technology more slowly. Overcoming barriers to adoption will require consideration of a variety of factors, including cost, literacy, relevancy of content, and exposure to the opportunities provided by using specific technologies and services.

These findings identify a challenge to governments, community organizations, and businesses to explore what essential levels of technology access and literacy are, and to work to ensure equity in opportunity for all of Seattle's residents.

Seattle residents are likely to continue to be advanced consumers of technology and the services delivered by technology. The needs and opportunity exists to equalize the playing field and to enhance use of cable, computers and other technologies for economic development, community building and civic participation.

Background

The City of Seattle Department of Information Technology (DoIT) contracted with a consultant team (Applied Inference, Pacific Market Research and Andrew Gordon of the UW) to assess the current level of information technology access and literacy among Seattle's residents, to explore residents' perceptions about information technology and to assist in the cable franchise renewal process and will be used as part of the community needs assessment. City staff from DoIT and the Citizens Telecommunications and Technology Advisory Board (CTTAB) developed a set of indicators to measure a broad range of impacts that information technology is having on the Seattle area. This survey is intended to update and, when possible, to compare with a similar survey conducted in 2000.

Methods

DoIT and CTTAB staff with the advice of their cable franchise consultants collaborated with the survey consulting team to develop and refine the current 19-minute survey, to be administered by telephone to 1000 random Seattle residents.

Survey Sampling, Inc. provided a random sample of Seattle area telephone numbers. As the interviewing process progressed, it became evident that ethnic minority respondents were under represented in the sample of completed interviews. In response, a targeted sample of telephone numbers was ordered focusing on Seattle ZIP codes with a higher incidence of ethnic minority households.

Overall, 4894 telephone calls were made that resulted in contact with an individual. Of these 1000 resulted in completed surveys and 3894 were terminated early. Table 1 summarizes the reasons for termination.

Table 1. Disposition of terminated calls

	Number	Percent of calls
Completes	**1000**	20%
Unqualified incompletes	**425**	9%
Not 18 or older	206	
Not a Seattle resident	154	
No such person	14	
Claims previous interview	20	
Over quota (ethnicity, gender)	31	
Refusals, before screener	**2594**	53%
Never call this number	33	
Screener refusal/break off	35	
Hard refusals	1048	
Soft refusals	1478	
Callback (scheduled or not)	**440**	9%
Qualified refusal	**39**	1%
Communication/language	**396**	8%
Spanish	104	
Asian	112	
Other/unknown	135	
Other communication	45	
Total	4894	100%

Table 1 shows that about half of those contacted did not wish to participate in any survey. It is not known how many of these individuals might have been qualified. Nine percent of the calls were terminated because the person was unqualified[1] for the survey, another eight percent because of a language or communication barrier and for another nine percent, the respondent asked to be re-contacted at a better time. Very few (39) refused to continue after qualifying. Of all the calls reaching a household, 20% completed the survey. Of those known to be qualified, 68% completed the survey.

In addition to those calls detailed in Table 1, other phone numbers were dialed. Table 2 summarizes the disposition of those calls.

Table 2. Disposition of other phone numbers dialed

	Number	**Percent**
No answer/ busy/ answering machine	2000	21%
Non working numbers	5554	59%
Non-residential numbers	1143	12%
Other phone problems (fax/modem)	633	7%
Total	9330	100%

Tables 2 shows that of the calls where the interviewer did not reach a member of a household, 59% were non working numbers. Another 21% of the numbers rang, but was not answered. Twelve percent of the numbers were non residential and seven percent were fax or modem numbers.

Weights

Because of the targeted sampling discussed above the geographic distribution of survey respondents was dissimilar to the distribution of the city's residents. To correct for this, weights were calculated so that individuals from undersampled ZIP codes would be counted more heavily and those from oversampled ZIP codes would be counted less heavily. In subsequent calculations, respondents were further balanced according to ethnicity, age and income. Tables 3 and 4 display the distribution of the sample at each stage of the weighting procedure, compared with the 2000 U.S. Census data.

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[1] Disqualified individuals would be those younger than 18, or living outside the city of Seattle.

Table 3. Distribution of respondents by Seattle ZIP code after iterative adjustments in weights

ZIP code	Seattle population[2]	Unweighted sample	Adjusted by			
			ZIP code	ZIP code and ethnicity	ZIP code, ethnicity and age	ZIP code, ethnicity, age and income
98101	1.6%	1.5%	1.6%	1.5%	1.4%	1.4%
98102	3.5%	2.6%	3.5%	3.4%	3.4%	3.4%
98103	7.0%	7.1%	7.0%	6.6%	6.6%	6.5%
98104	2.3%	1.1%	2.3%	2.5%	2.2%	2.3%
98105	6.7%	5.1%	6.7%	6.6%	7.5%	7.3%
98106	3.2%	3.3%	3.2%	3.5%	3.5%	3.5%
98107	3.5%	3.3%	3.5%	3.4%	3.7%	3.7%
98108	3.0%	3.7%	3.0%	3.6%	3.6%	3.5%
98109	2.8%	2.1%	2.8%	2.5%	2.4%	2.4%
98112	3.3%	2.1%	3.3%	3.1%	3.2%	3.2%
98115	6.8%	7.3%	6.8%	6.1%	5.9%	5.9%
98116	3.4%	2.8%	3.4%	3.2%	3.0%	3.0%
98117	4.7%	4.4%	4.7%	4.3%	4.2%	4.2%
98118	5.7%	17.5%	5.7%	7.1%	7.1%	7.0%
98119	3.3%	3.7%	3.3%	3.0%	3.0%	2.9%
98121	1.6%	1.8%	1.6%	1.5%	1.5%	1.4%
98122	4.7%	4.1%	4.7%	5.0%	5.0%	5.2%
98125	5.5%	5.4%	5.5%	5.2%	5.2%	5.2%
98126	3.7%	3.0%	3.7%	3.4%	3.3%	3.4%
98133	6.7%	3.0%	6.7%	7.0%	7.8%	7.8%
98134	0.1%	0.3%	0.1%	0.1%	0.1%	0.1%
98136	2.6%	1.6%	2.6%	2.5%	2.4%	2.3%
98144	4.7%	6.1%	4.7%	5.3%	5.1%	5.3%
98177	3.6%	1.3%	3.6%	3.1%	2.7%	2.7%
98178	3.2%	3.9%	3.2%	3.9%	3.8%	3.9%
98199	3.0%	1.9%	3.0%	2.6%	2.5%	2.5%

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[2] Seattle population values based on 2000 U.S. Census figures for Seattle

Table 4. Distribution of respondents by demographic categories after iterative adjustments in weights

	Seattle population	Unweighted sample	ZIP code	ZIP code and ethnicity	ZIP code, ethnicity and age	ZIP code, ethnicity, age and income
				Adjusted by		
Gender						
Male	49.8%	50%	51.5%	50.5%	50.4%	50.4%
Female	50.2%	50%	48.5%	49.5%	49.6%	49.6%
Race/ethnicity						
African American	8.4%	9%	5.6%	8.4%	8.1%	8.1%
Asian / Pacific Islander	13.5%	9%	7.9%	13.5%	15.0%	15.4%
Caucasian	69.5%	76%	80.7%	69.5%	67.7%	67.2%
Hispanic / Latino	5.2%	3%	2.2%	5.2%	5.7%	5.8%
Native American / American Indian	1.0%	1%	1.7%	1.0%	1.0%	1.0%
Other	2.4%	1%	1.3%	2.4%	2.4%	2.4%
Age category						
18-24	14.3%	8%	8.4%	11.0%	14.3%	14.5%
25-34	26.3%	22%	22.3%	24.8%	26.3%	26.0%
35-49	30.3%	31%	29.3%	32.0%	30.3%	30.5%
50-64	16.7%	26%	25.8%	26.8%	16.7%	16.4%
65+	12.4%	13%	13.2%	13.7%	12.4%	12.5%
Income category[3]						
Extremely low (>30% of median)	12.9%	13%	11.9%	13.4%	13.8%	12.9%
Low (30% - 49%)	14.6%	12%	11.5%	12.2%	12.8%	14.6%
Moderate (50% - 79%)	18.4%	14%	13.7%	15.2%	15.8%	18.4%
Middle (80% - 94%)	13.2%	18%	16.8%	16.9%	16.9%	13.2%
Upper middle (95% - 119%)	15.8%	15%	14.1%	14.9%	14.9%	15.8%
Upper/ high upper (120%+)	25.2%	27%	27.8%	27.4%	25.9%	25.2%

Inferential analyses, usually factorial analysis of variance or two-way frequency distributions with a chi-square statistic, are conducted where appropriate assumptions are met. These analyses were computed without weights; however, weighted percentages and means were reported. All differences reported are statistically significant at $p<.05$, unless otherwise noted in the narrative.

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[3] Population percentages based on regional figures for income category

Limitations

Telephone surveys have fundamental limitations:

♦ The findings represent only those households that have a working telephone. According to the 2000 U.S. Census, this number is high in Seattle (98.9% of Seattleites have working telephones at home), so this is not likely to present a substantial bias.

♦ When conducted in English, telephone surveys require that a qualified person (in this case, someone 18 or older) be able to speak English well enough to participate. Also according to the 2000 U.S. Census, 9.3% of Seattleites speak English less than "very well." This could be more problematic and might lead to under-representation of important groups in this survey, and an overestimation of the indicators.

♦ People who agree to participate in a telephone survey and who persevere through it may be different in other ways from people who refuse to participate at all or who do not complete.

These are some of the ways in which the sample might be biased. That is, the sample may be made up of individuals who may not be representative of all the community's residents. The practice of applying weights to certain subgroups is an effort to balance the sample to make it more similar in certain characteristics to the population, but it cannot make up for subgroups that are missing entirely.

A separate concern is the accuracy and representative-ness of the responses themselves. This issue is addressed with the concept of the confidence interval. This concept is based on the idea that any sample is unlikely to provide responses that are the exact true population values. As the sample size grows, the sample responses become increasingly likely to be closer to the population values. In a survey of 1000 adults, statements about the population are made with 95% confidence that the values reported are within three percentage points of the true population values ($\pm 3\%$). Figure 1 below shows that 83% of the respondents report having a home computer. Putting this into the context of a confidence interval, since this is based on the sample of 1000, we can be 95% sure that between 80% and 86% of Seattle's residents have home computer access. When conclusions are being drawn about subgroups in the population, the confidence interval grows, so that percentages representing a subgroup of 100 would have a confidence interval of $\pm 10\%$. (For inferential statistics, when a significant difference is found between subgroups, we are at least 95% certain that the difference found in the sample is representative of a similar difference in the population and not due to chance fluctuations in the data.)

Combining this issue (non-representative-ness of responses) with the issue of bias, perhaps corrected by applying heavier weights to certain subgroups, can have the effect of exaggerating a non-representative sample in a way that could be difficult to detect.

When interpreting these findings, it is important to keep these limitations in mind and look for patterns in the findings, remembering both that some voices are likely to be missing from this report and those that are present might not accurately represent others in their subgroup. On the other hand, this is a large sample and the findings are consistent, fit a pattern and seem to make sense.

Findings

Technology check list
Survey respondents report a high level of technology access at home.

1. Home technology checklist
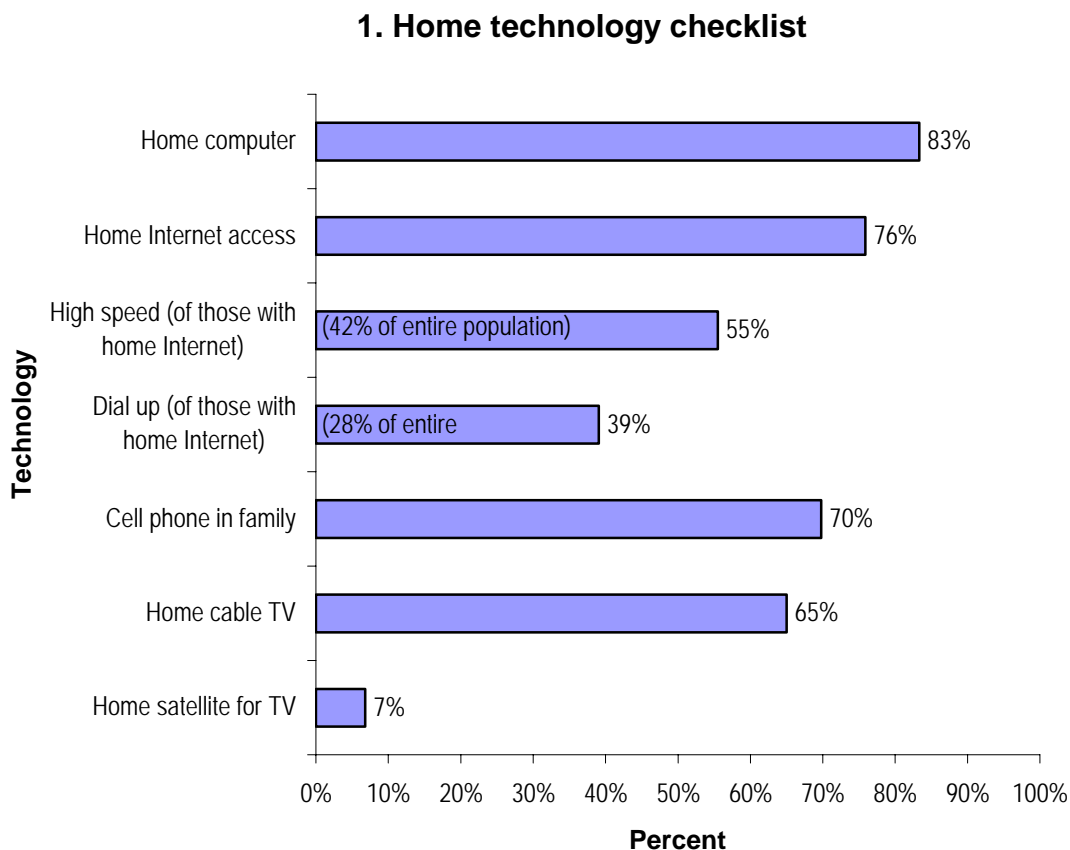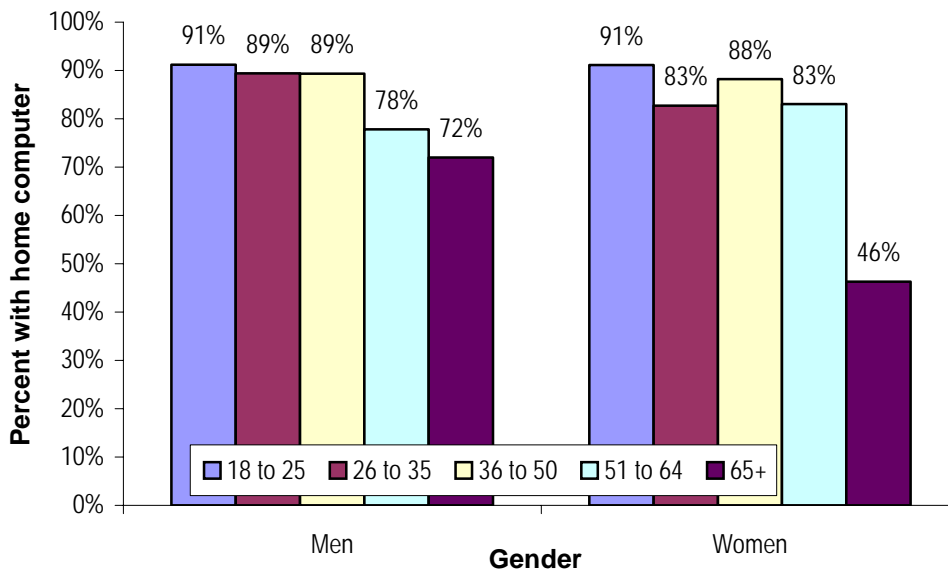

Source: 2004 Seattle IT Residential Survey

Figure 1 shows that of all the home technology items queried in the survey, respondents were most likely to report having a home computer (83%), followed by home Internet access (76%). Overall, 83% of respondents use the Internet somewhere. Nearly all (91%) of those with home computers also have home Internet access. Eighty-five percent of the respondents said they currently use computers or the Internet, and nearly all of these (92%) say they have a home computer. In addition to the current computer users, another eight percent said they have used either a computer or the Internet in the past. Nearly all current computer users (97%) use email, as do another 42% of former users – 86% of Seattleites overall. Even 31% of the respondents who said they haven't used a computer want to access City services online or believe that email is an effective way to communicate with elected officials or about issues.

Home computer access
Further analysis, simultaneously considering the influence of income, age, education, gender and ethnicity on home computer ownership shows that not all demographic groups are equally likely to have this technology at home. Specifically, older respondents are less likely to have a computer at home, especially older women (Figure 2), as well as those with less education –

especially with less education and lower income (Figure 3). Although African American respondents were significantly less likely to have home computers (63%, compared with 84% or more of the Caucasian, Asians/ Pacific Islander and Hispanic respondents), these differences disappear when the other factors such as income and education are taken into consideration, suggesting that the effects of ethnicity can be explained by the correlated effects of the more influential other demographic factors.

2. The influence of age on home computer access for men and women

Source: 2004 Seattle IT Residential Survey

Figure 2 shows that home computer access declines with age similarly for men and women, except for those 65 years or older. At this age, the gender divide is clear, with senior men being more than half again as likely as senior women to have a home computer.

**3. The influence of income on home computer access at two education levels**
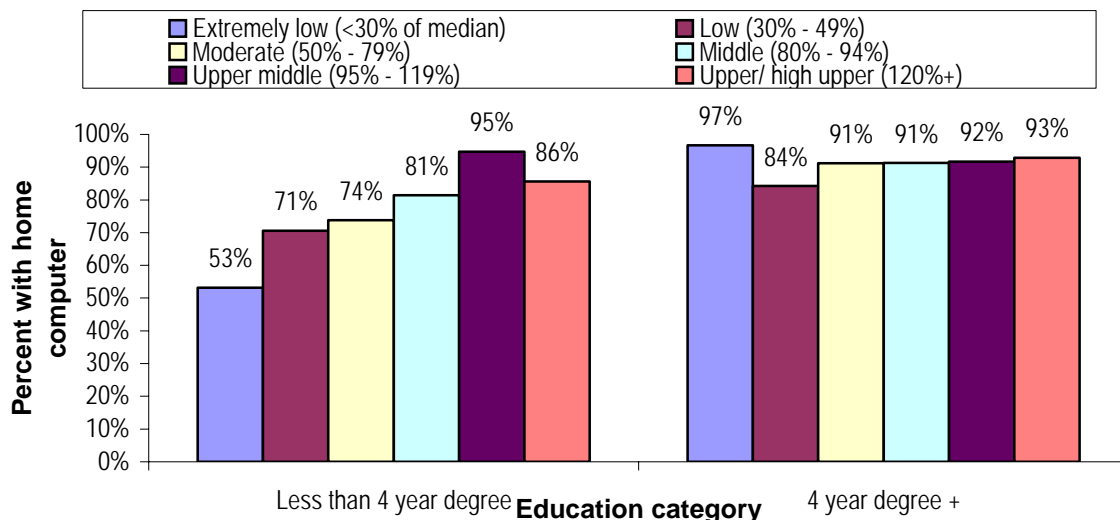
Source: 2004 Seattle IT Residential Survey

Figure 3 shows that home computer access increases with education, and that among those with a four-year college degree or more, income level has little influence on home computer ownership. However, among respondents with less education, a significant relationship emerges between household income and likelihood of home computer ownership so that those respondents with the least education and the least income are also the least likely to have home computer access. Overall, those with more education are about 25% more likely to have home computer access. In the lowest income group, those with more education are nearly twice as likely to have a home computer. This might be partially explained by the disproportionately high representation of students, and perhaps recent graduates, in this group. Overall, 4% of the sample are students, compared with 11% of those in the lowest income group. Students and working students are the most likely of those in this income group to report having home computer access (82% and 100%, respectively).

Home Internet access

A similar analysis was conducted for home Internet access and results were similar, but more striking, and some additional differences emerged.

4. The influence of age on home Internet access for men and women
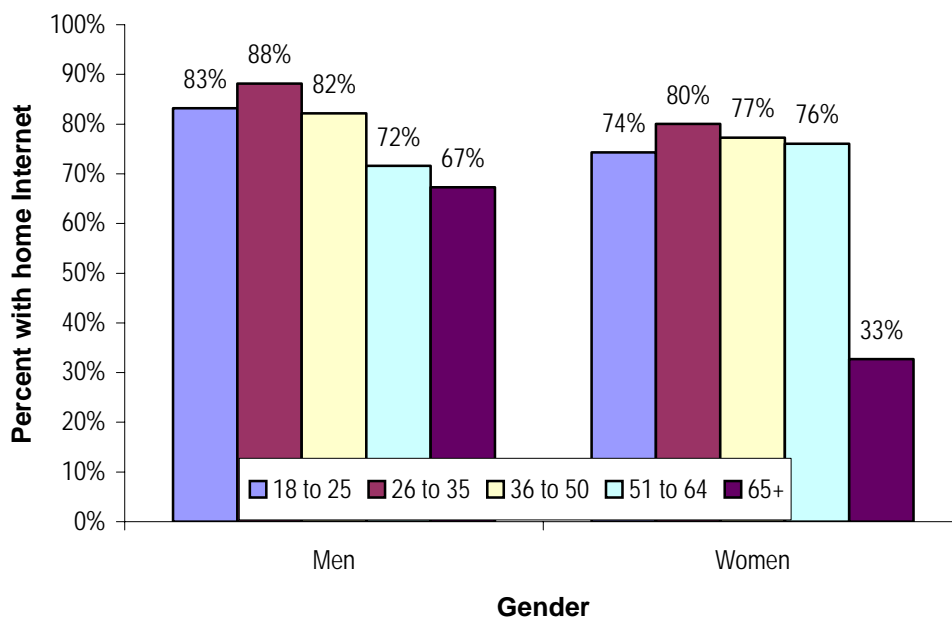
Source: 2004 Seattle IT Residential Survey

Figure 4 shows a similar result to Figure 2 – the differences between men and women in home Internet access is slight except among the older respondents where women are half as likely to have Internet access at home. Additional analysis was conducted to explore the effect of these demographic factors on the subgroup of those with home computers. This analysis shows that overall, women *with home computers* are significantly less likely to have home Internet access than men *with home computers* (88% vs. 94%). This effect is consistent across the age groups, but more extreme among the older respondents (71% vs. 94%).

**5. The influence of income on home Internet access
at two education levels**

☐ Extremely low (<30% of median)	■ Low (30% - 49%)	☐ Moderate (50% - 79%)
☐ Middle (80% - 94%)	■ Upper middle (95% - 119%)	■ Upper/ high upper (120%+)
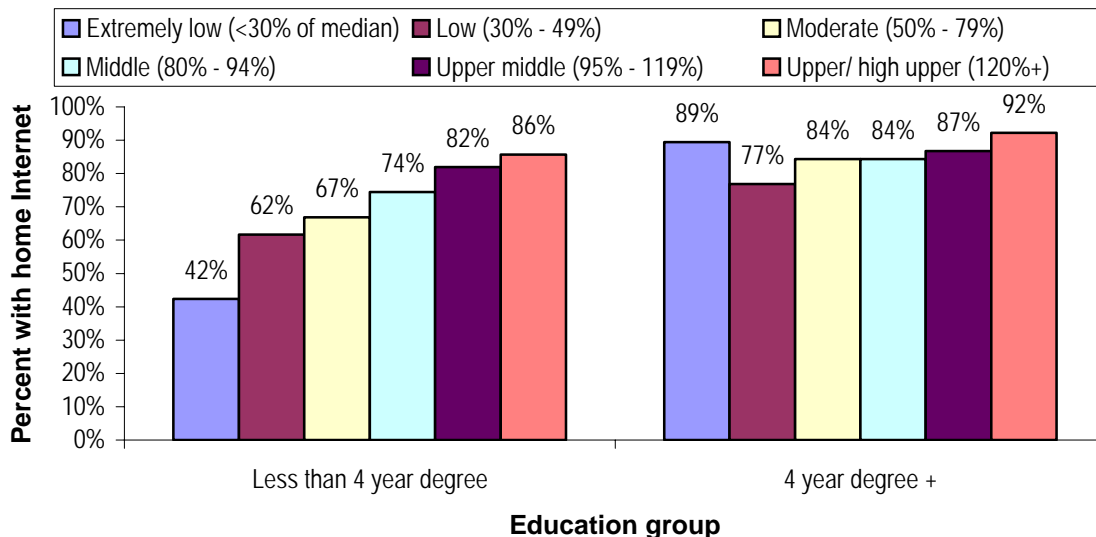
Source: 2004 Seattle IT Residential Survey

Figure 5 shows results very similar to those illustrated in Figure 3: overall, home Internet access increases with income and it increases wit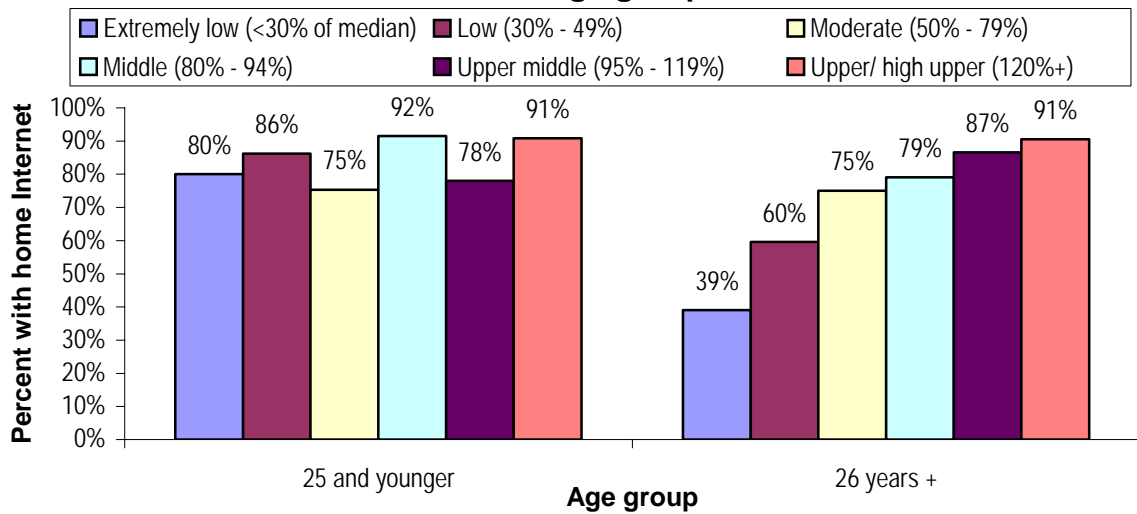h education. Looking more closely however, among the respondents with more education, income is *not* an influential factor in home Internet access, while among those with less education, as income increases, so does home Internet access. For those with less than a four-year college education, respondents in the highest income group are about twice as likely to have home Internet access as those in the lowest income group.

Figure 6 shows that home Internet access is not sensitive to income among the youngest respondents (those 25 and younger), but among the older respondents, home Internet access increases with income so that among the respondents who are older than 25, people in the highest income categories are more than twice as likely as the people in the lowest income category to have home Internet access. It may be that young people perceive Internet access as more of a necessity than do older respondents. Again, more than three-fourths of the students in the sample are in the youngest age group, which may contribute to this age effect.
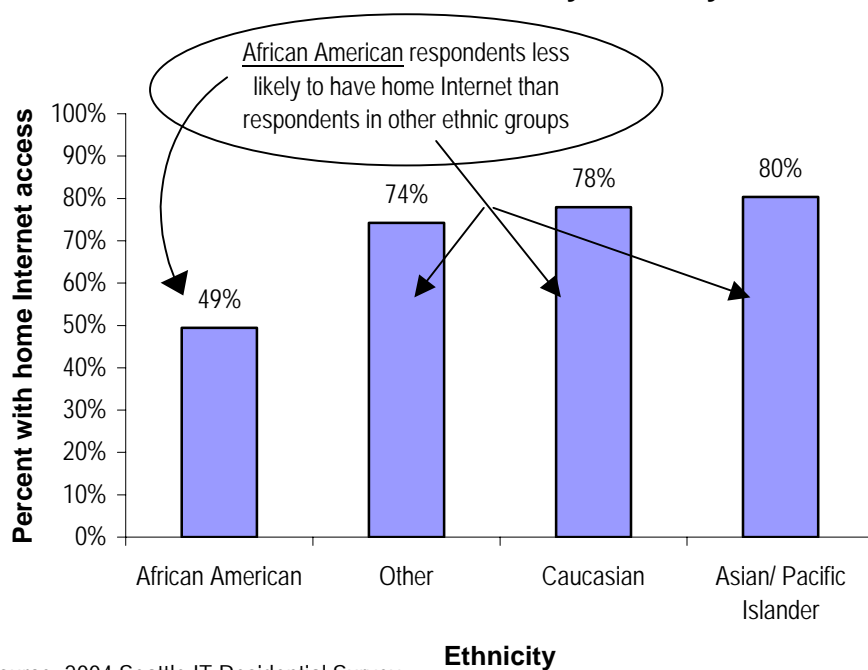
6. The influence of income on Home Internet access for two age groups

Legend:
- ■ Extremely low (<30% of median)
- ■ Low (30% - 49%)
- □ Moderate (50% - 79%)
- □ Middle (80% - 94%)
- ■ Upper middle (95% - 119%)
- ■ Upper/ high upper (120%+)

Percent with home Internet

25 and younger: 80%, 86%, 75%, 92%, 78%, 91%
26 years +: 39%, 60%, 75%, 79%, 87%, 91%

Age group

Source: 2004 Seattle IT Residential Survey

Finally, unlike with home computer access, ethnicity[4] was an important predictor of home Internet access after the influence of the other factors was considered. Ethnicity stood alone, not interacting with any of the other demographic factors. These results are illustrated in Figure 7.

7. Home Internet access by ethnicity

African American respondents less likely to have home Internet than respondents in other ethnic groups

Percent with home Internet access

African American: 49%
Other: 74%
Caucasian: 78%
Asian/ Pacific Islander: 80%

Ethnicity

Source: 2004 Seattle IT Residential Survey

This figure shows that African American respondents are the least likely to have home Internet access, and are significantly less likely than Caucasian or Asian/ Pacific Islander respondents, or respondents of "other" ethnicities (including Hispanic, Native American and multiethnic respondents). It is important to note that the "other" category is made up of groups with tremendous diversity in home Internet access.

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[4] Ethnicity is self-reported. Respondents were given the opportunity to indicate multiple ethnic identities. If multiple ethnicities were identified, respondents were asked to indicate their primary ethnicity. Those who did not identify a primary ethnicity are reported as "other."

Specifically, 88% of the Hispanic households report home Internet access, compared with 49% of the Native American households and 52% of the multiethnic and other households. The rate of home Internet access found in Hispanic households in this survey is far higher than that reported in national surveys. Different possible explanations have been proposed:

♦ The figure may be accurate, a result of a combination of Seattle's generally high level of home Internet access and the possible interest of recent immigrants in using the Internet to communicate with those left behind, and to find Spanish-language news sources.

♦ Another possibility is that the sample of Hispanic households is somehow not representative of the Hispanic households in Seattle. Further investigation of this sample shows a higher education level among the Hispanic respondents in this sample than among Seattle's Hispanic residents in general. According to the 2000 U.S. Census, 48% of Seattle's Hispanic residents have no more than a high school education, compared with 16% in our sample. Since higher education is consistently associated with increased computer and Internet access, this bias in the sample could also account for the surprisingly high percentage of Hispanic households with home Internet access.

8. High speed Internet access increases with income and dial up Internet access decreases
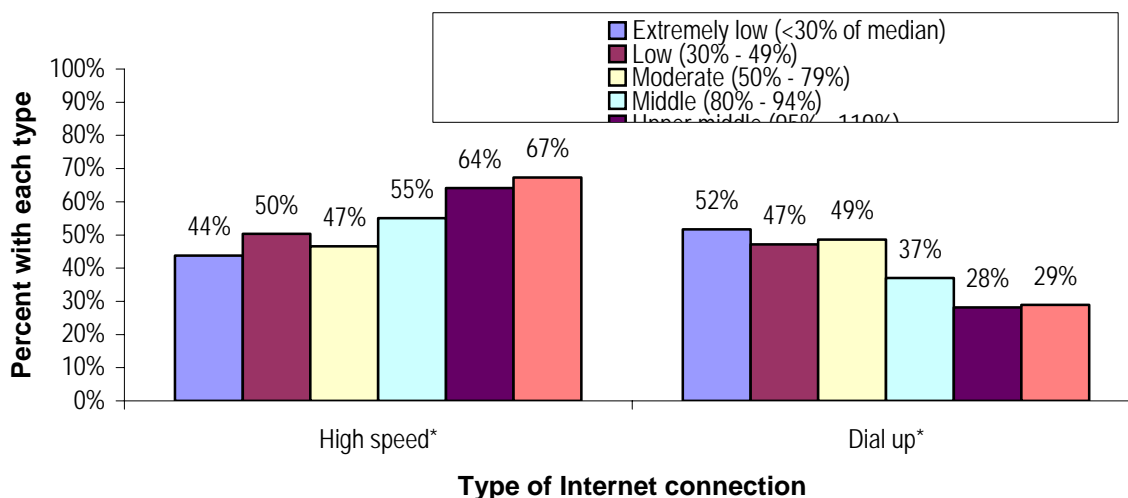
Source: 2004 Seattle IT Residential Survey

Access for residents with disabilities

About 10% of the respondents reported having a disability, nearly all of whom said that their disability keeps them from participating fully in work, school, housework or other activities. Relatively few (17%) said that this disability impairs their use of the Internet. These individuals with disabilities are significantly older than those who do not report having a disability and they report significantly lower incomes and less education. Controlling for all these factors, having a disability emerges as a significant factor in use of computers or the Internet (60% of the disabled respondents vs. 88% of the others), or having access to a computer at home (58% vs. 86%).

Speed of home Internet access

One important consideration in home Internet access is speed of access. Figure 1 shows that overall, 55% of the respondents with home Internet access (42% of total respondents) said they have either DSL or cable. When all demographic factors are considered simultaneously, no interpretable findings emerged. Taken individually, both income and age are related to having high speed Internet access at home. Figure 8 shows that high speed Internet access increases with income from 44% of those in the lowest income category to 67% of those in the highest income category, about a 50% increase. The same figure shows a significant decline in dial up access with increasing income, from a high of 52% among the lowest income homes down to 29% in the highest income homes, a 44% decrease.

Figure 9 shows the opposite pattern with high speed Internet access – as age increases, the percentage of households with high speed access decreases. Two-thirds of the youngest group of respondents with Internet access report having high speed access, down to 30%, about half as many of the oldest group of respondents. The slight increase in dial up access with age did not reach statistical significance.

9. High speed Internet access decreases with age; the increase in dial up access with age is not significant
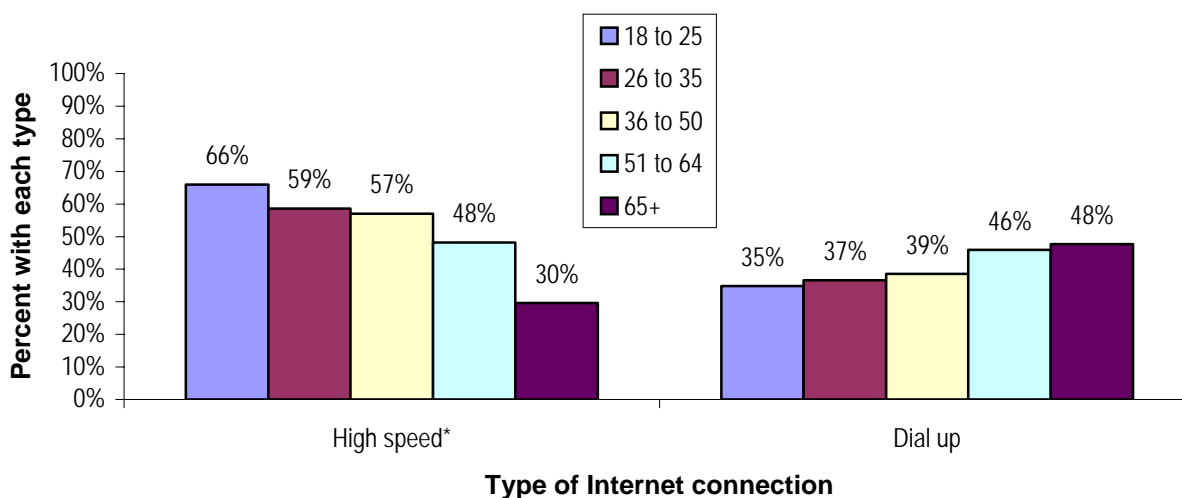
Source: 2004 Seattle IT Residential Survey   * Cable or DSL

Cell phone in the family

Figure 1 shows that 70% of the respondents overall said some member of their family has a cell phone. Figure 10 shows that having a cell phone in the family is related to household income. About one-third of the respondents in the lowest income category reporting having a cell phone in the family, doubling in the next income group, and continuing to climb up to 85% of the respondents in the highest income category. This was the only demographic factor that was statistically significant when all the demographic factors were considered simultaneously. About a quarter of the respondents have children under 18 at home. These respondents were about 20% more likely than families without children to say they have a cell phone in the family (67% vs. 81%).

10. Cell phone in family increases with income
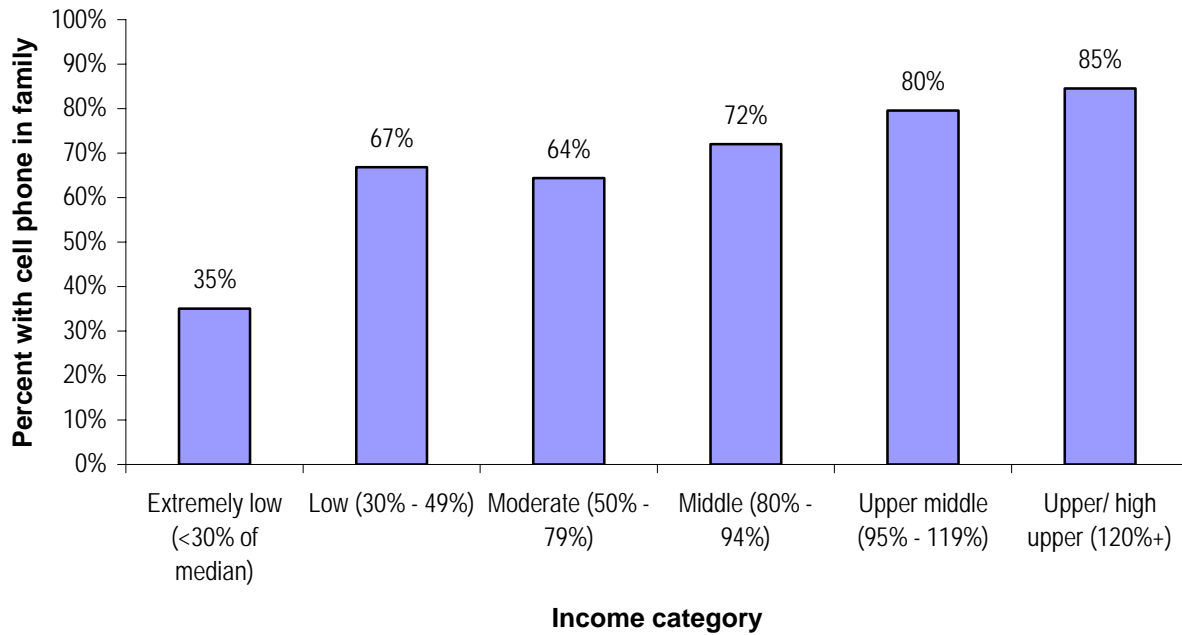
Source: 2004 Seattle IT Residential Survey

Figures 11 and 12 summarize the relationship between cell phones and age (Figure 11) and cell phone and education (Figure 12). These factors were significantly related to cell phone

11. Cell phone in family decreases with age
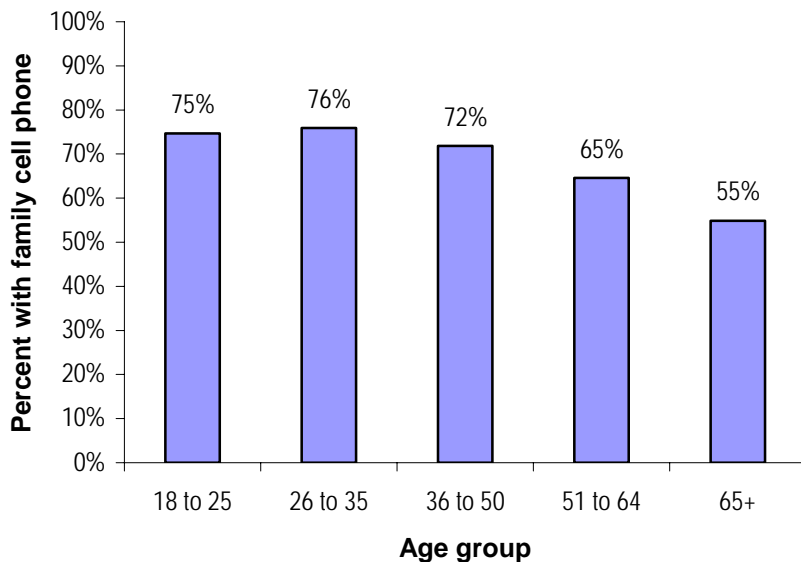
Source: 2004 Seattle IT Residential Survey

ownership when considered without the influence of the other factors. This different analysis outcome suggests that these factors, education, age and income, may be interrelated, leaving a sufficient amount of unique explanatory power only for income. This means that the influences of age and education illustrated in these figures may actually be due to their impact on income. However, because of the complex interrelationship of these factors, it may be useful to examine the some of the individual relationships.

12. Cell phone in family increases with education
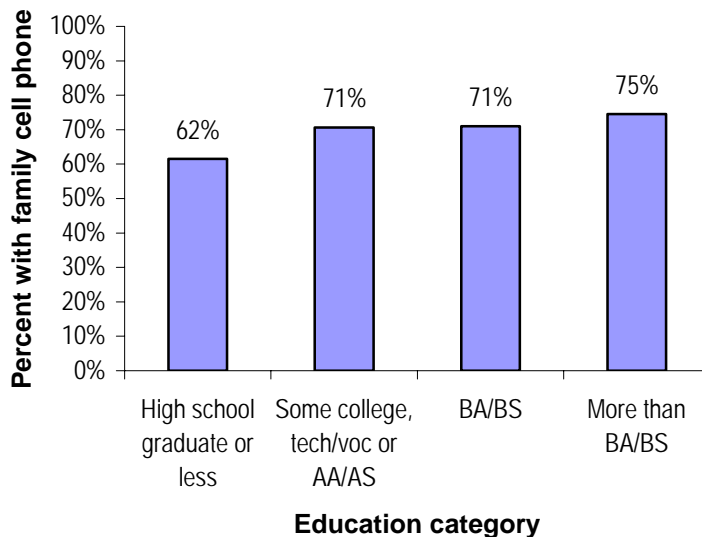
Source: 2004 Seattle IT Residential Survey

Figure 11 shows that cell phone ownership decreases with age from about three-fourths of those younger than 36 down to just over half of those in the oldest age group.

Figure 12 shows the increase in cell phone ownership with an increase in education. Sixty-two percent of those with the least education report having a cell phone in the family, up to 75% of those with the highest level of education.

Cable service

Figure 1 shows that overall, 65% of the respondents said they have cable service for their television at home an seven percent said they have satellite. No differences in likelihood of having cable TV were found except for age – younger respondents are less likely to have cable TV (50%) than older respondents (79%). People with satellite service for their television are less likely to be in the lowest income category (0.7% have satellite). Four percent of the next income group reported having satellite service, up to 8% in the highest income group.

Home technology compared with 2000

A similar sample of Seattle residents was asked some of the same questions in 2000. One of the purposes of the current survey is to update those numbers. In this section, the results of the surveys from 2000 will be compared with those for this year to explore changes in indicators over the past several years.

13. Home technology checklist in 2000 and 2004
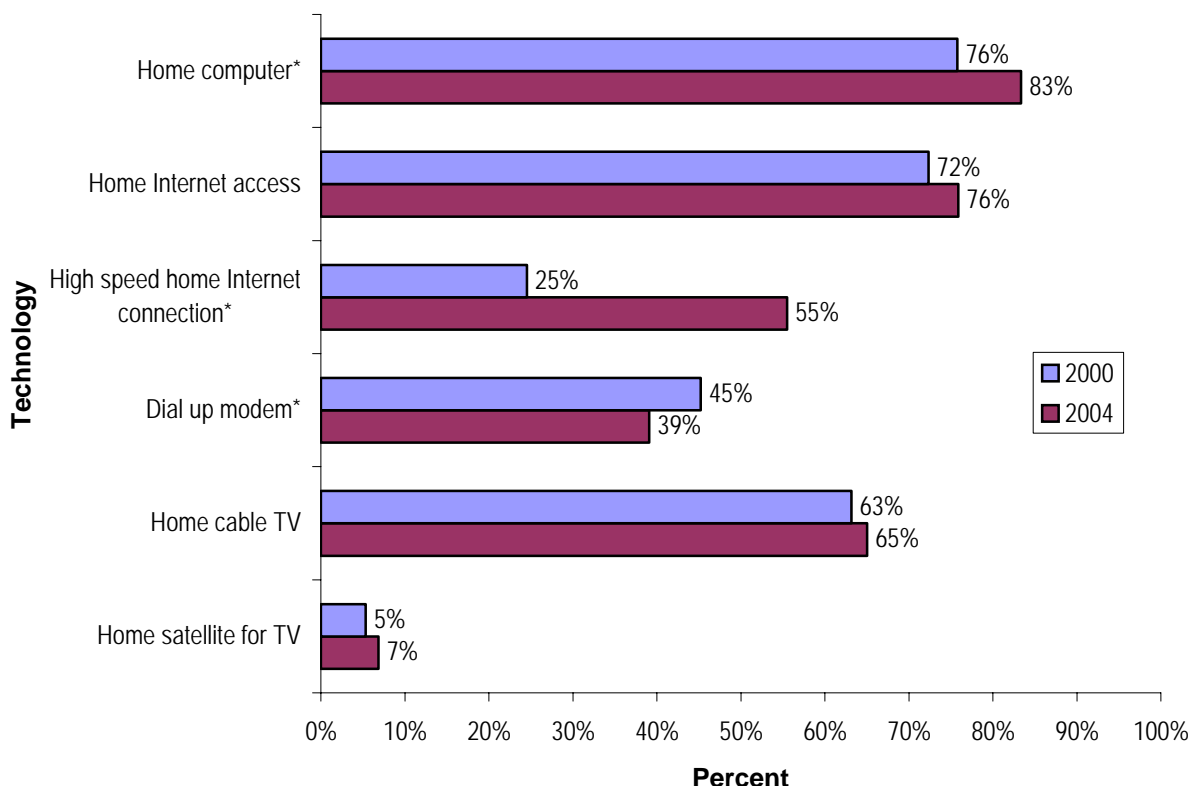
Source: 2004 Seattle IT Residential Survey

Figure 13 shows a slight increase in percentage of households with most types of technology since 2000. Even though the overall percentage of computer users did not change significantly between 2000 and 2004 (88% and 85%, respectively), the percentage of respondents with *home* computer access increased about 10% during this period from 76% to 83%. Further, the percentage of homes with high-speed Internet access (among homes with any Internet access) more than doubled from 25% in 2000 to 55% in 2004, while the percentage of homes with dial up access *decreased* significantly from 45% to 39%. So even though no more people are using computers now than in 2000, more are using them at home and more have faster access to the Internet at home.

Further analysis of these items show that neither the *lack* of change in computer or Internet use, nor the change in home ownership of computers was consistent across income levels. Figures 14 and 15 illustrate these results.

14. Lower income respondents more likely to be computer or Internet users in 2004 than in 2000
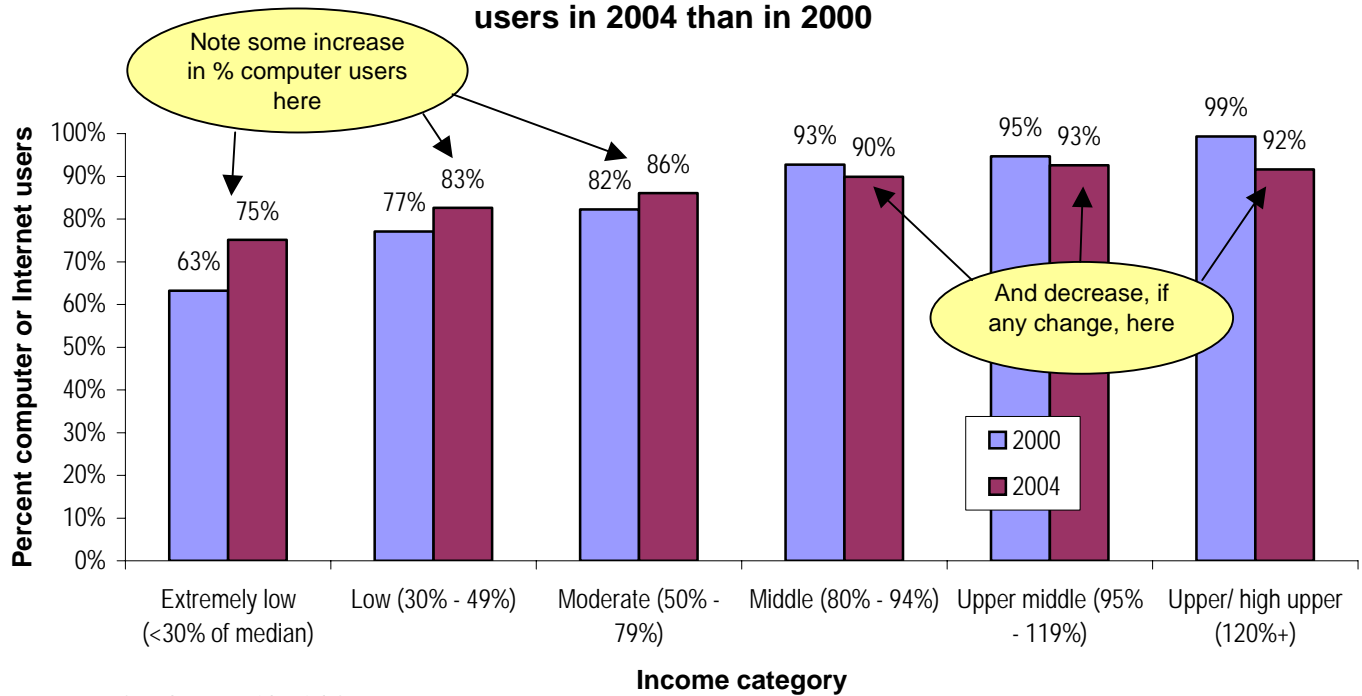
Source: 2004 Seattle IT Residential Survey

Figure 14 shows an increase in computer or Internet use among the lower income respondents, and no change – or perhaps a slight decrease – among the higher income respondents. Figure 15 a much greater increase in home computer access, most dramatically among the lowest income households.

**15. Lower income households more likely to have home computers in 2004 than in 2000**
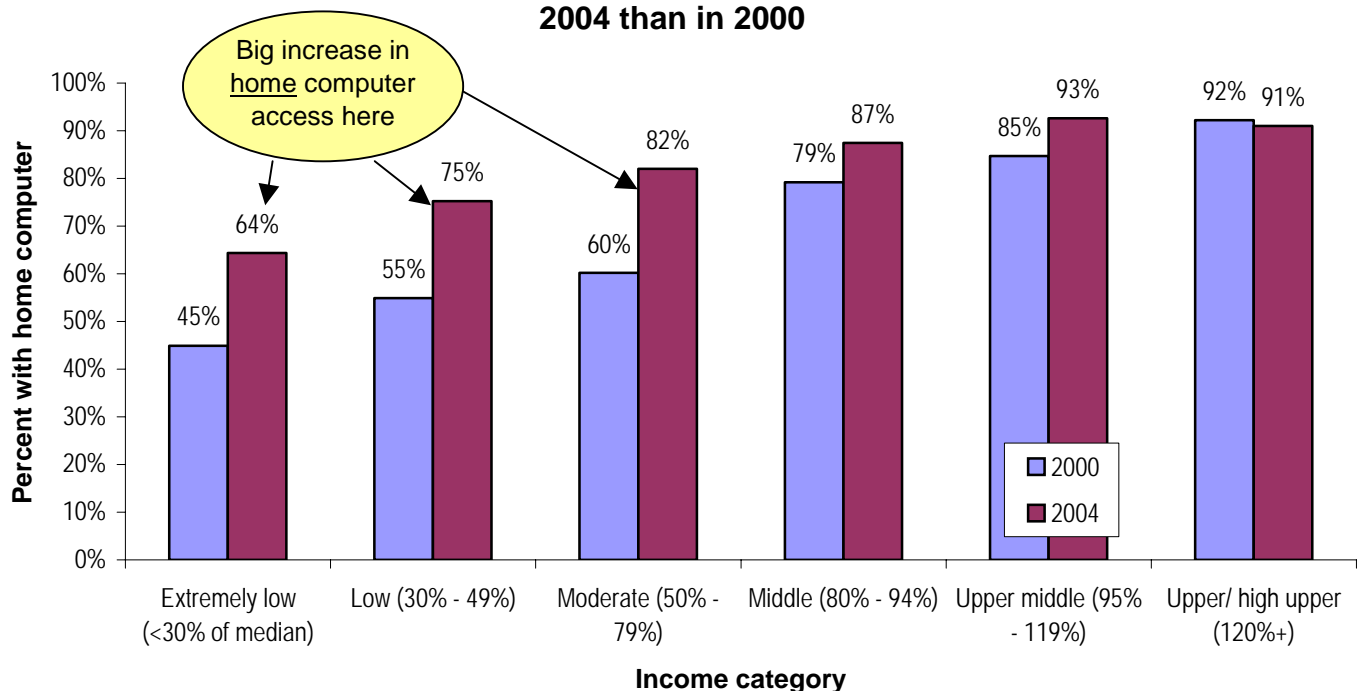
Source: 2004 Seattle IT Residential Survey

For example, Figure 14 shows nearly a 20% increase in the percentage of people in the lowest income category using computers between 2000 and 2004, while Figure 15 shows a *42% increase* in the percentage of people in the same income category with *home* computer access. Put another way, in 2000, 69% of the lowest income computer users were using computers at home and in 2004, this jumped to 84%. At the higher end of the income scale, more than 90% of the households reported having a home computer in both years.

The next six figures should be considered as three pairs of figures. The first figure in each pair shows that by 2004, the type of Internet access (cable, DSL or dialup) in households with home Internet access seems to be less related to demographic factors typically associated with the "digital divide." They give the impression that demographic equalization of access has occurred. However, the second figure in each pair shows that these conclusions might be misleading because they don't consider the demographic disproportionality of having any home Internet access at all. Together, these figures show that if households without any access are excluded from the analysis, it seems that demographic factors are unrelated or less related to the type of access in the households. When they are included, it is clear that disproportionality, although diminishing, still remains.

16. Among those with home Internet access, differences in type of access between ethnic groups are not significant in either year; diminished in 2004
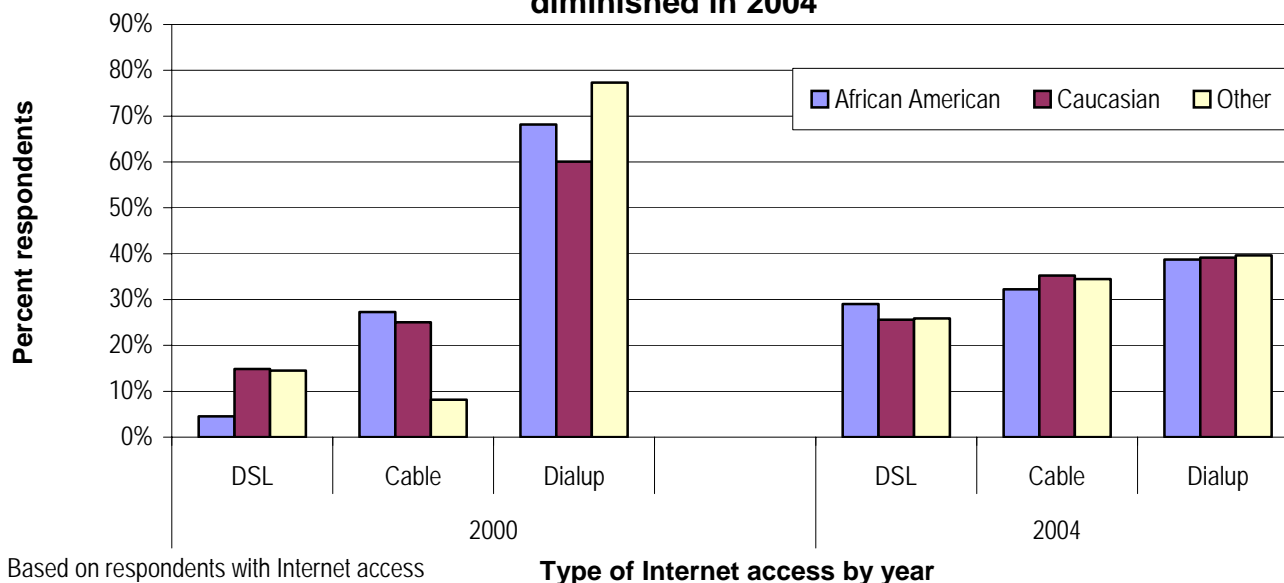
Based on respondents with Internet access
Source: 2004 Seattle IT Residential Survey

Type of Internet access by year

Figure 16 shows that by 2004, ethnicity is unrelated to type of Internet access *in those households with Internet access.* One might conclude from this figure that Seattle no longer has ethnic disproportionality in type of Internet access. Figure 17 shows that this is not the case. This figure shows a dramatic difference when those without home access are included. In both 2000 and 2004, African American households are significantly less likely to have any home Internet access (see Figure 7 above) and because of this overarching fact, the representation of African American households in any of the categories of type of Internet access is depressed. Thus, among households with Internet access in 2004, no ethnic differences were observed in

type of access. However, an important disproportionality emerges when considering households without access as well.

17. African Americans more likely to have no home Internet access in 2000 and 2004; differences smaller in 2004 but still significant
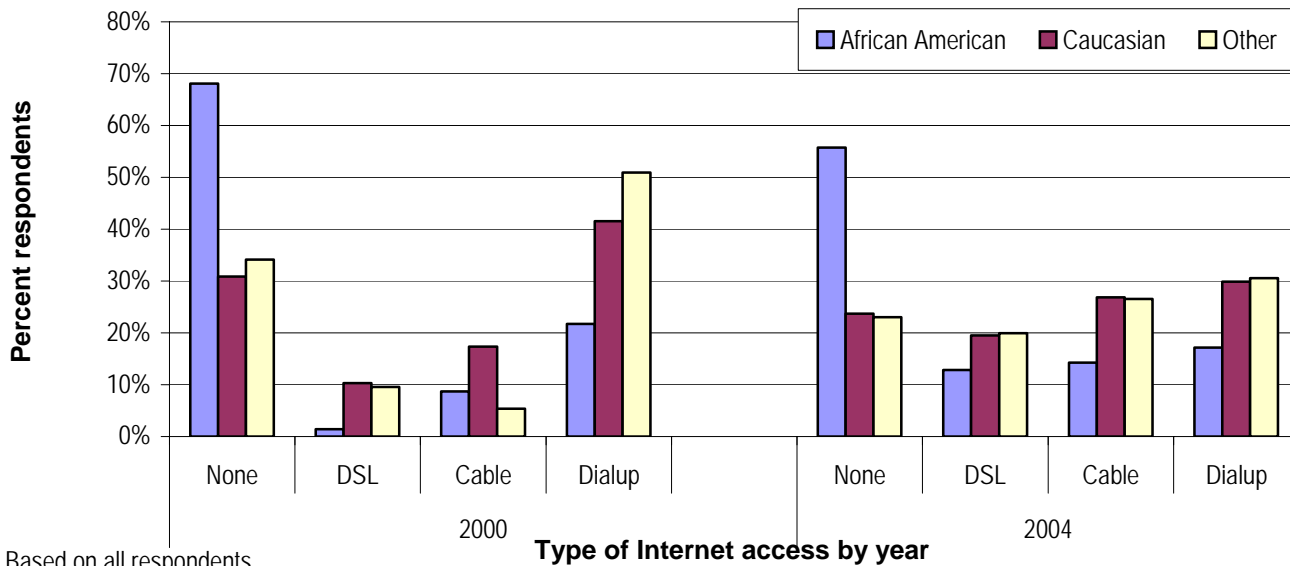
Based on all respondents

Source: 2004 Seattle IT Residential Survey

Figure 18 illustrates the relationship between household income and type of access in 2000 and in 2004 in household with Internet access. More households at all income levels have high-speed access in 2004 than in 2000. The relationship between type of access and income remains in 2004, but is less extreme.

18. Among those with home Internet access, low income households are more likely to have slower Internet access in both 2000 and 2004, even as more households at all levels move to high speed access
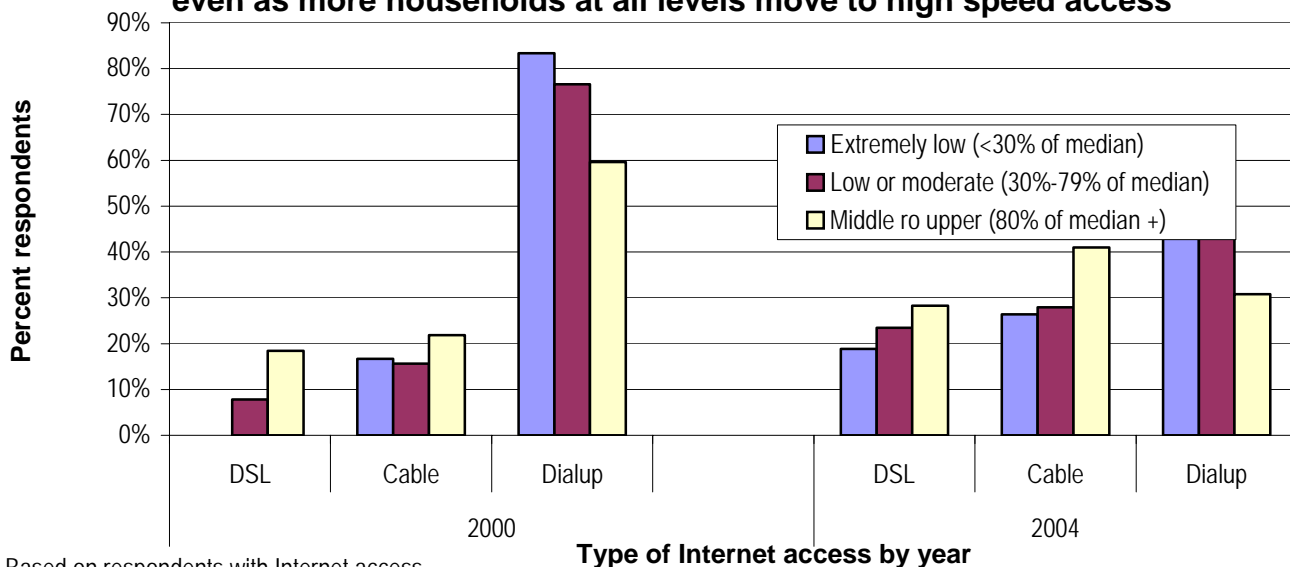
Based on respondents with Internet access

Source: 2004 Seattle IT Residential Survey

19. Households with less income are more likely to have no or slower home Internet access in 2000 and 2004; differences smaller but remain significant in 2004
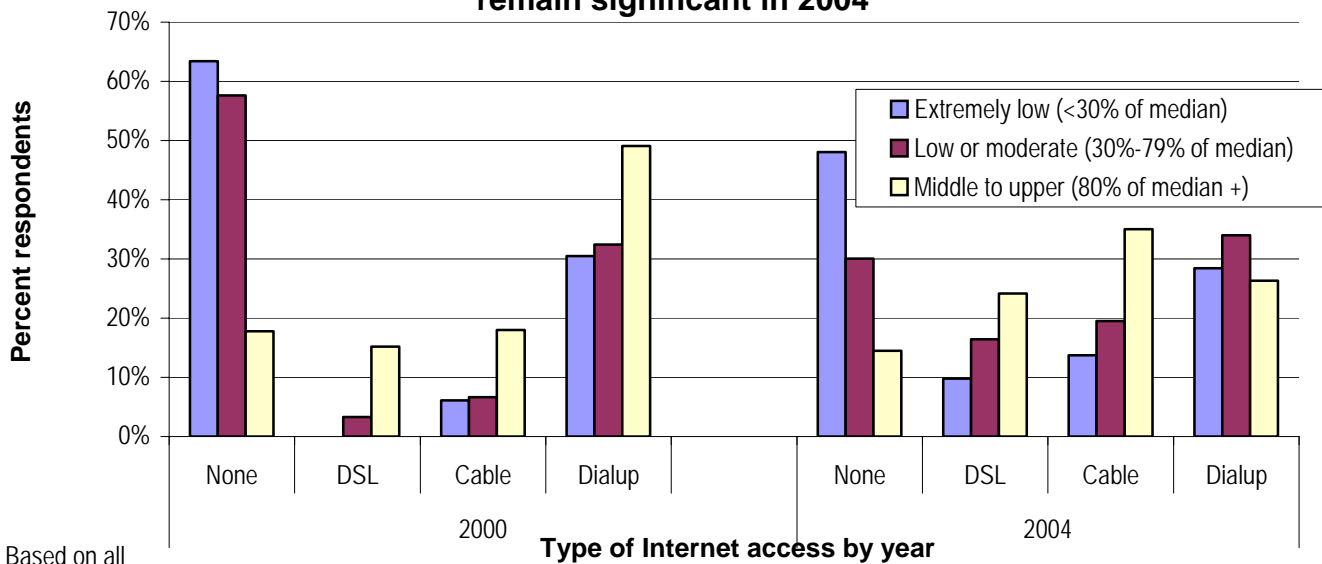
Based on all

Source: 2004 Seattle IT Residential Survey

As with ethnicity above, Figure 19 shows that when those without any Internet access are considered, it becomes clear that households with less income are considerably less well represented in all the access categories, and especially in the high-speed access categories. Figures 20 and 21 shows a similar pattern for the impact of education on type of Internet access. When those without home Internet access are excluded, education appears to be unrelated to type of home Internet access (Figure 20). But when those without home Internet access are included, the representation of those with less education in the high-speed access categories remains depressed (Figure 21), if less so than in 2000.

These figures show that demographic disproportionality in Internet access and type of access remains evident in 2004, and seems less extreme than in 2000.

20. Among those with home Internet access, differences between households with different levels of education are not significant in 2000 or 2004
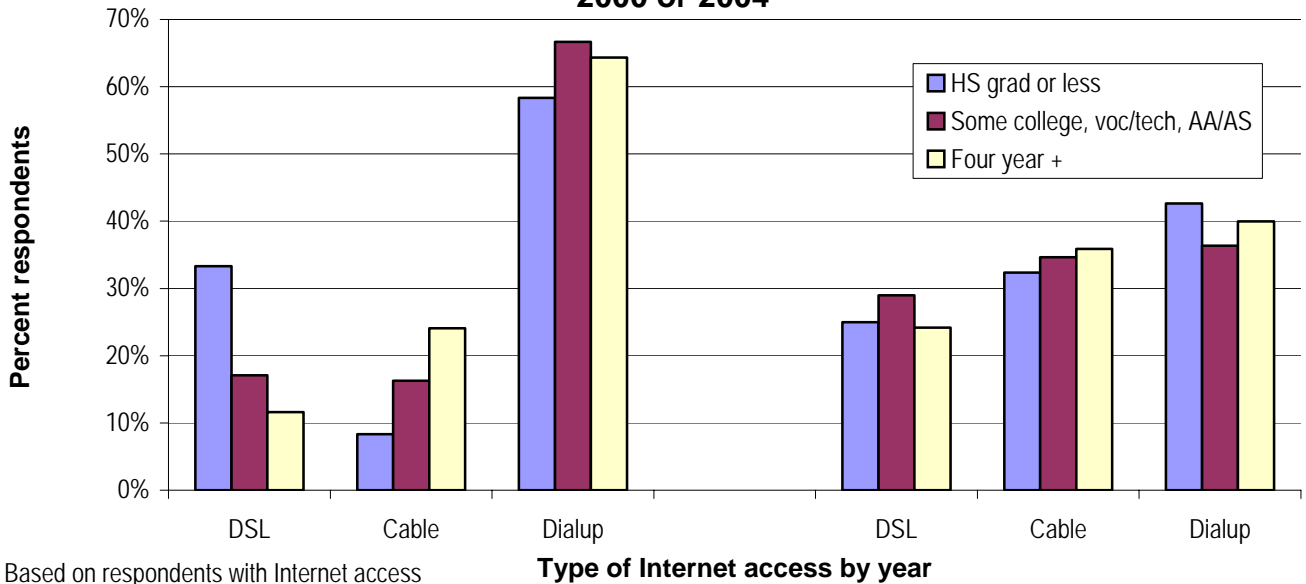
Based on respondents with Internet access
Source: 2004 Seattle IT Residential Survey

21. Households with less education are less likely to have any home Internet access in 2000 and 2004; differences smaller but remain significant in 2004
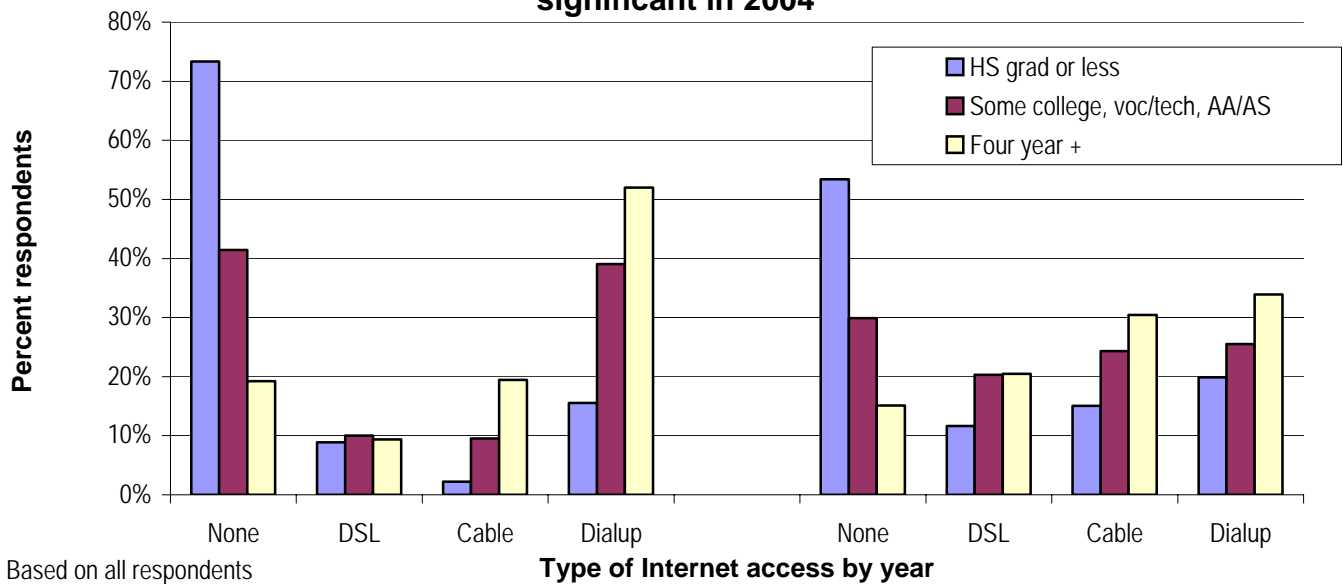
Based on all respondents
Source: 2004 Seattle IT Residential Survey

Respondents without home computer or Internet access

The 241 respondents who said they don't have a home computer or have a home computer but no Internet were asked why not and allowed to volunteer as many reasons as they wished. Figure 22 summarizes the responses.

22. Reasons for not having a home computer or Internet access


Reason for no home computer or Internet (y-axis)

Reason	Percent
Cost/ too expensive	39%
Don't want one/don't need it/don't like it	21%
Don't know why/ no reason	13%
Don't have time to use one at home	11%
Don't know how to use it	7%
Sufficient access elsewhere	5%
Problem with Internet access	4%
Inappropriate content	3%
Privacy/security/personal information	3%
Don't have computer or Internet device	3%
Broken equipment	2%
Personal issue (e.g., age, stress, religion)	2%
Other reason	2%
Don't know about the Internet	2%
Don't know how to choose one	2%
Don't know how to set it up	2%
Service problem	1%
Don't have time to learn	1%
Refused	1%
Child safety (dangerous strangers)	1%
Inappropriate content for children	1%
Safety/security concerns	1%
Don't want kids to use it	0%
Computer safety -- viruses, worms	0%

Percent endorsing

Source: 2004 Seattle IT Residential Survey

The most frequently offered reason was the cost (39%). This reason was given as often by people without either a computer or Internet access as by people with a computer but no Internet access.

A similar question was asked in 2000. Direct comparisons are difficult to make because of differences in coding strategies. Summarizing broadly:

- The cost of home access has become a barrier for more residents (2000: 27%; 2004: 39%)
- About half as many people now say they have sufficient access elsewhere (2000: 10%; 2004; 5%)
- About half as many people now say they don't have access because they don't want or need it (2000: 40%; 2004: 21%)

PART 2

Cable service

Many new questions were included in the survey this year to help with the City's cable franchise renewal ascertainment process. In addition to learning that about 65% of the Seattle's households are cable subscribers, the survey asked subscribers to give their opinions about details of the service they had been receiving and services they might want to receive in the future, and it asked non-subscribers to give their opinions as well.

Specific services received

Most of the cable subscribers said that they receive their cable service from Comcast (81%), with eight percent mentioning Millennium while 11% either did not know who their cable provider is (7%)or indicated some other providers (3%) or refused to answer (1%). Most of the respondents with cable television subscribe to standard service. Fourteen percent subscribe to limited basic[1], 2% subscribed to expanded and 18% subscribe to digital. Another seven percent did not indicate their basic type of service, but 40 of these 45 respondents said that they get premium channels. Four percent do not know what type of cable service they have or they refused to say. Figure 23 displays these responses for Comcast and Millennium, in addition to the percentage who subscribe to premium, pay per view or Internet services.

**23. Services subscribed to by cable customers
for Comcast and Millennium**
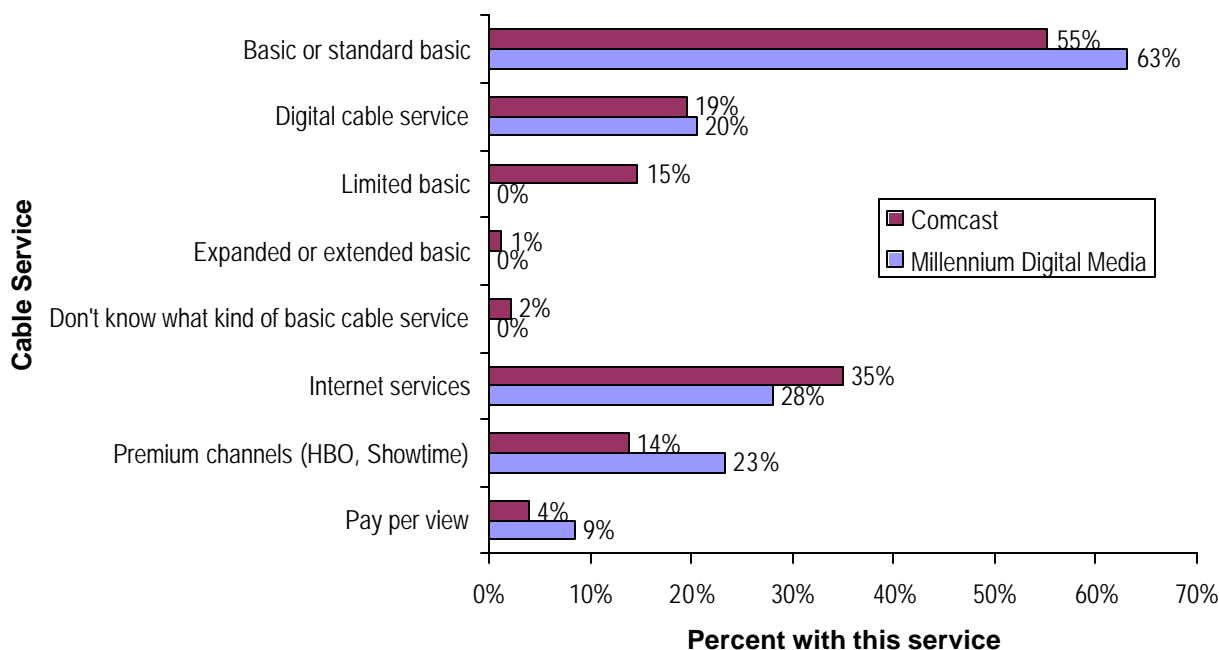
Source: 2004 Seattle IT Residential Survey

This figure also shows that about one-third of the Comcast cable customers also subscribe to cable Internet services, 14% of these customers get the premium channels and 4% subscribe to pay per view. Because of the small number of Millennium respondents, subsequent analyses will be confined to Comcast customers unless otherwise indicated. Because of the small number of respondents subscribing to many of these services, little in-depth analysis was possible. The only

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[1] Only Comcast offers a limited basic option. This option is not available through Millennium.

subgroup difference observed is that men are more likely than women to say they subscribe to basic cable services (59% vs. 52%).

Opinions about cable services

Cable subscribers were asked to rate their satisfaction with the types and variety of programs available on cable, as well as with the customer service at the cable company. Although no significant differences emerged in the satisfaction ratings between the cable providers, Figures 24 through 27 summarize the ratings separately.

24. Satisfaction with types and variety of programs on cable
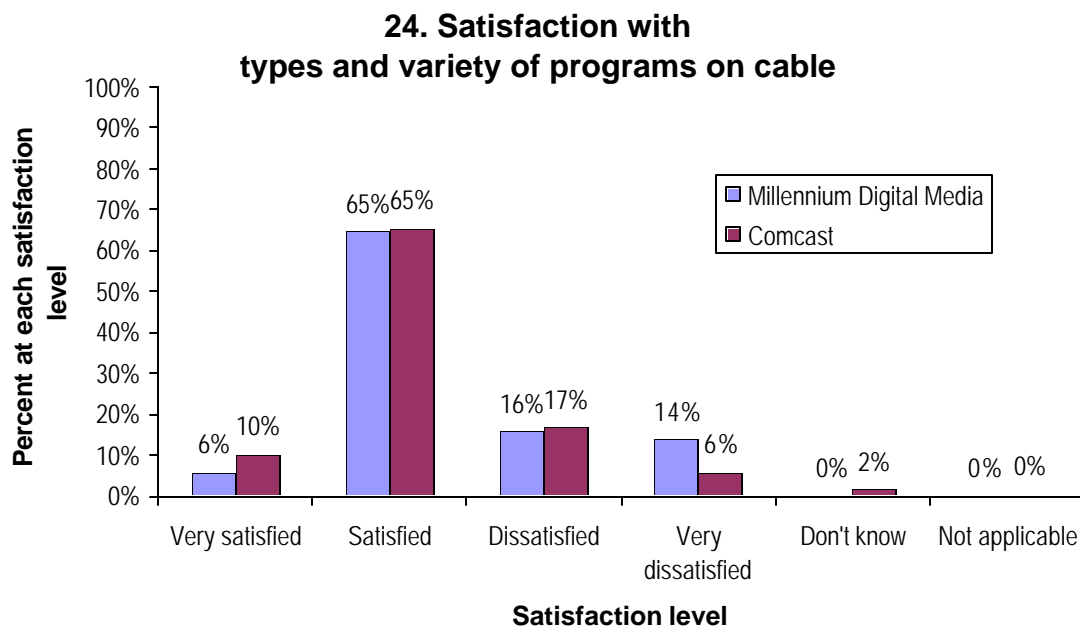
Source: 2004 Seattle IT Residential Survey

This figure shows that most subscribers are satisfied with both cable programming, although few noted that they are "very satisfied" and overall, nearly one fourth (23%) said they are dissatisfied or very dissatisfied.

Figure 25 shows the level of satisfaction of Millennium and Comcast subscribers with coverage of community news on cable. Again, most respondents reported being either satisfied or very satisfied and 11% overall reported being either dissatisfied or very dissatisfied.

25. Cable customer satisfaction with coverage of community news on cable
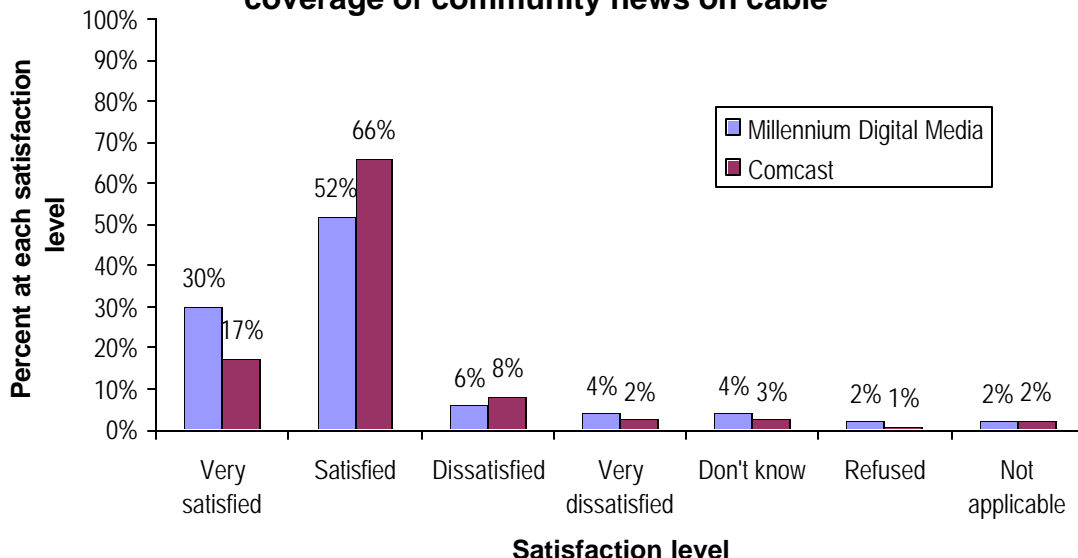
Source: 2004 Seattle IT Residential Survey

Non cable subscribers were also asked to rate their satisfaction with the coverage of community news and events on television. Table 5 shows that these respondents rated their satisfaction significantly lower, with 59% saying they are satisfied or very satisfied, compared with half again as many of the cable subscribers (89%).

Table 5. Satisfaction with coverage of community news

	Non subscriber	Subscriber
Very satisfied	12%	20%
Satisfied	47%	69%
Dissatisfied	26%	8%
Very dissatisfied	15%	3%

Figure 26 illustrates subscriber satisfaction with customer service for the two cable companies. Overall, most customers are satisfied or very satisfied with the customer service they receive (73%), with 19% reporting that they are dissatisfied or very dissatisfied.

26. Satisfaction with
customer service for cable television
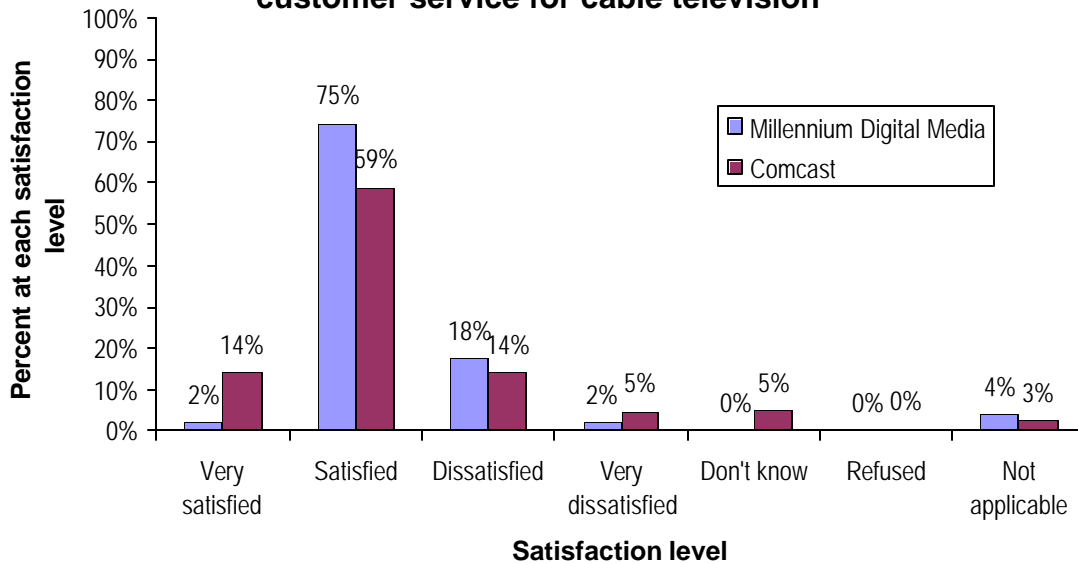
Source: 2004 Seattle IT Residential Survey

About 65% of the subscribers who experienced a problem with their cable signal or some other aspect of the service said they reported the problem to the cable company. Among the Comcast customers, these individuals are significantly *less* likely than those who did not report the problem to say they are satisfied or very satisfied with the company's customer service (68% vs. 88%). In other words, working with the cable company to resolve a service problem is related to a significantly lower satisfaction with customer service. These customers are also less satisfied with the types and variety of programs on cable (70% vs. 80% are satisfied/very satisfied).

Figure 27 shows that most customers at both cable companies think the rates they pay for cable television are too expensive.

27. Responses to: Would you say the rates you pay for
cable television are...
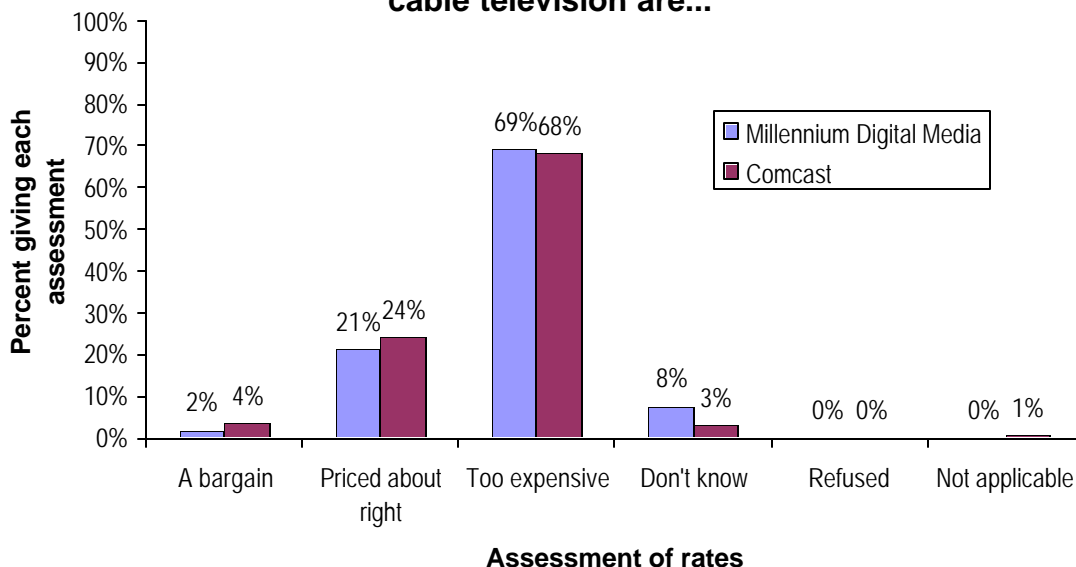
Source: 2004 Seattle IT Residential Survey

Responses to these satisfaction questions were consistent across demographic groups. Comcast's limited basic subscribers are significantly *less* likely to say that the rates are too expensive (41% vs. 76%) while digital subscribers are significantly *more* likely to say it is too expensive (83% vs. 68%). No significant pattern emerged for the Millennium subscribers. Analysis of the influence of the demographic factors on these attitudes yielded few reliable differences among the demographic groups. Overall, women with less education are more likely than their male counterparts to say their cable television rates are too expensive, but this difference disappears among the respondents with more education.

When asked what problems, if any, the subscribers had encountered with their cable service, 160 (25%) said they hadn't had any, and three-fourths were able to identify at least one problem with their cable service. These figures are not significantly different for the two cable companies (Millennium: 86% mentioned at least one problem; Comcast: 76% mentioned at least one problem; unknown provider: 62% mentioned at least one problem). Figure 28 summarizes the percentage of Comcast cable subscribers encountering each of the problems listed and Figure 29 presents the same information for Millennium subscribers.

28. Problems identified by Comcast cable subscribers
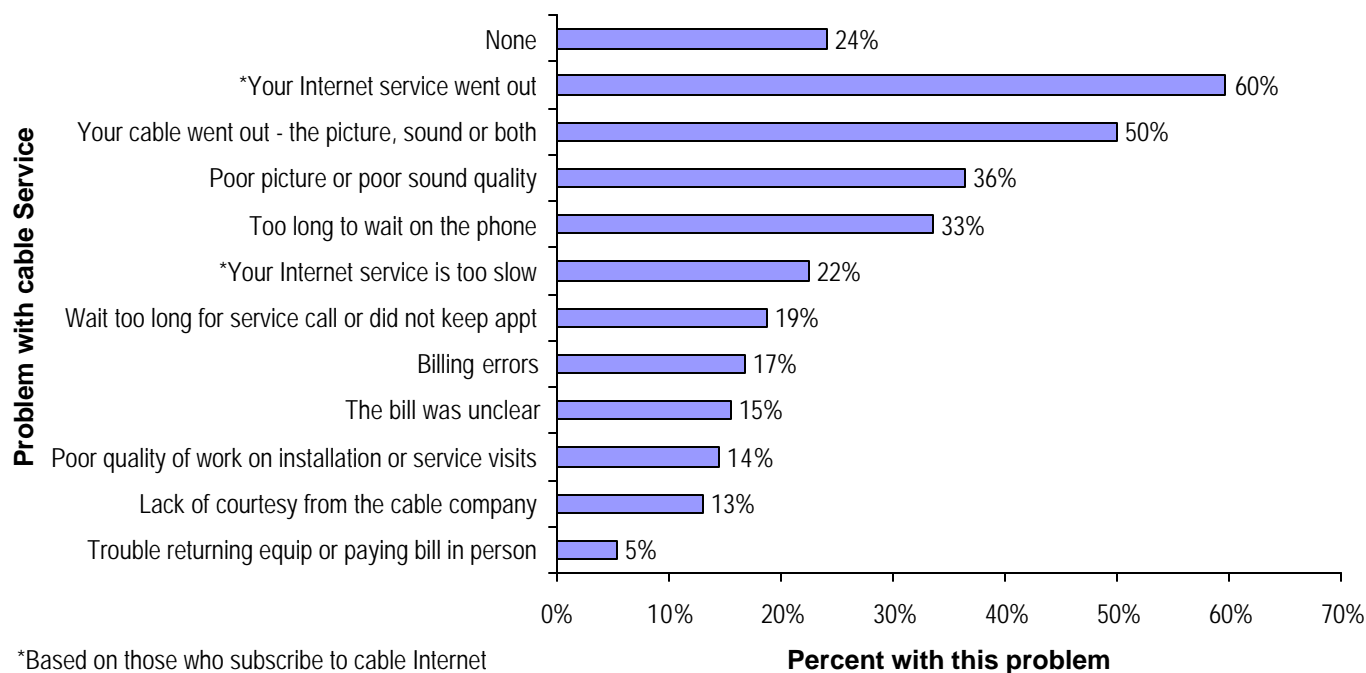
*Based on those who subscribe to cable Internet

Source: 2004 Seattle IT Residential Survey

29. Problems identified by Millennium cable subscribers
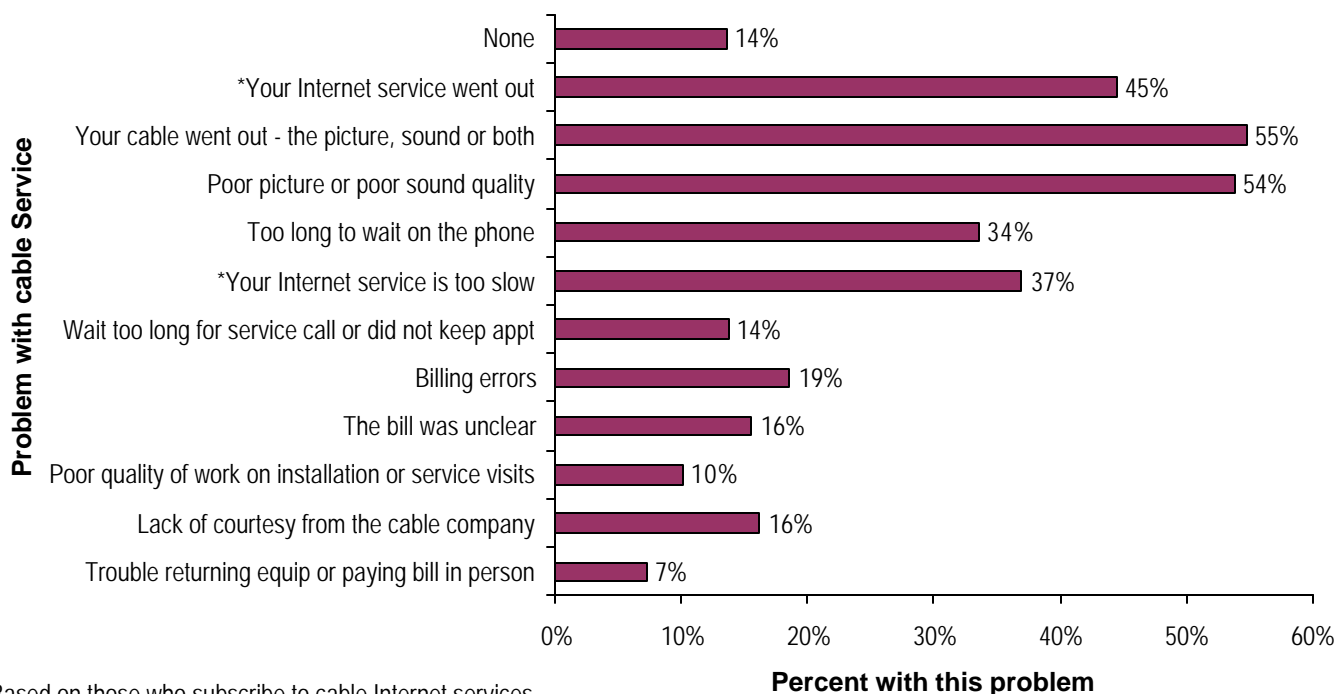
*Based on those who subscribe to cable Internet services

Source: 2004 Seattle IT Residential Survey

Internet service outage is the most frequently identified problem with cable service for Comcast customers who subscribe to it. Three out of five (60%) of those subscribers noted this problem. Half of the Comcast cable subscribers also commented that the picture or sound or both went out on their cable television, and 36% said they had poor picture or sound quality. Some customer service issues were identified by Comcast customers: one-third said they have been kept waiting on the phone for too long; 19% said they were kept waiting too long for service (or for an appointment that wasn't kept); 14% complained of poor quality of work on installations or service visits; and 13% complained of lack of courtesy from the cable company. Seventeen percent complained of billing errors and 15% complained of unclear bills. Of the Comcast customers reporting any of these problems, two-thirds (68%) reported contacting their provider about the problem(s).

Millennium customers exhibit a somewhat different pattern in problems mentioned; however, the only difference to reach statistical significance is that Millennium customers are more likely than Comcast customers to mention poor picture or sound quality (54% vs. 36%).

Analysis of the different problems Comcast subscribers might have with their cable service shows that the likelihood of having the problem – or at least of noting the problem for this survey – is different for different groups.

Your cable went out – picture or sound or both: subscribers between the ages of 36 and 64 were almost twice as likely (60%) to report that their cable signal went out than their younger (36%) or older (39%) counterparts.

You had to wait too long to reach the company on the phone: overall, subscribers with no more than a high school education were somewhat[2] less likely to endorse this complaint (21% vs. 36%). However, among those with extremely low incomes (<30% of the median), subscribers with less education are far *more* likely to endorse this complaint (52% vs. 37%).

Figure 30 shows that overall, seniors are least likely to note that they have to wait too long to reach the cable company by phone, especially compared with those between 36 and 50 years old.

Lack of courtesy from the cable company: seniors are also least likely to complain of a lack of courtesy from the cable company (2%), while between 13% and 15% of the

30. Comcast customers saying they have to wait too long on the phone by age

Source: 2004 Seattle IT Residential Survey

other age groups made this complaint. A relationship between education and income emerged on this item as illustrated in Figure 31.

This figure shows a greater likelihood of noting a lack of courtesy among the lower income respondents, especially those with the least education. At the higher income levels, the impact of education is far diminished.
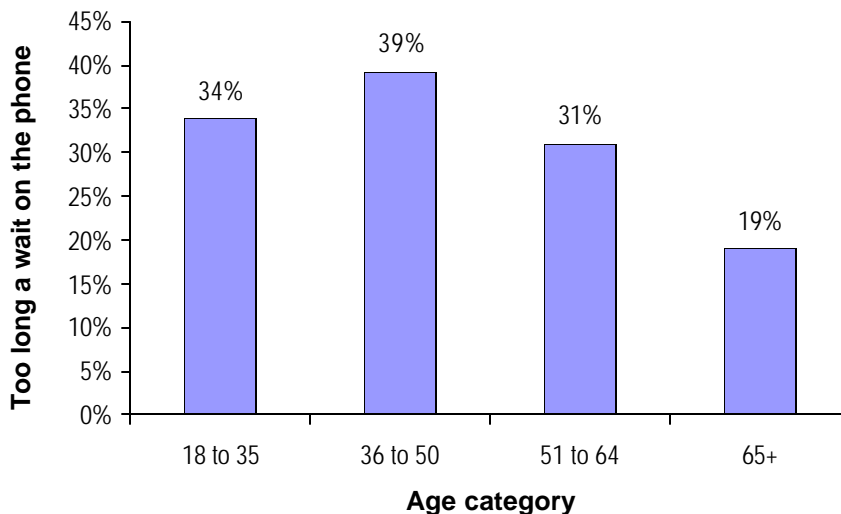
31. Comcast customers saying they have experienced a lack of courtesy from the cable company by education and income

Source: 2004 Seattle IT Residential Survey

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[2] Not statistically significant

You had to wait too long for installation or service visits, or they didn't keep an appointment: This complaint was made by about twice as many of the Native American, Hispanic and Asian/Pacific Islander and other ethnicity respondents (31%) than by the African American (14%) or Caucasian (16%) respondents.

Billing errors and **The bill was unclear:** Table 6 shows that these items were endorsed by about twice as many of the African American respondents than the Caucasian respondents.

Table 6. Billing issues by ethnicity

	African American	Caucasian	Other
Billing errors	28%	14%	22%
Bill was unclear	27%	13%	20%

Both types of billing problems decreased with age, possibly indicating a better understanding of the bills with age, a lack of awareness or attention among the older subscribers, or perhaps these bills are managed by others for the senior subscribers.

Poor picture or poor sound quality: seniors are also about half as likely to report poor sound or picture quality on their cable television (19% vs. 39%).

You had trouble returning equipment or paying bills in person: This problem was identified by between 0% and 6% of the men and women of the different ethnicities, except for African American women, 19% of whom identified this problem with their cable company.

The 350 non subscribers were asked why they do not subscribe to cable television. Figure 32 summarizes the reasons that were volunteered.

32. Reasons for not subscribing to cable television

Source: 2004 Seattle IT Residential Survey
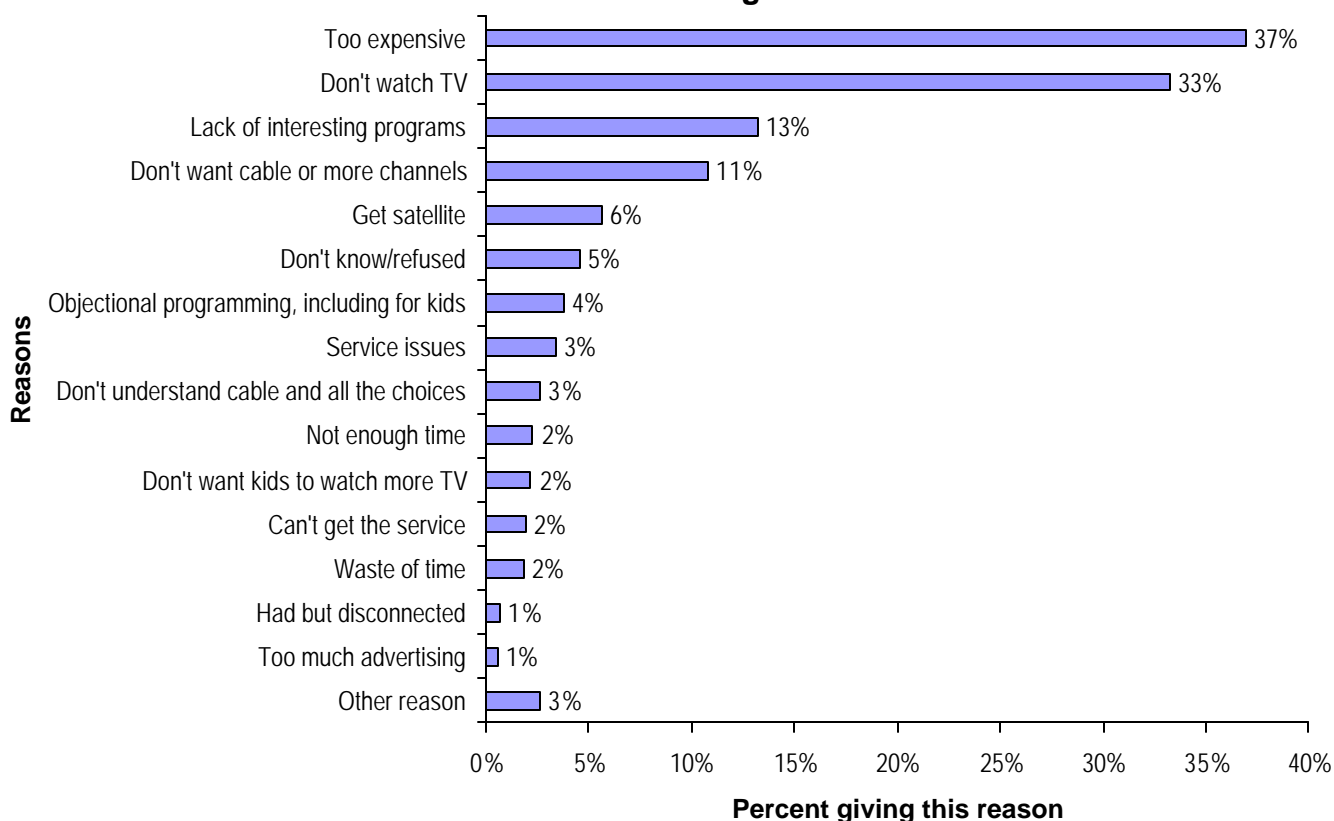
The most commonly offered reason was the expense of the service (37%), followed by the respondent's statement that he or she does not watch television (33%). Not surprisingly, those with the lowest income are the most likely to say they don't have cable because it is too expensive (56%), a reason that becomes less common as income increases to a low of 26% in the highest income group.

Subscribers and non subscribers were asked about making up their own package of channels. Subscribers were asked how likely they would be to pay a little extra for the opportunity to make up their own package, and non subscribers were asked how likely they would be to subscribe to cable if they offered the opportunity to make up their own package of channels as an add-on to their basic cable package. Figure 33 illustrates the responses.

33. Likelihood of paying more (subscribers) or subscribing if allowed to make up the package of channels
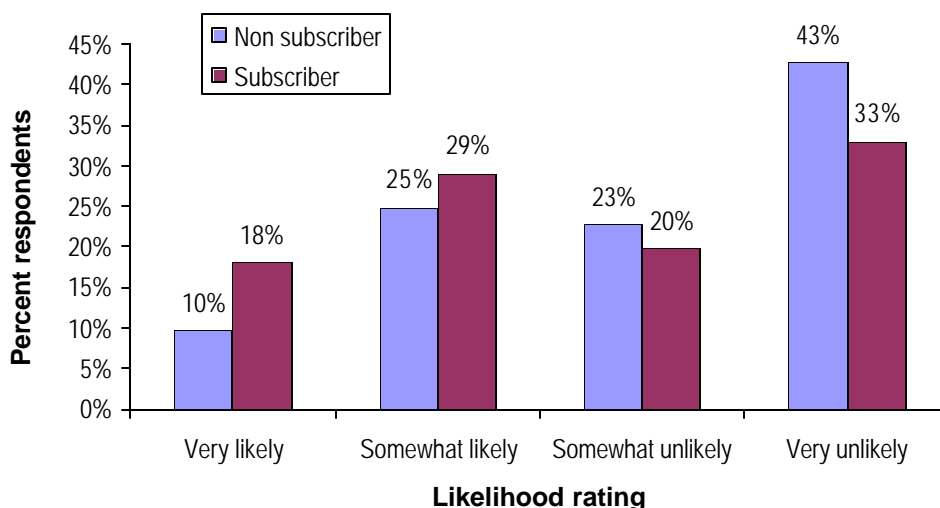
Source: 2004 Seattle IT Residential Survey

Overall, current subscribers are more interested in this option than current non subscribers. Nearly half (47%) of the subscribers said they would be very or somewhat likely to pay a little extra for this opportunity, compared with 35% of the non subscribers.

Those who said they don't currently subscribe to cable because they don't watch TV or don't want cable or more channels were less positive about the opportunity to make up their own package of channels. If the individuals giving those responses are removed from the analysis, the non subscribers' response profile looks more like the subscribers' response profile with 42% of these non subscribers saying they would be somewhat or very likely to subscribe to cable if they could make up their own package.

What residents want
Respondents, subscribers and non subscribers alike, were asked if there are any types and variety of programs or channels they would like to see on cable television. Figure 34 summarizes the responses. Overall, 60% of the respondents said there were no other types or varieties of channels that they wanted to see. This response was similar for subscribers and non subscribers. Of the other 40%, the most commonly identified type of programming was education or public programming, a response offered 10% of the subscribers – more than for any other single response – and by 21%, twice as many, of the non subscribers. Non subscribers were also nearly

twice as likely as subscribers to say they wanted more news channels, including international news.

34. Type of cable programming wanted

Type of programming (vertical axis)

Type of programming	Subscribers	Non subscribers
*Educational/public programming	10%	21%
Movies, old movies, foreign film	9%	7%
*News, including international news	5%	9%
Entertainment	4%	7%
Don't know	3%	4%
Sports, including local	3%	4%
Want to customize programming	4%	1%
International or foreign language channels	3%	3%
Cultural/music	3%	3%
Family	2%	1%
Unwilling to pay more/ other price issue	3%	0%
Local issues and news including traffic	2%	1%
Other	2%	2%
Science programs	2%	1%
Independent/alt programming, news	1%	1%
Children's	1%	1%
General, more options	2%	0%
Nature, animal, environmental	0%	3%
Domestic arts -- house and garden	1%	1%

Percent wanting this type of programming

Source: 2004 Seattle IT Residential Survey

In addition to asking about types and variety of programming, respondents were asked about different features that might be available in the future through cable and asked to rate their likelihood of choosing those features as part of their cable package on a scale from 1 (very unlikely) to 4 (very likely). The features mentioned have implications for the future bandwidth requirements.

About one in five respondents (19%) did not select any feature as one they would be somewhat or very likely to choose as part of their cable package, and 6% said they would be likely to choose all six features mentioned. Respondents choose an average of 2.4 features, with no difference between subscribers and non subscribers. Overall, four out of five respondents

indicated that they would be somewhat or very likely to choose at least one of the features mentioned.

Figure 35 summarizes the likelihood ratings offered by subscribers and non subscribers together. About half the respondents said they would be very or somewhat likely to choose three of the features: high definition TV (51%); ordering movies and shows delivered over cable (52%); and wireless Internet access available at other locations outside the home (49%). Less commonly endorsed were making telephone calls over the Internet (37% said very or somewhat likely); and video conferencing (38%). Only 18% said they would be very or somewhat likely to choose interactive services as part of their cable package. It is possible that some of these responses are depressed because of lack of understanding of the potential service. If so, the demand might be greater yet once marketing efforts have to promote these services have been put in place.

35. Interest in cable features potentially available in the future
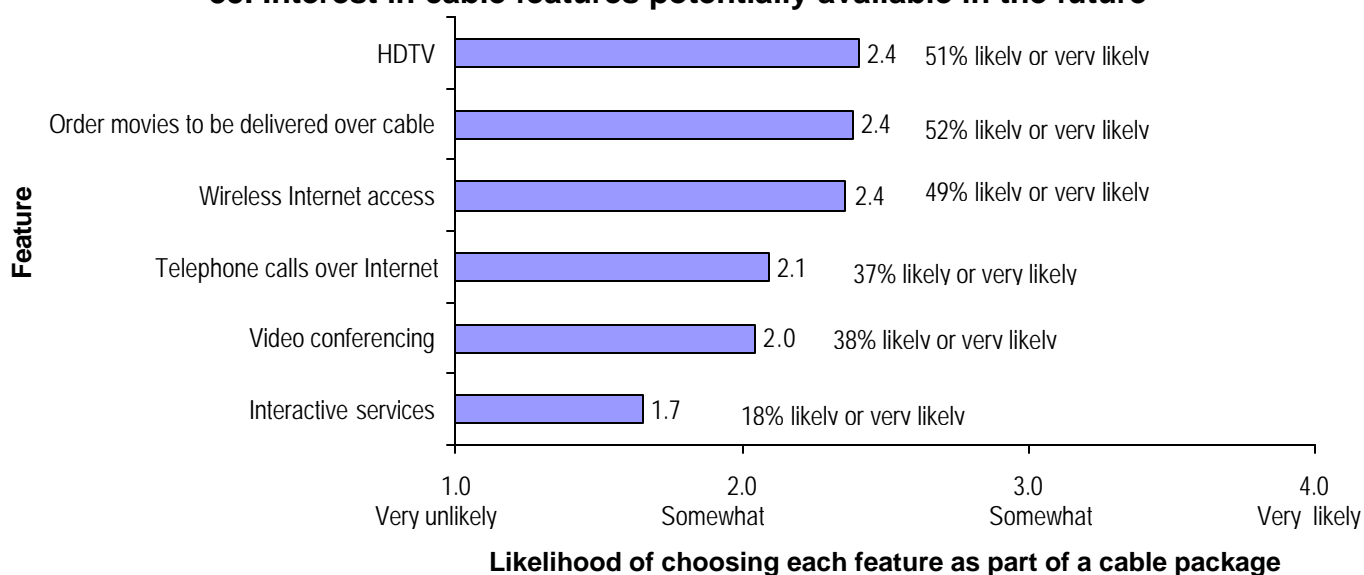
Source: 2004 Seattle IT Residential Survey

Subscribers and non subscribers gave similar ratings except for high definition TV where 24% of the current cable subscribers said they were very likely to choose this feature, compared with 11% of the non cable subscribers. These findings indicate a growing demand for increasing cable bandwidth.

A composite variable was created indicating the number of features that the respondents said they would be very or somewhat likely to choose as a part of a cable package. Nearly one respondent in five (19%) did not indicate that they would be likely or very likely to choose any of the features. Interestingly, this number is only slightly, and not significantly, higher among the current non-subscribers (25% vs. 18%). On average, the respondents identified between two and three features that they would be at least somewhat likely to choose. Younger respondents (18-35 years) selected the most features (2.9), followed by the next two age groups (36-50 years) who selected an average of 2.4 features, and the 51 to 64 year olds, who identified an average of two

features. The seniors (65+ years) endorsed the fewest features that they would be likely to add, an average of 1.1.

Accordingly, age was a significant factor influencing the likelihood of choosing the feature for each of the individual features, and the only significant factor for wireless Internet access and video conferencing. These relationships are illustrated in Figure 36.

36. Interest in wireless Internet access, video conferencing and telephone calls over the Internet decline significantly with age
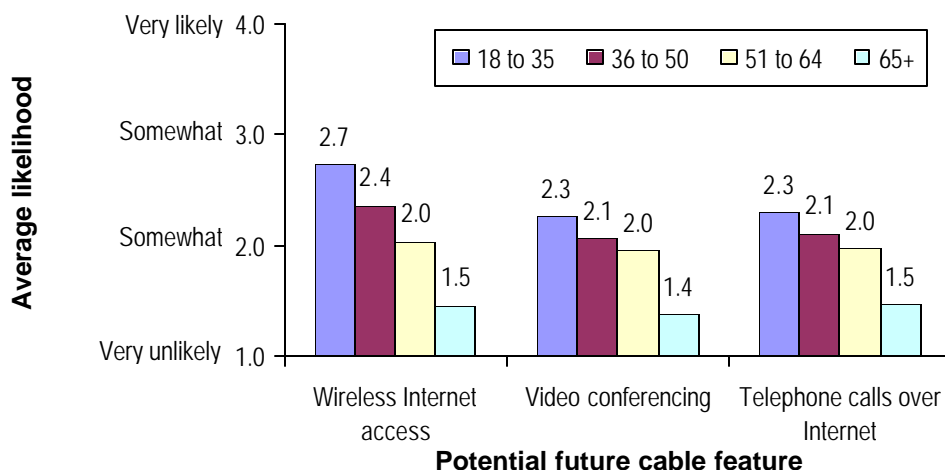
Source: 2004 Seattle IT Residential Survey

This figure shows that interest in each of these features is higher among the younger respondents, the group that is least likely to be current cable subscribers, and is particularly low among the oldest group of respondents, those most likely to be current subscribers. The relatively high level of interest among the youngest respondents implies a demand for increased capacity further into the future.

City Cable Office

Overall, 26% of the cable subscribers and 25% of the non subscribers said that they are aware that the City of Seattle has a Cable Office with a Customer Bill of Rights to protect the rights of cable consumers, and 20% wanted the City to contact them about their rights as cable customers. Millennium subscribers were most likely to say they wanted to be contacted (31%) compared with Comcast customers (21%) and those without current cable service (14%).

37. Awareness of the City's Cable Office lowest among youngest and oldest; especially among non Caucasians
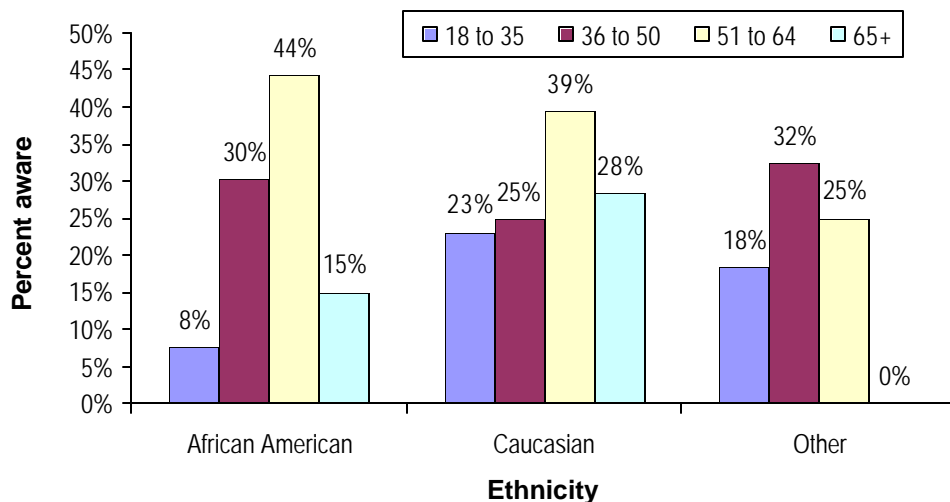
Source: 2004 Seattle IT Residential Survey

Figure 37 shows that overall, the youngest and the oldest respondents are least likely to say they are aware of the City's Cable Office and those between 51 and 64 are the most likely to be aware. Among the Caucasian respondents, the impact of age on awareness is not as great. Similarly, Figure 38 shows that income influences the likelihood that the non Caucasian respondents are aware of the City's Cable Office, but the Caucasian respondents seem to be protected from this income effect.

38. Awareness of the City's Cable Office is influenced by income level except among Caucasian respondents

Source: 2004 Seattle IT Residential Survey

Responses to an offer to have the City contact the respondent about their rights as a cable customer and discounts for low income seniors and people with disabilities varied dramatically by demographic group. Figures 39a through c show that the desire to be contacted decreases significantly as income or education increase and increase significantly with age. Figure 39d shows that Caucasian respondents are significantly less likely than either African American respondents or those of other ethnicities to want more information from this office. This information was provided to the Cable Office for follow-up.

39a. Want to be contacted by City about rights as a cable customer by income
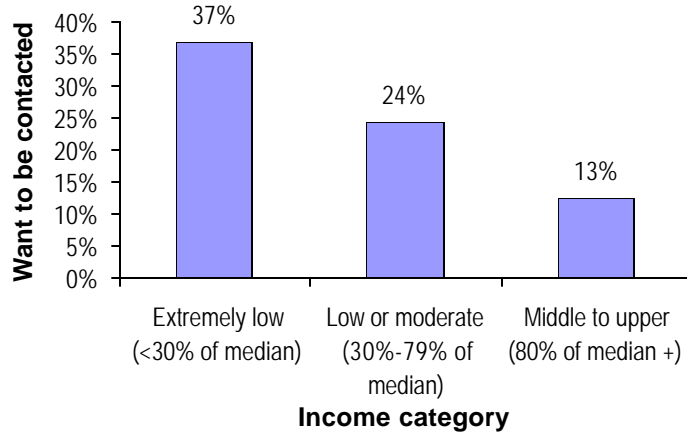
Source: 2004 Seattle IT Residential Survey

39b. Want to be contacted by City about rights as a cable customer by age
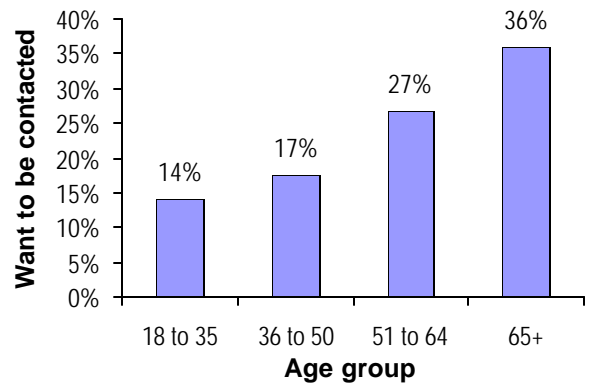
Source: 2004 Seattle IT Residential Survey

39c. Want to be contacted by City about rights as a cable customer by education
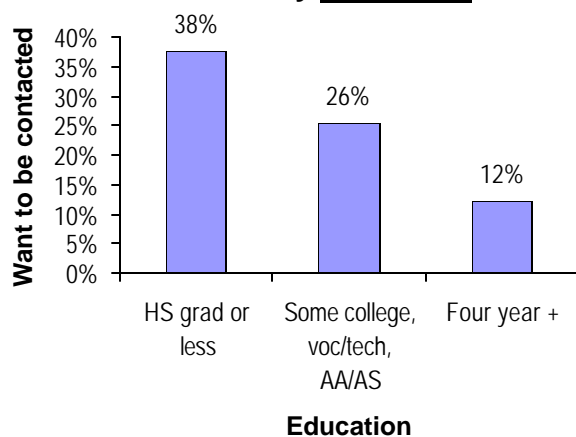
Source: 2004 Seattle IT Residential Survey

39d. Want to be contacted by City about rights as a cable customer by ethnicity
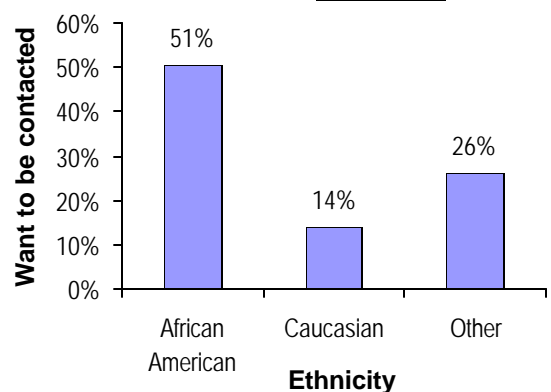
Source: 2004 Seattle IT Residential Survey

Another layer of complexity lays over these overall relationships between wanting to learn more from the City about rights as a cable customer and the demographic items analyzed. Figure 40 illustrates the somewhat more complex relationship between age and ethnicity on wanting to be contacted. Like Figure 39b, this figure shows that a desire to be contacted by the City increases with age, regardless of ethnic background, and like Figure 39d, it shows that African American respondents are the most likely to want

40. The increase with age in the percentage of respondents wanting to be contacted by the City's Cable Office is sooner and steeper among the non Caucasian respondents
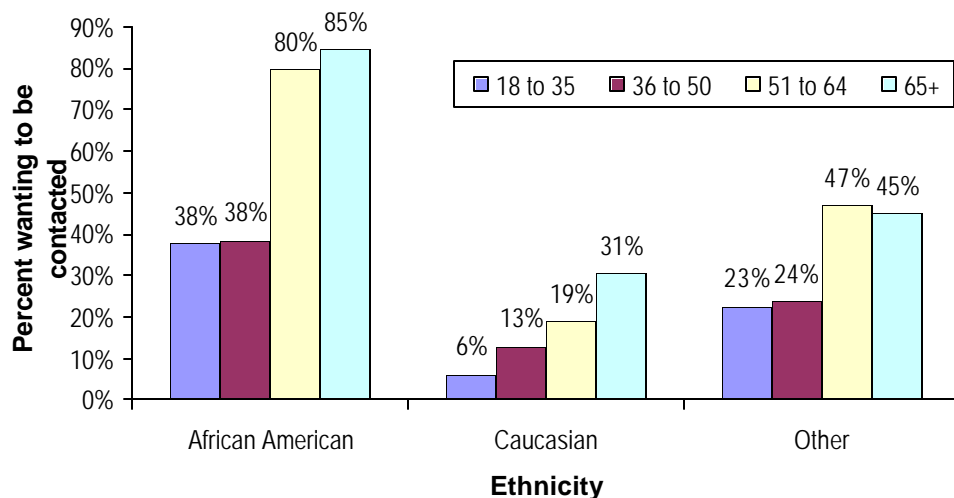
Source: 2004 Seattle IT Residential Survey

to be contacted and Caucasian respondents are the least likely to want to be contacted. The additional information that this figure provides is that while the percentage of Caucasian respondents wanting to be contacted increases steadily with age, the jump among the African American respondents and respondents of other non Caucasian ethnicities is more dramatic and occurs first among a younger group of respondents.

Figure 41 confirms the general trend of decreasing desire to be contacted with increasing income, and increasing desire to be contacted with increasing age. But this figure also reveals that the increase with age occurs at younger ages as income decreases. Figures 39a through c suggest that the City might

41. The increase with age in the percentage of respondents wanting to be contacted by the City's Cable Office is sooner and steeper at the lowest income levels

Source: 2004 Seattle IT Residential Survey

want to increase outreach efforts to older, lower income and less educated residents. Figures 40 and 41 fine-tune this finding somewhat suggesting that the age group to target might be younger for non Caucasians and lower income groups. It is important to note that these groups wanting more information are the same groups with less access to computer and Internet technology. If the City chooses to reach out to these individuals, this may also be an opportunity to explore some of the important issues and impacts of limited access to technology, as well as potential solutions.

Public access television: Seattle Community Access Network (SCAN)

Respondents, cable subscribers and non subscribers, were asked questions about SCAN, the Seattle Community Access Network. This is a public access channel where the public can create and show their own television programs. Overall, nearly half (48%) of the respondents said they have watched SCAN – more likely are: cable TV subscribers (56% vs. 35% of the non subscribers); and men (54% vs. 43% of the women). Less likely are: older residents (30% of the 65+ group vs. about half of the younger respondents); and those in the lowest income group (37% vs. 50% of those with more than 30% of the median income). It is important to realize that the difference in experience with SCAN among the different income groups is not longer significant when cable access is included in the analysis. In other words, when access to cable is taken 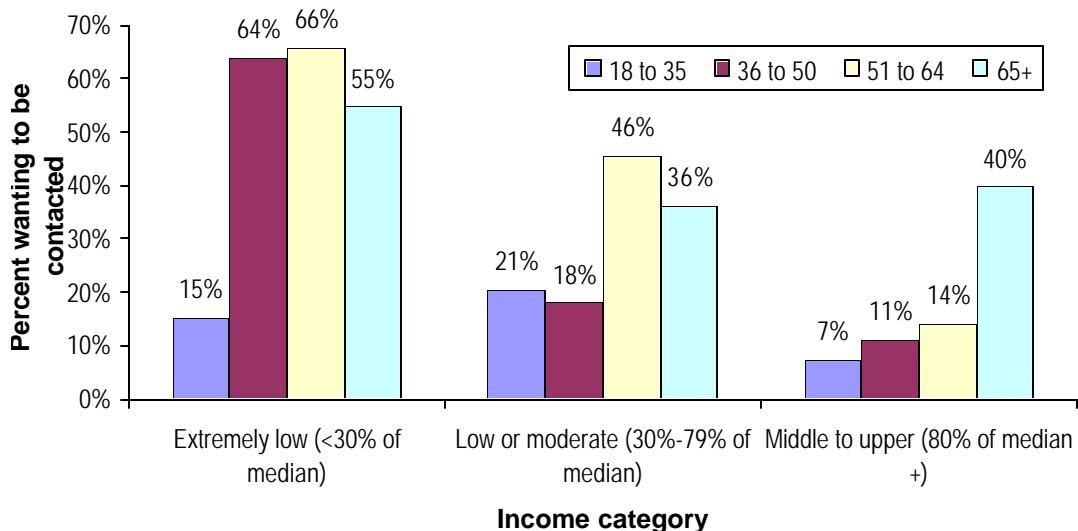into consideration, respondents in the different income groups are equally likely to have seen SCAN, suggesting that the difference is due to a difference in access to SCAN rather than a difference in interest among different income groups.

More than three-fourths (81%) of the respondents said they think it is important or very important for residents and organizations to have access to SCAN (see Figure 42), diminishing with age (Figure 43). Of those who had seen it, 56% said they don't watch it regularly, maybe just when they are channel surfing (Figure 44).

42. Overall, respondents believe it is important or very important for residents to have access to SCAN. Those who have watched it express this view significantly more strongly.

This figure illustrates the high importance rating given the SCAN channel by Seattle residents, especially those who have watched it.
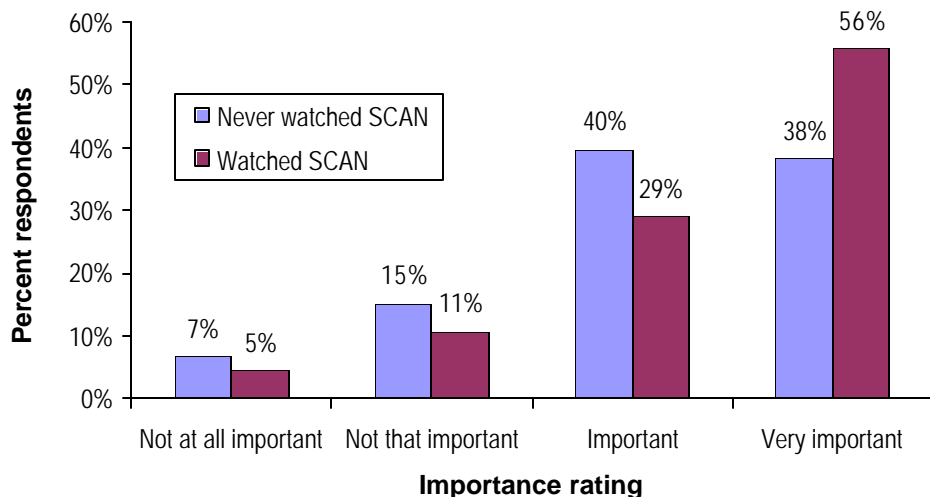
Source: 2004 Seattle IT Residential Survey

Figure 43 displays the importance ratings given SCAN by residents of different age groups. This figure shows that although seniors also find the public access channel important, this group gives it a lower importance rating than do the younger residents.

43. Seniors see SCAN as less important than younger residents
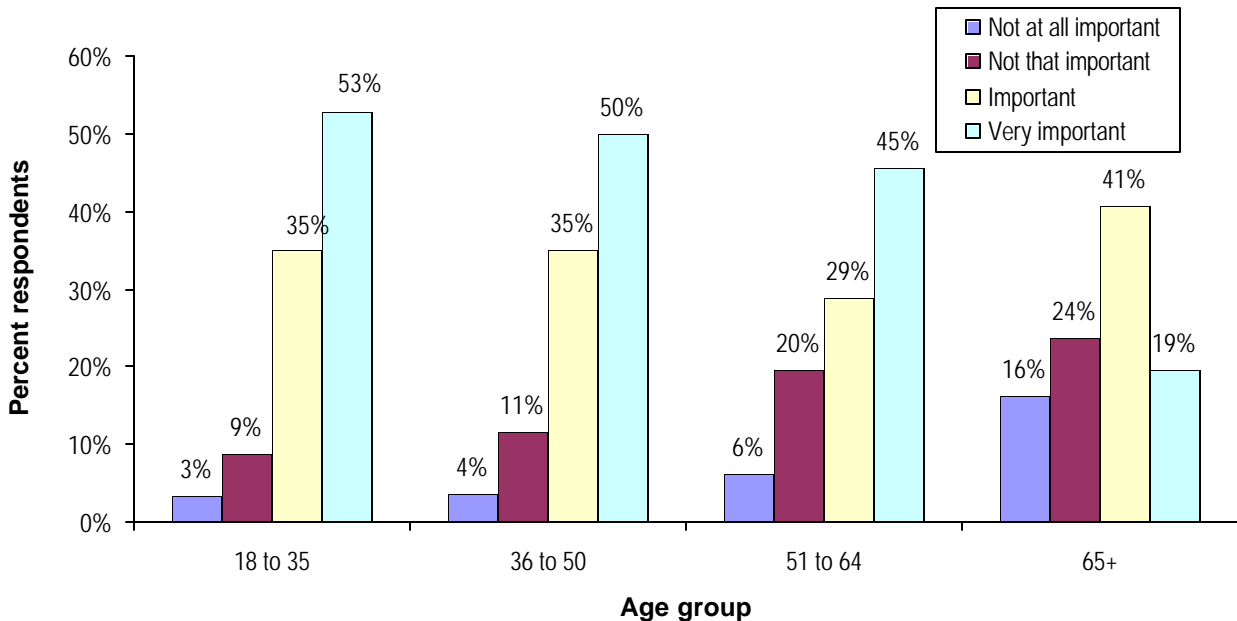
Source: 2004 Seattle IT Residential Survey

44. Most residents who watch SCAN do so irregularly; about one in five watch at least weekly
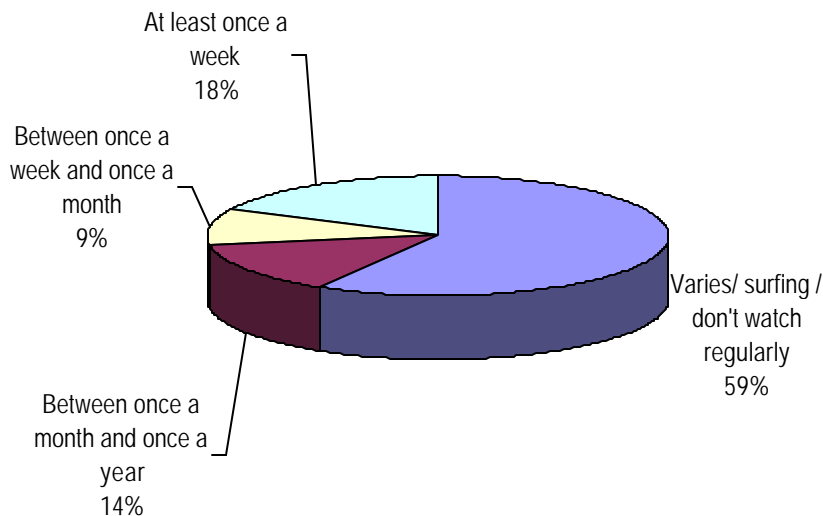
Source: 2004 Seattle IT Residential Survey

Figure 44 shows how often those who have seen SCAN tune in. Most (3 out of 5) catch SCAN irregularly, perhaps while channel surfing. One in five say they watch it at least weekly.

Figure 45 combines the information from the previous two figures and shows that about two-thirds of the respondents who watch SCAN regularly think it is very important, as do about half of those who watch it irregularly.

45. Regardless of viewing frequency, residents say access to SCAN is important or very important
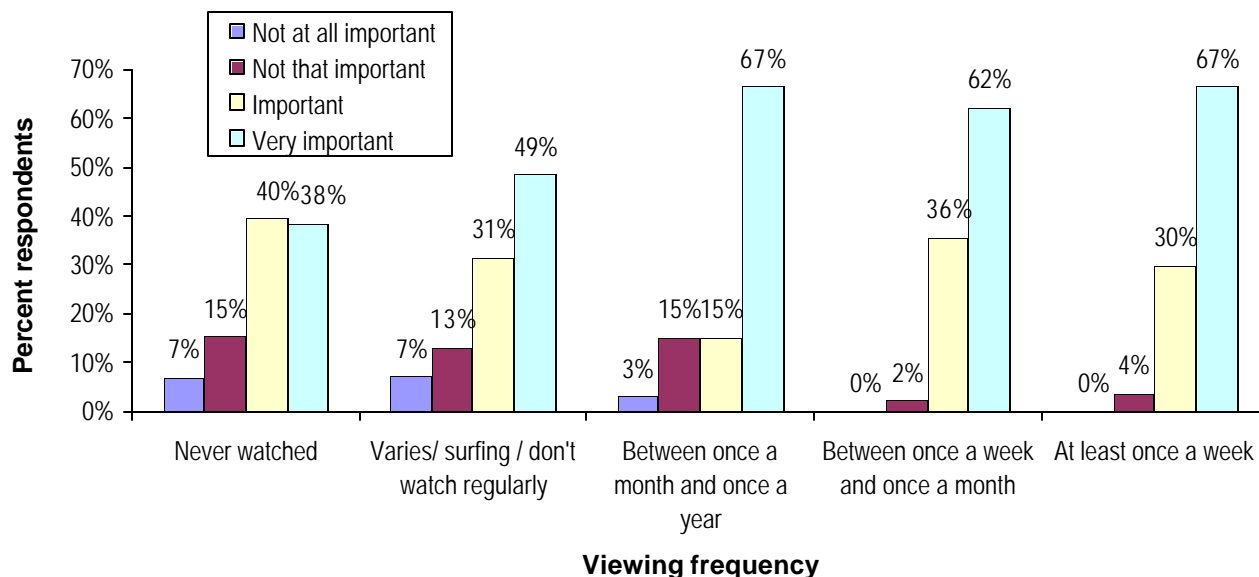
Source: 2004 Seattle IT Residential Survey

Seattle Channel

Respondents were asked about their experience with and opinions about the Seattle Channel. This is the government channel with City Council meetings and programs about city services and can be viewed on cable television or over the Internet. More than half (56%) of the respondents said they've seen this channel, fewer (36%) in the lowest income group and more among cable subscribers (69% vs. 33% of non subscribers). Again, as with SCAN, it is important to note that when the analysis controls for cable access, the difference by income level disappears, suggesting that the lower rate of experience for low income users is associated with lack of access to cable rather than lack of interest in the Seattle channel. These findings indicate that the community's lowest income residents may have disproportionately less access to community information as technology expectations for access, and the associated costs, increase.

A similar question was asked of cable subscribers in the 2000 residential survey: "Have you ever seen or watched the City of Seattle government cable channel, TV-Sea on channel 21?". Even though the percentage of residents with cable television did not increase significantly between 2000 and 2004, the percentage of cable subscribers who say they have watched the Seattle Channel has (from 57% in 2000 to 69% in 2004).

Figure 46 shows the change in watching the Seattle Channel among cable television subscribers between 2000 and 2004 for each demographic group. This figure shows a significant increase among: all ethnic groups except African Americans where the percentage watching the Seattle

Channel was already high; among those of low or higher income – and not among those with extremely low income; among women; among all age groups except the oldest and among all education groups except those with a four year college degree or more.

46. Increase in percentage having seen the Seattle Channel between 2000 and 2004 apparent in many demographic groups
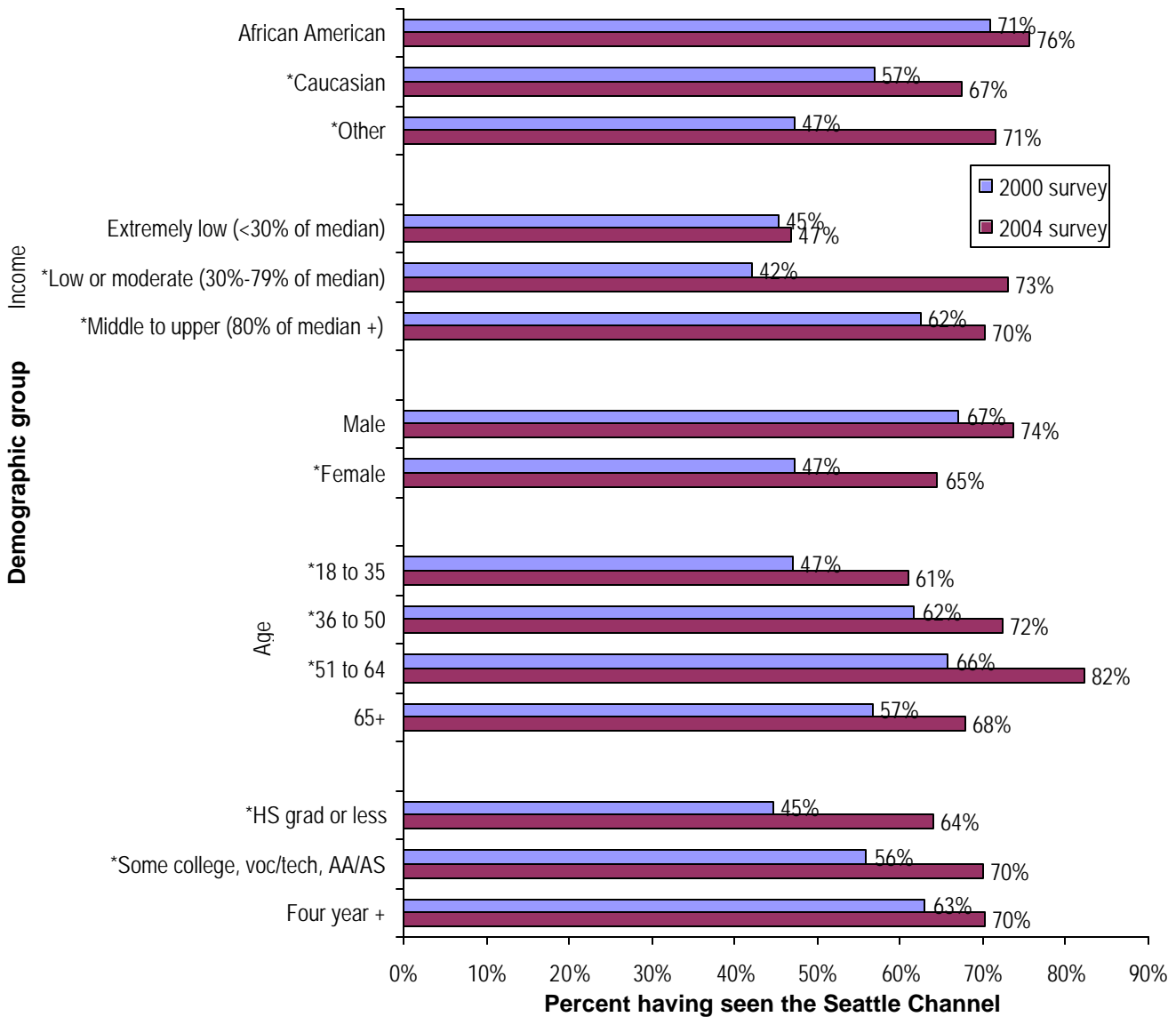
Source: 2004 Seattle IT Residential Survey

(Base: All respondents)

Not only has the number of people watching the Seattle Channel increased since 2000, those who watch it are watching it more often. Looking just at the cable subscribers who have seen the Seattle Channel, Figure 47 shows that in both years, about half said they don't watch regularly (2000: 48%; 2004: 50%) and about one-fifth said they watch at least once a week (2000: 21%; 2004: 22%). But in 2000, 22% said they watch less than once a month but more than once a year, down to about one-third of that (8%) in 2004. At the same time, the percentage saying they watch between once a week and once a month about doubled from 10% in 2000 to 19% in 2004.

47. Viewing frequency of the Seattle Channel among cable TV subscribers has increased since 2000
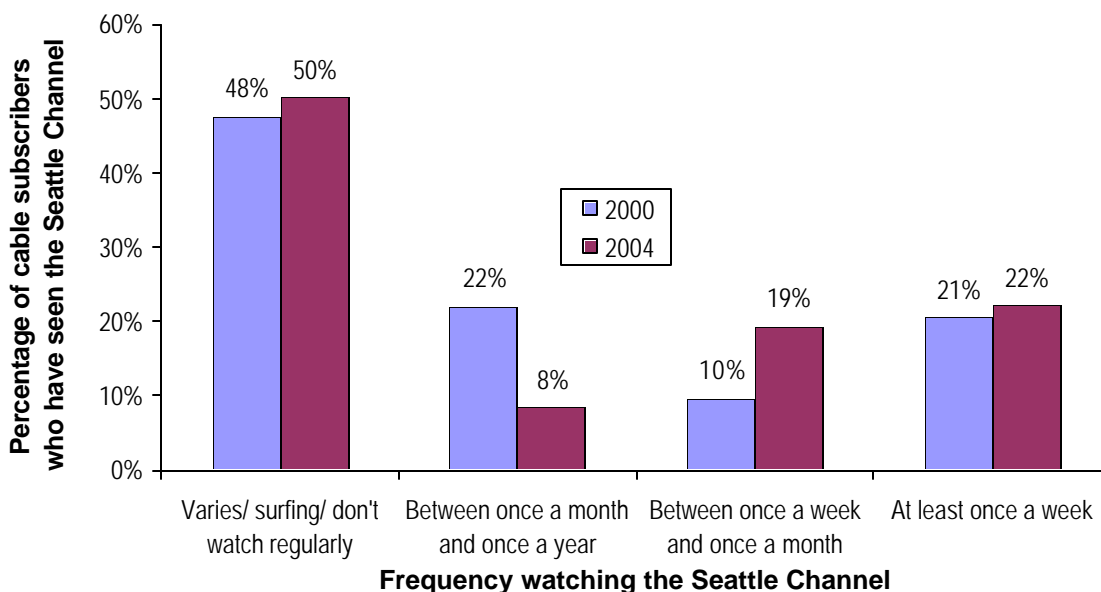
Source: 2004 Seattle IT Residential Survey

Respondents were also asked what type of programming would encourage them to watch the Seattle Channel or to watch it more. They were read a list of options and were allowed to endorse as many as they wanted. Figure 48 illustrates the responses. Overall, a high level of interest was indicated for most of the options with press conferences being the least frequently endorsed – by one-third of the respondents. Nearly two-thirds said documentaries about Seattle would encourage them to watch the Seattle channel more, and more than half endorsed arts events and community festivals, and city news.

Those with cable TV were more likely to endorse features about city services (47% vs. 40%) and documentaries about Seattle (58% vs. 54%), but no other differences between subscribers and non subscribers reached statistical significance.

48. Type of programming that would encourage residents to watch the Seattle Channel, or watch it more

Source: 2004 Seattle IT Residential

Percent endorsing
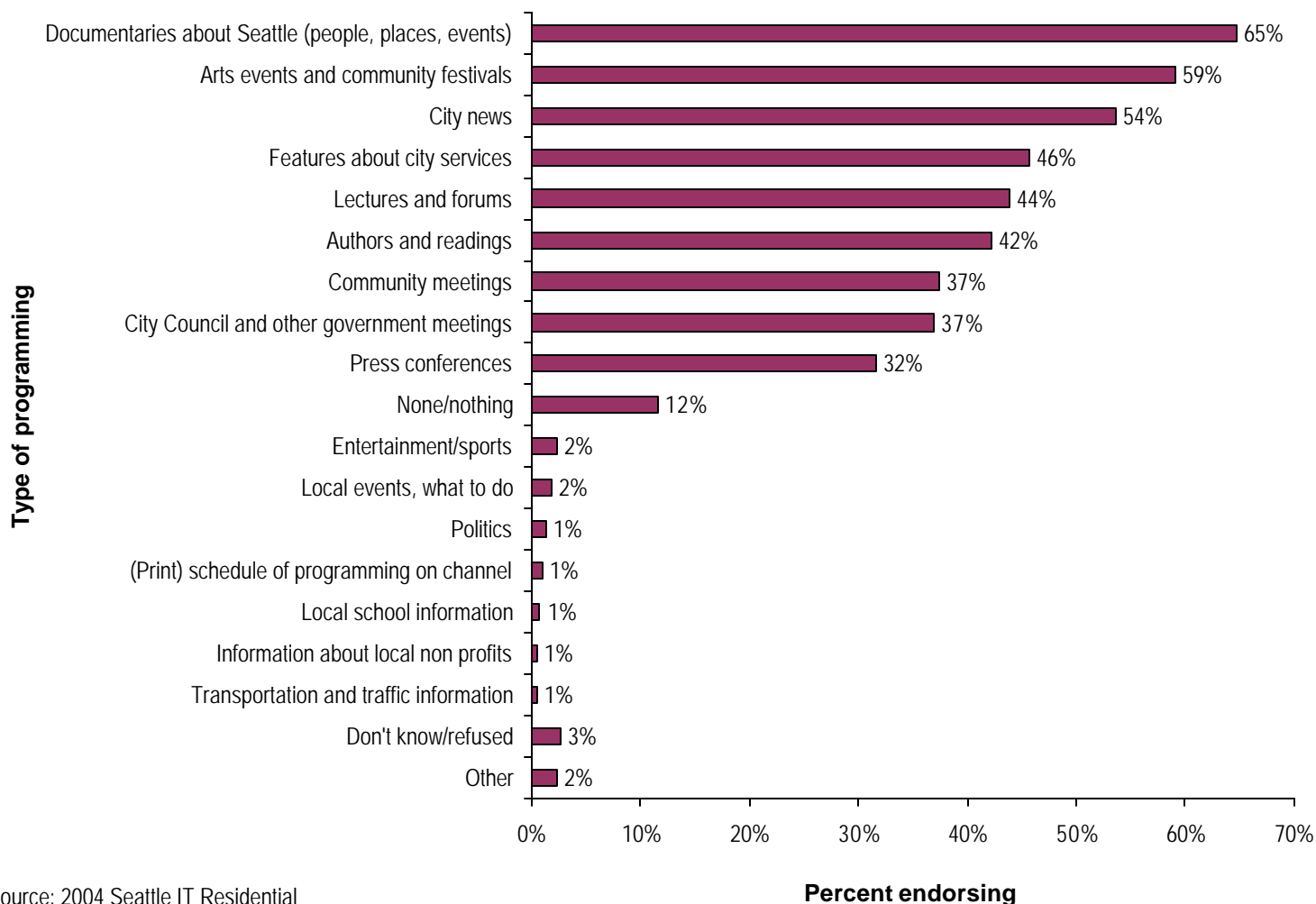
Ethnic differences emerged in response to several of these items. Specifically, African American respondents were more likely than Caucasians to endorse city council and other government meetings (45% vs. 36%), features about city services (57% vs. 41%), city news (62% vs. 52%), community meetings (50% vs. 37%), and authors and readings (56% vs. 42%). The same pattern emerges for documentaries about Seattle among residents over 50 (endorsed by 67% of the African Americans in this age group compared with 57% of the Caucasians) but the opposite pattern emerges for those 50 and younger (62% of the African Americans and 69% of the Caucasians).

Residents with more education are more likely to endorse lectures and forums (50% of those with a four year college degree or more, compared with 41% of those with some college or a voc/tech degree or a two year degree and 29% of those with a high school education or less). Education is also related to interest in authors and readings, but less dramatically. Thirty-five percent of those with the least education endorsed this option, up to 44% of those with some college or more.

PART 3

Computer and Internet

Access locations

Overall, 85% of the respondents are current computer or Internet users and another 8% are former users. Computer users were asked if they use computers or the Internet at work, school, the public library, or some other place in the community, including a friend's or relative's house. In addition, respondents were invited to identify other locations where they use computers or the Internet. Figure 49 shows where Seattleites access computers and the Internet. Most respondents (60%) endorsed two or three places and 12% endorsed four or five. About one in five (19%) endorsed only one and 10% named none of these places.

49. Seattle residents have computer or Internet access at many locations

Based on all respondents

Source: 2004 Seattle IT Residential

Percent with access at this location
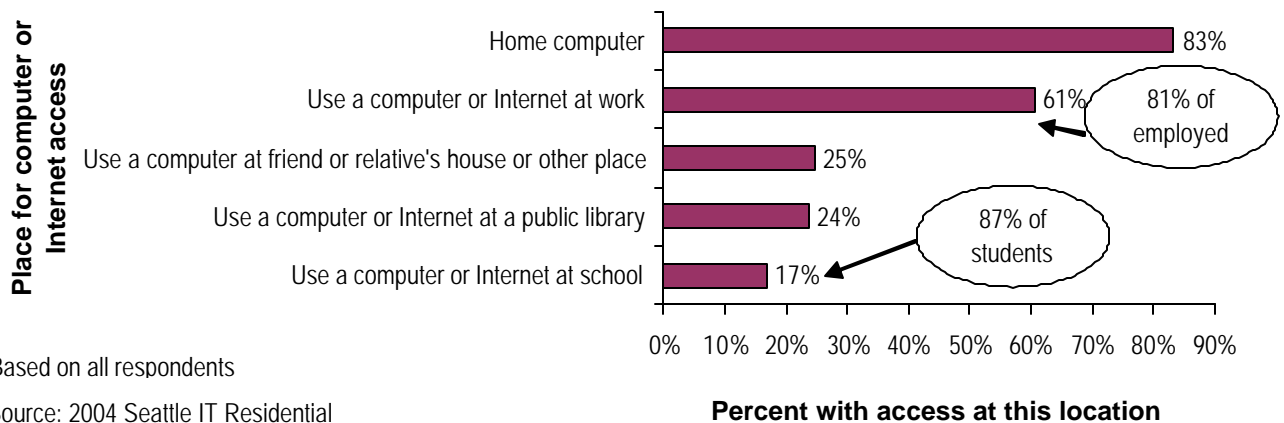
About one percent mentioned using and Internet café and fewer than one percent mentioned the airport, cell phone access or hotels.

Some of these places were also asked in the 2000 survey. Figure 50 shows an increasing trend at

50. More Seattleites have home computers in 2004 than in 2000, but gains at other access points are not significant

*p<.05

Source: 2004 Seattle IT Residential

Percent with access at this location
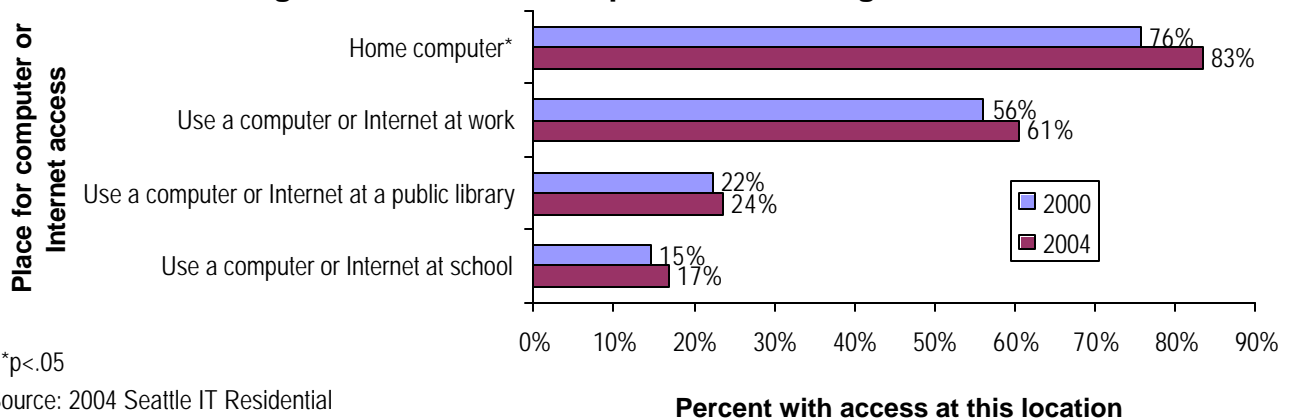
each of the locations, but it reached statistical significance only for home access.

Non-computer users

In an effort to understand some barriers to computer and Internet access, the 233 people who identified themselves as current non-computer users, or who reported a very low level of computer use were asked for all the reasons they could think of for not using a computer or not using it more than they do. They were allowed to identify multiple reasons which were then coded into the categories illustrated in Figure 51.

51. About one in five of the people who don't use a computer or don't use it much say it is because they have no desire or need to. One in 10 say it's because they have no access

Reason	Percent
Don't know/refused	18%
No desire or need	17%
Other things to do	12%
No special reason	10%
Too busy to learn	10%
Nothing on computers interests me	9%
No access	9%
Too old	7%
Never learned how to use them	7%
Too expensive	6%
Other reason	6%
Not a computer person	6%
Too complicated - can't learn how to use them	4%
Prefer to talk to someone/too much technology	4%
Afraid of them	2%
Don't like them	1%
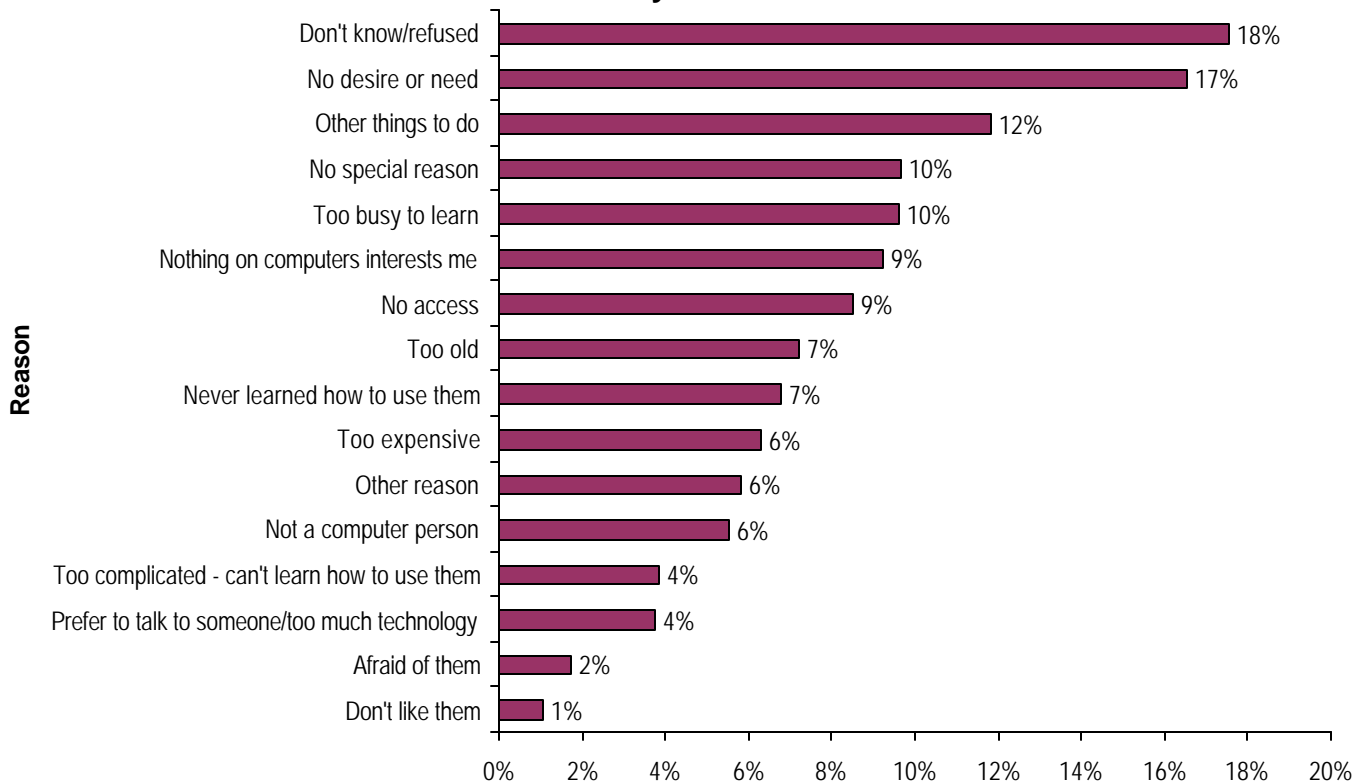
Source: 2004 Seattle IT Residential Survey

Percent naming this as a reason for not using a computer

About two respondents in five gave responses that suggested having made a choice not to use computers or not to use them more (too busy, no interest, other things to do, no need or desire). Figure 52 shows that this type of response was identified by more of the Caucasian non-computer users than the non-computer users of other ethnicities.

52. Caucasian non computer users were more likely than other ethnicities to say they don't use computers because they don't want to
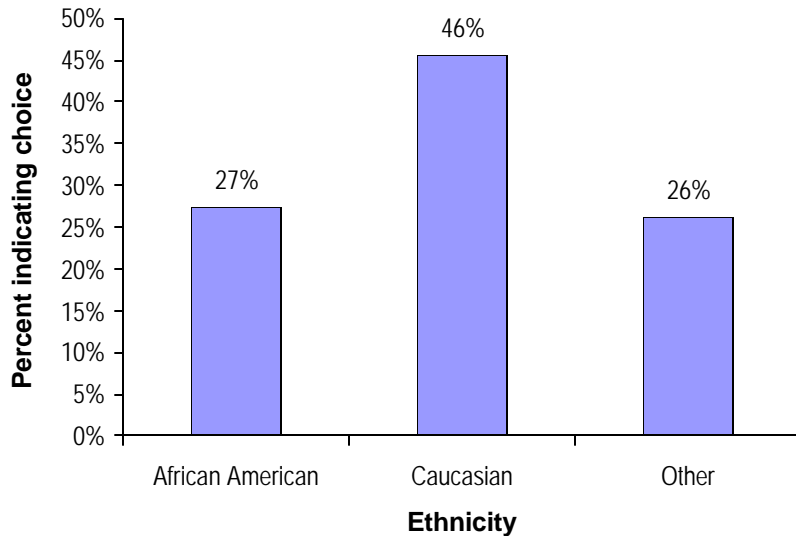
Source: 2004 Seattle IT Residential

53. Overall, women are more likely than men to say they don't use computers because of circumstances (no access, never learned, too expensive), especially in ethnic groups other than Caucasian or African American
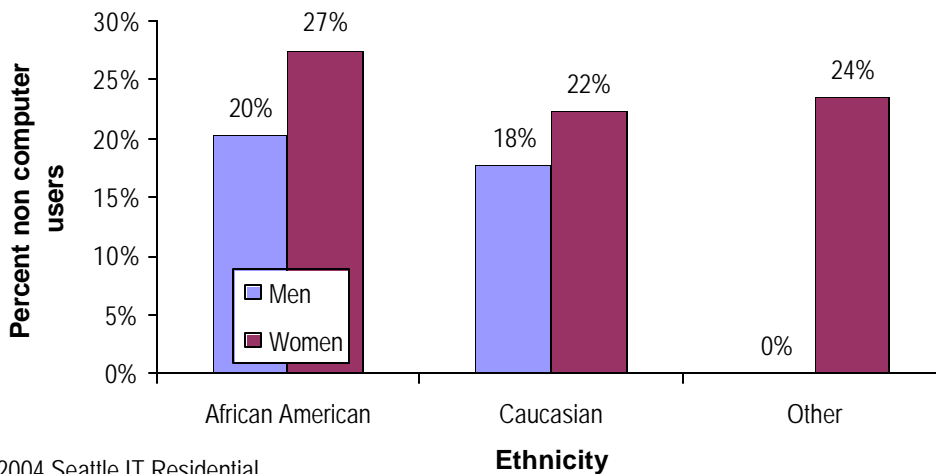
Source: 2004 Seattle IT Residential

About half as many (19%) gave responses suggesting that their lack of use is due to circumstances beyond their control (no access, never learned how, too expensive). Figure 53 shows that women are more likely than men to give this type of response, especially in non-Caucasian or African American households.

About as many (18%) gave a more personal reason (afraid of computers, can't learn to use them, don't like them, too old, not a computer person). Individuals giving this type of reason were equally distributed across the demographic groups.

Who are current computer users and patterns of changes

Multiple analyses were conducted to identify which subgroups are least likely to have computer or Internet access. This could be important as more services are made available online. If certain subgroups have less Internet access, they would be disproportionately excluded from getting services in this way and without awareness of these patterns, policy decisions could be made that make it especially difficult or expensive for individuals in these groups to access services.

Figure 54 illustrates an interaction between income and being a computer user. It shows that in 2000, about one-fourth (26%) of the lowest income respondents had never used a computer. By 2004, half that many of the lowest income respondents have never used a computer. This means that access is improving for this group, but that income remains a significant predictor of computer and Internet access.

54. Respondents in households with less income are less likely to be current computer users in both 2000 and 2004, but gap is narrowing
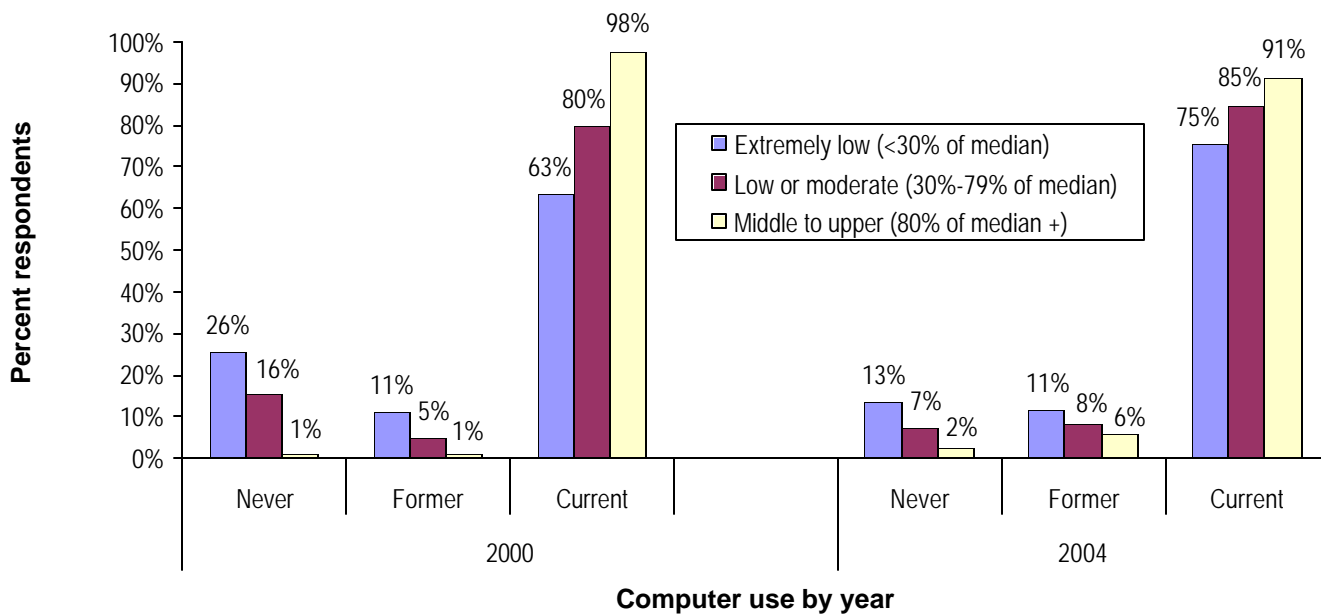
Source: 2004 Seattle IT Residential

Figure 55 shows that seniors are the most likely never to have used a computers, both in 2000 and in 2004. This persistent and dramatic effect seems to be mitigating slowly, as nearly half (44%) of the senior respondents in the 2000 survey said they had never used a computer, compared with nearly one third (30%) in 2004. However, note that while the percentage of seniors who have never used a computer decreased by 2004, the percentage of senior who have used a computer in the past, but do not use one currently increased (from 8% to 18%). Thus, only about half of the senior reported current computer or Internet access in either year.

55. About half of seniors were current computer users in 2000 and 2004. More have moved from never having used computers to having used them in the past but not currently.
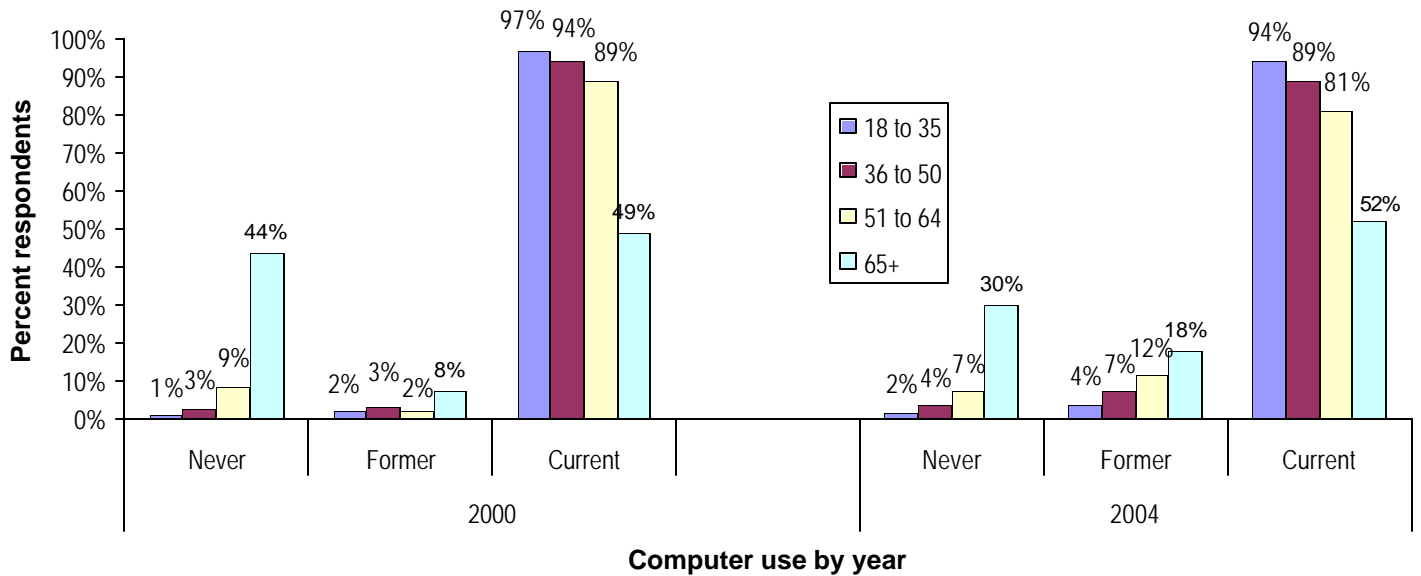
Source: 2004 Seattle IT Residential

Figure 56 shows the changing impact of education on computer use status. As with the other demographic factors typically associated with less technological access, the impact of less education is smaller in 2004 than it was in 2000 so that in 2004, 71% of those with the least education are current computer users, compared with 60% of this group in 2000.
The percentage of those in the lowest income group in 2004 to say they have never used a

56. Little change in current access among those with more than a high school education; decrease in percentage of those with less education who have never used computers and corresponding increase in percentage of current or former users
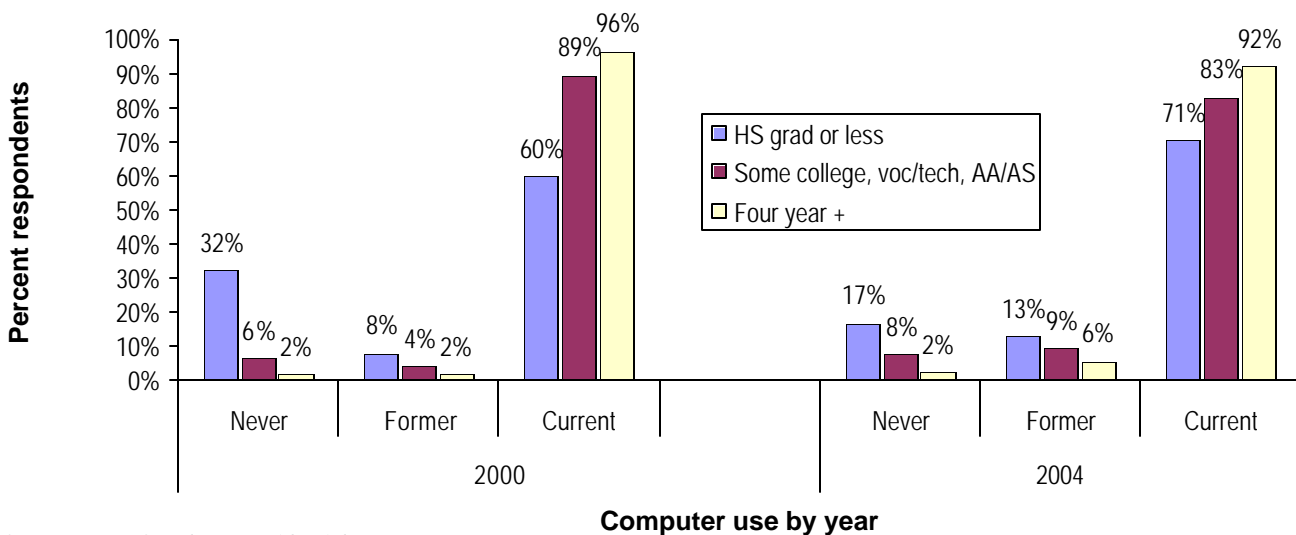
Source: 2004 Seattle IT Residential

computer was half what it was in 2000, indicating growing access. However, it is important to keep in mind that even though access seems to be in the process of equalizing, it is not yet equal. Therefore, if services become more difficult or expensive to access by phone, letter or in person, people with less education, less income and seniors will be differentially disadvantaged.

PART 4

Computer and Internet literacy

Computer users were asked to rate their overall comfort using a computer or the Internet on a five point scale, where 1 means "not at all comfortable" and 5 means "very comfortable."

57. Overall comfort level with computers or the Internet increases with income
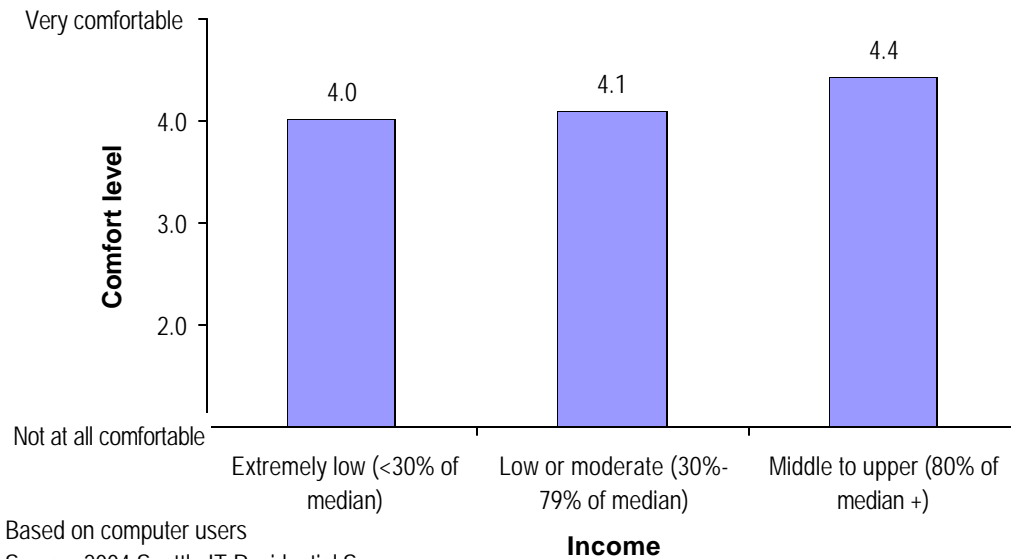
Figure 57 shows an overall high level of comfort using this technology, and that comfort increases with income. Fifty-five percent of the computer users overall said they are "very comfortable," but within the different income levels, this figure ranges from

Based on computer users
Source: 2004 Seattle IT Residential Survey

46% of those in the lowest income group to 61% of those in the highest income group.

58. The impact of income on overall comfort separately for men and women
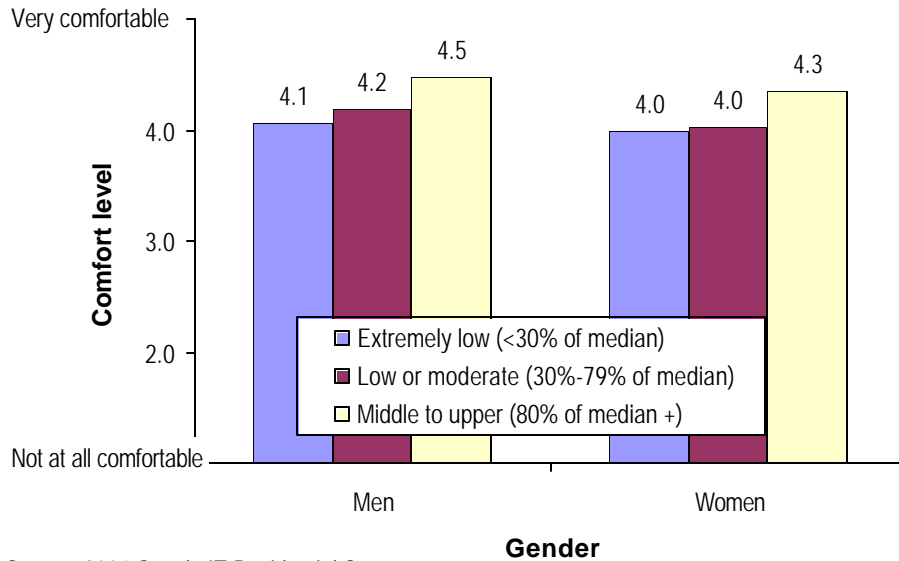
Figure 58 shows that the impact of income is fairly similar for men and women, despite the different pattern that emerges when 2000 responses are included.

Source: 2004 Seattle IT Residential Survey

Figure 59 shows that the impact of education on overall comfort with computers and the Internet is similar to that of income (Figure 57): as education increases, so does comfort with computers and the Internet.

59. Overall comfort level with computers or the Internet increases with education

Source: 2004 Seattle IT Residential Survey

60. Overall comfort level with computers or the Internet decreases with age, especially after 64

Figure 60 illustrates the effect of age on overall comfort with this technology. Recall that these ratings of comfort are based on current computer users. Only about half of the seniors in the sample identified themselves as current computer users. This figure shows
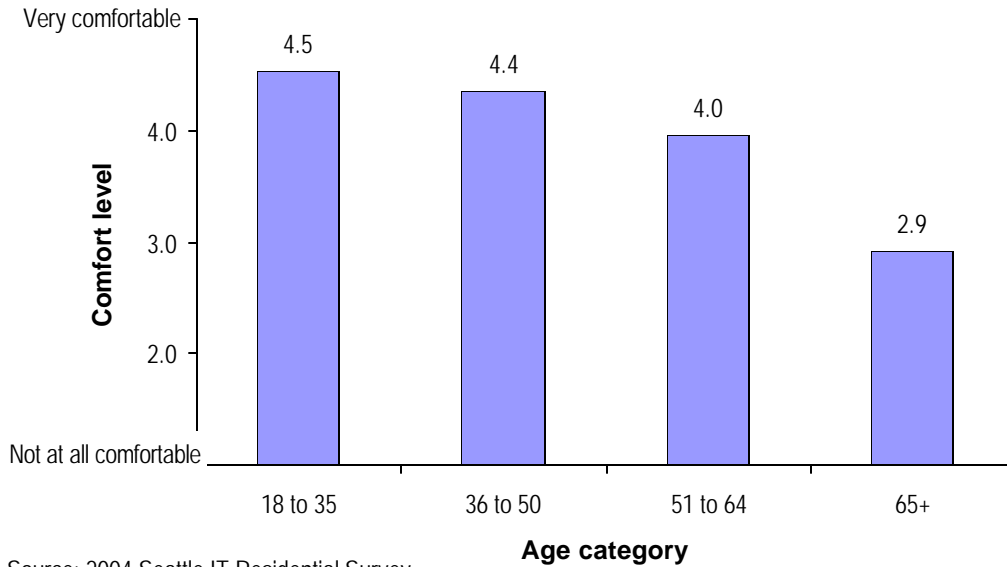
Source: 2004 Seattle IT Residential Survey

that those seniors who *are* current computer users are significantly less comfortable overall using computers or the Internet than their younger counterparts.

61. The relative discomfort with computers or the Internet reported by seniors is more striking among African American respondents and other ethnic minority groups
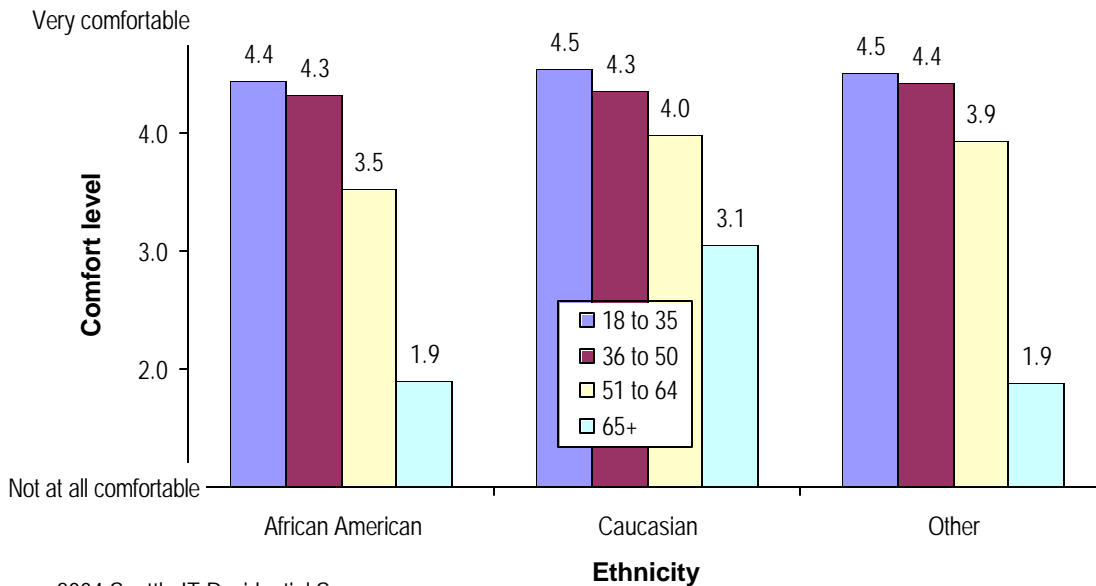
Figure 61 shows that the impact of age is most dramatic for non-Caucasian seniors.

Source: 2004 Seattle IT Residential Survey

Figure 62 shows that the age effect is mitigated by education.

Note that although seniors with a four year college degree or more continue to report less comfort than their younger counterparts with comparable education, the gap between these seniors and the others in this education category is significantly smaller than the gap in the other education categories.

62. The impact of age on overall comfort with computers or the Internet diminishes as education increases

Source: 2004 Seattle IT Residential Survey

Summarizing, earlier analyses show that older Seattleites or those with less income or education are less likely to be current computer or Internet users. Individuals in these groups are also less likely to have home computer or Internet access. This set of figures shows that those who are computer or Internet users in the same subgroups tend to be significantly less comfortable with the technology overall. Figures comparing changes from 2000 suggest that individuals in these groups are catching up in Seattle, but access and comfort are not yet equal across the subgroups.

Comfort with specific tasks

In addition to asking computer-using respondents about their overall comfort with computers and the Internet, we also asked about their comfort with specific tasks selected to represent both basic and advanced computer and Internet applications. If respondents had not done a particular task, that information was recorded. Figure 63 provides several pieces of information. The tasks that were asked about are listed on the left. The top half of the figure represents the basic tasks, the bottom half, the advanced tasks. Within the basic tasks, the top two require experience with a computer, but not the Internet. The next three require experience with the Internet. The advanced tasks are organized in the same way.

A pair of bars is associated with each task. These represent the percentage of respondents who have done this task. The top bar in each pair represents the percentage of respondents in 2000 who said they had done the task, and the bottom bar represents the 2004 respondents. This figure shows that almost all computer users in both years said they have used a word processing

program and opened and saved a file. Experience becomes less common with the advanced tasks, especially the advanced Internet tasks. So that in 2000, two-thirds of the computer-users said they had created a website, and 81% said they had set up a new Internet connection.

The other piece of information available from this figure is the change in experience since 2000. The tasks with an asterisk (*) are those for which respondents report a significant increase or decrease in experience. For example, significant increases were seen in sending and opening attachments in email, creating and sending a message using email, creating a website and setting up a new Internet connection. That is, significantly more Seattleites are familiar with advanced computer and Internet applications in 2004 than in 2000 – in general, computer-using Seattleites are growing in their computer-use expertise.

However, as with other indicators of access, these patterns are not constant across demographic groups. Looking at the individual tasks, experience with all computer or Internet tasks is lower among seniors, especially creating a website, using a spreadsheet or setting up a new Internet connection. Experience with all computer or Internet tasks is most common among respondents with more income or more education. Men were between 5% and 8% more likely to say they've had experience with each of the advanced applications as well as searching on the web (3% more likely). African American respondents were less likely to report experience with creating and sending a message with email (10% less likely), sending and opening email attachments (11% less likely), installing new software (14% less likely), searching the web (12% less likely) or using a word processor (8% less likely).

**63. Residents report using computers or the Internet for many tasks.
Significant increases in Internet tasks since 2000.**
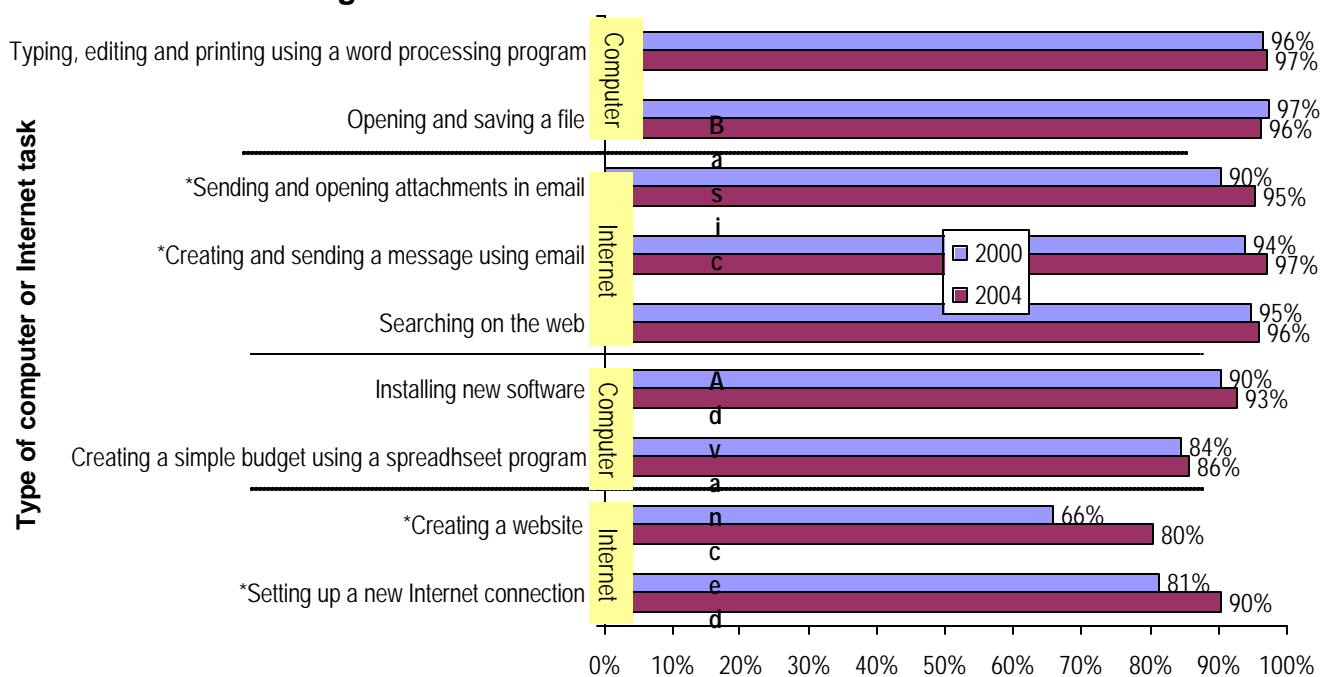
* p<.05

Source: 2004 Seattle IT Residential Survey

Figure 64 shows a different type of information. Looking at the same tasks, this figure summarizes the responses from the respondents who said they have done this task. That is, the lack of familiarity of the people who have never done the task is not represented in this figure. For those who have done each task, this figure shows that compared with 2000 respondents, 2004 respondents report greater comfort with all the tasks except opening and saving a file. These changes reached statistical significance for all basic tasks (except sending and opening attachments in email), and for creating a simple budget using a spreadsheet program. Together, these figures show that an increasing percentage of the computer-using population is becoming familiar with computer and Internet application, and that self assessed skill level is increasing among the users.

These individual tasks were combined into four summary scores: basic computer tasks, basic Internet tasks, advanced computer tasks and advanced Internet tasks. The next seven figures illustrate differences in comfort with each type of task for the different demographic groups examined.

Figure 65 has four sets of bars representing comfort level for the four different types of tasks. The three bars within each set, illustrate the comfort level of a specific demographic group. Figure 65 focuses on the education level of the respondent and shows the increase in comfort for all four types of task with increasing education. Note that three of the four labels on the horizontal axis are asterisked (*). These asterisks indicate statistical significance.

64. Residents report high levels of comfort doing basic computer and Internet tasks, and comfort in many areas has increased since 2000

* p<.05

Source: 2004 Seattle IT Residential Survey   **Percent of residents using computer/Internet for this task**
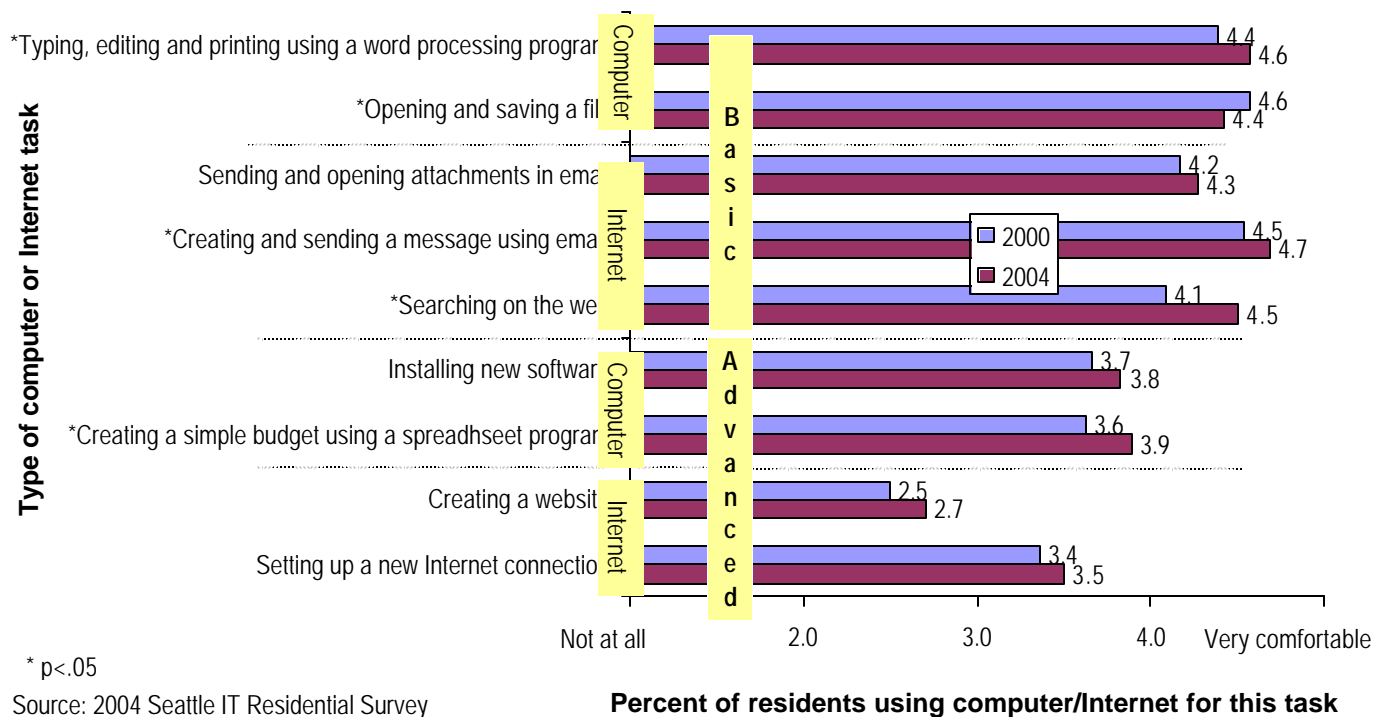
Even though the average comfort levels increases with education for all four types of tasks, the increases reached statistical significance for basic computer and Internet tasks, and advanced Internet tasks. The increase did not reach statistical significance for advanced computer tasks.

**65. Among those with experience, comfort with these* tasks
increases significantly with education**
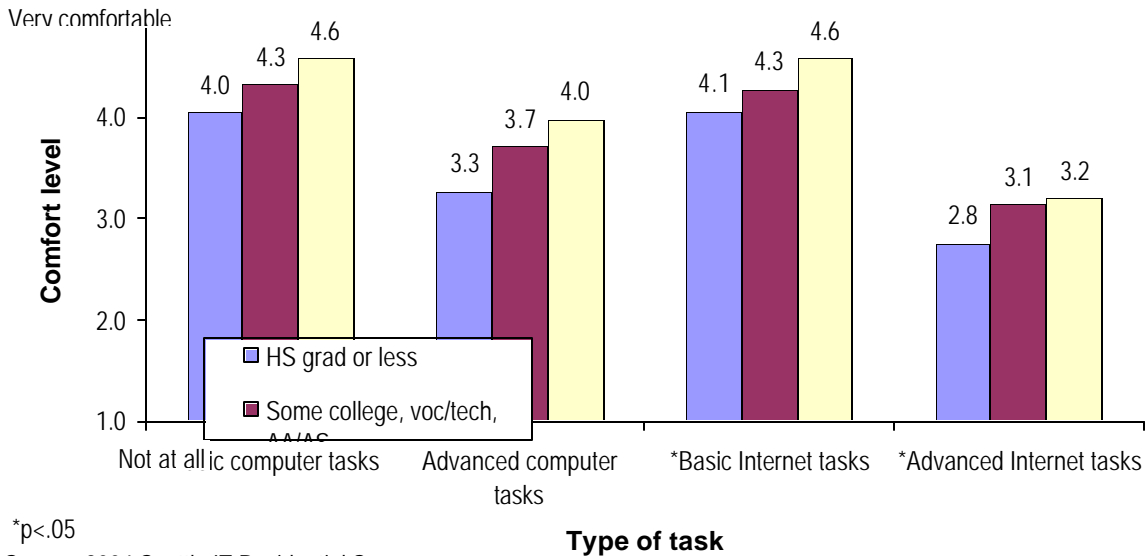
*p<.05
Source: 2004 Seattle IT Residential Survey

Figure 66 shows similar results for the different income groups. The average comfort ratings increased with income for all types of tasks and these differences reached statistical significance for basic computer and Internet tasks. The differences seen in the advanced tasks did not reach significance.

66. Among those with experience, comfort with basic tasks increases significantly with income

*p<.05
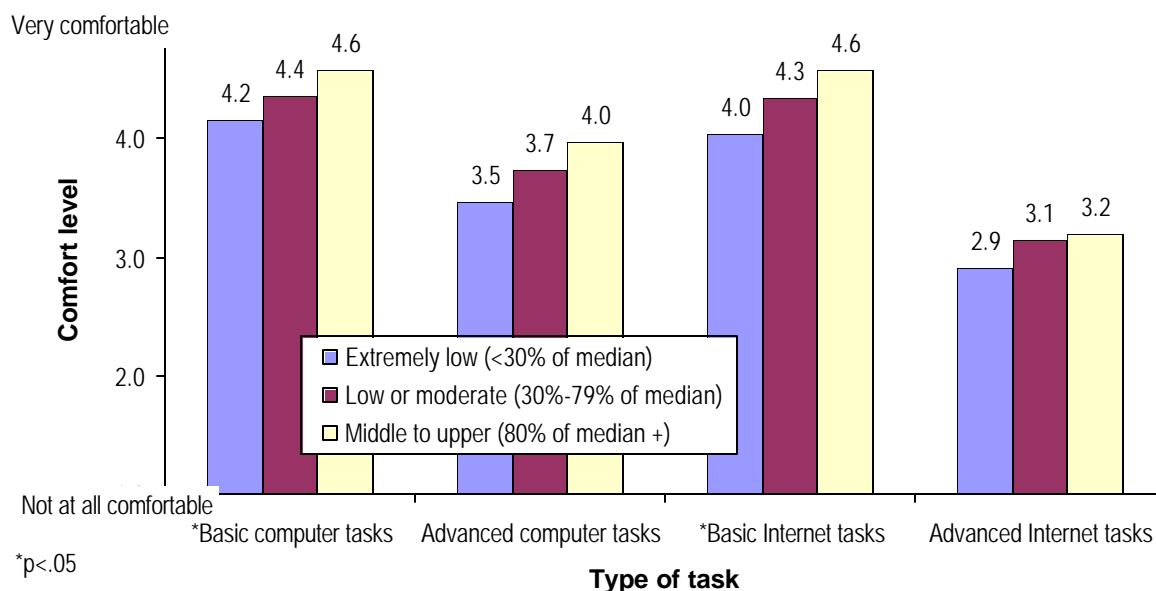
Source: 2004 Seattle IT Residential Survey

67. Income has little effect on comfort with basic Internet tasks for those 35 and younger
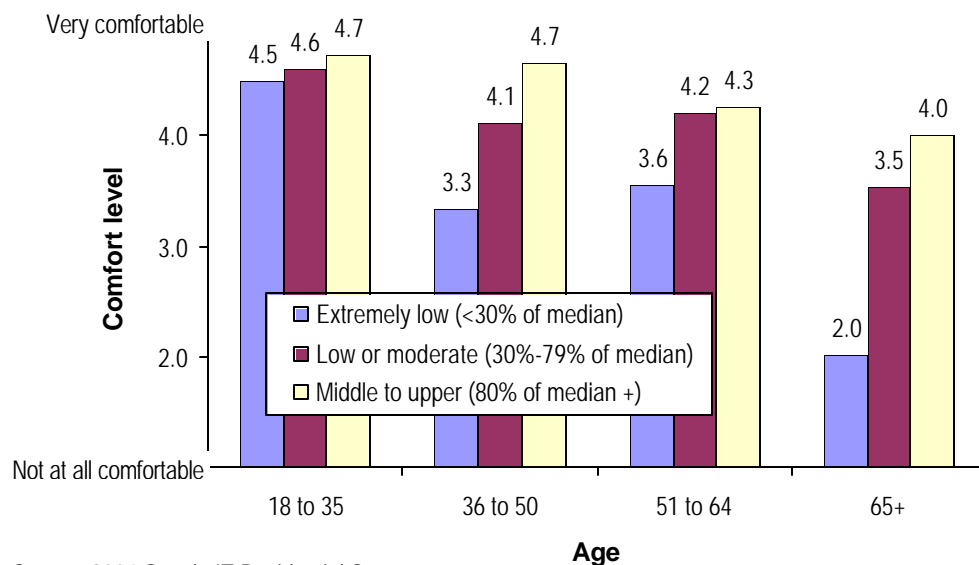
Source: 2004 Seattle IT Residential Survey

Figure 67 shows that the effect of income on comfort with the basic Internet tasks is not consistent across the age groups. Specifically, for those 35 and younger, income seems largely unrelated to income while it has a dramatic impact among those 65 and older.

68. Income has less effect on comfort with basic Internet tasks at higher education levels

Very comfortable

Comfort level

	HS grad or less	Some college, voc/tech, AA/AS	Four year +
Extremely low (<30% of median)	3.5	4.1	4.3
Low or moderate (30%-79% of median)	4.1	4.3	4.5
Middle to upper (80% of median +)	4.2	4.4	4.7

4.0

3.0

2.0

Not at all comfortable

■ Extremely low (<30% of median)
■ Low or moderate (30%-79% of median)
□ Middle to upper (80% of median +)
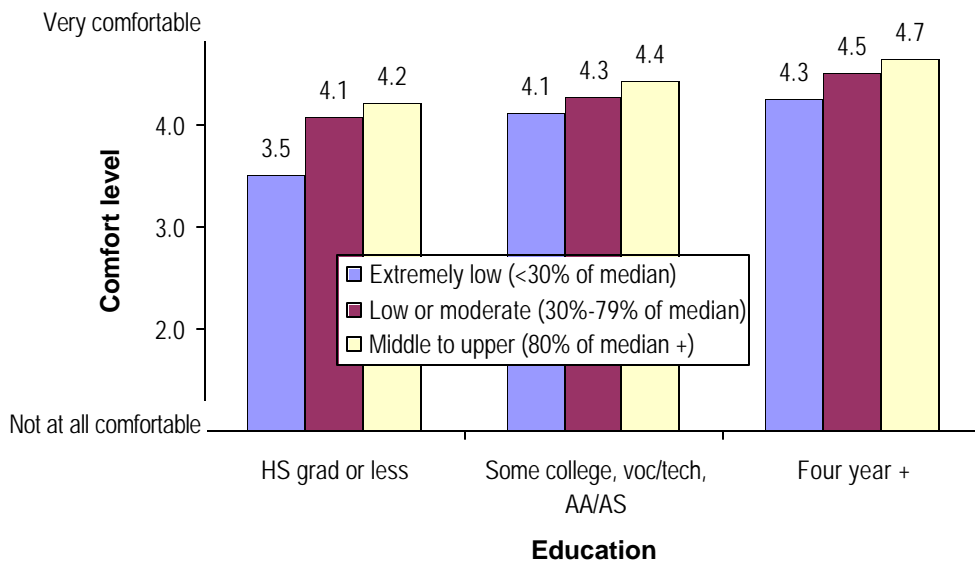
Education

Source: 2004 Seattle IT Residential Survey

Figure 68 shows another group where the impact of income is mitigated. For those with more education, the effect of less income on comfort level with basic Internet tasks is reduced, while income has the greatest effect on comfort with basic Internet tasks for those with the least education.

69. Among those with experience, men report significantly more comfort with advanced computer tasks than women

Very

Comfort level

	Basic computer tasks	*Advanced computer tasks	Basic Internet tasks	Advanced Internet tasks
Men	4.5	4.0	4.5	3.3
Women	4.4	3.6	4.4	2.9

4.0

3.0

2.0

Not at all comfortable

■ Men
■ Women

Type of task

*p<.05
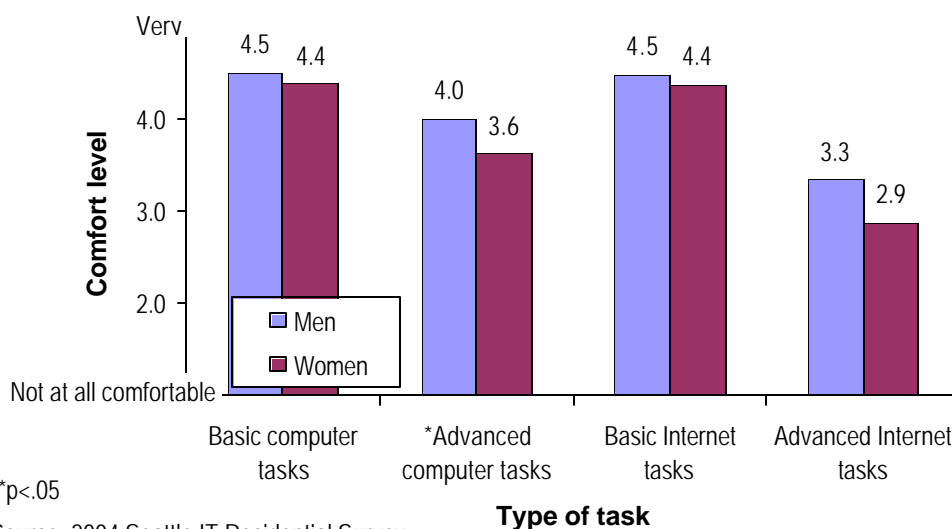
Source: 2004 Seattle IT Residential Survey

Figure 69 shows that men report being more comfortable with advanced computer tasks than do women. The same pattern is observed for the other types of tasks, but they did not reach statistical significance.

70. The gap between men and women in comfort with advanced computer tasks is greater among older respondents

Figure 70 shows that the gender gap in comfort with advanced computer tasks is evident in each age category, but is more pronounced among respondents aged 51 and older.
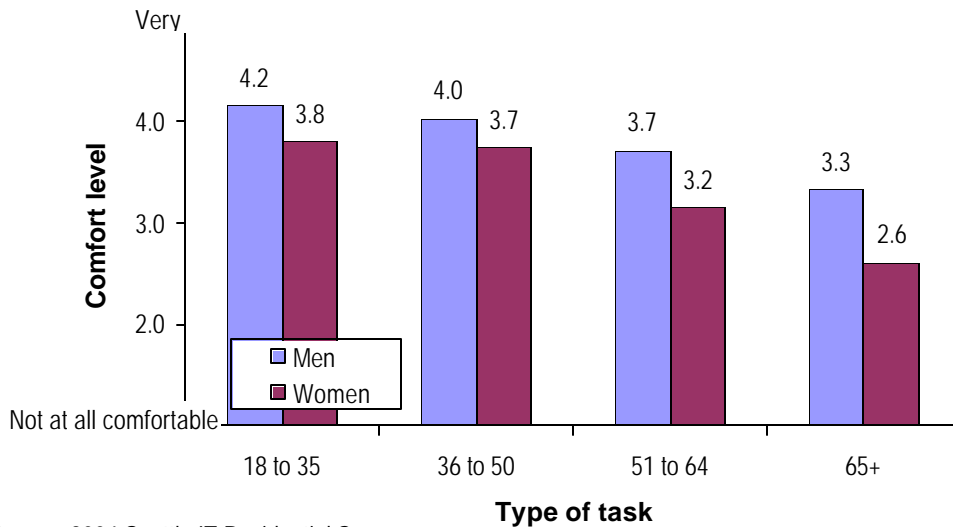
Source: 2004 Seattle IT Residential Survey

Figure 71 shows the levels of comfort with the different types of task for respondents belonging to different ethnic groups. This figure shows a lower level of comfort reported by African American respondents for each of the four types of task, a difference that reached statistical significance for basic Internet tasks.

71. Among those with experience, African American respondents report less comfort with basic Internet tasks than respondents of other ethnicities
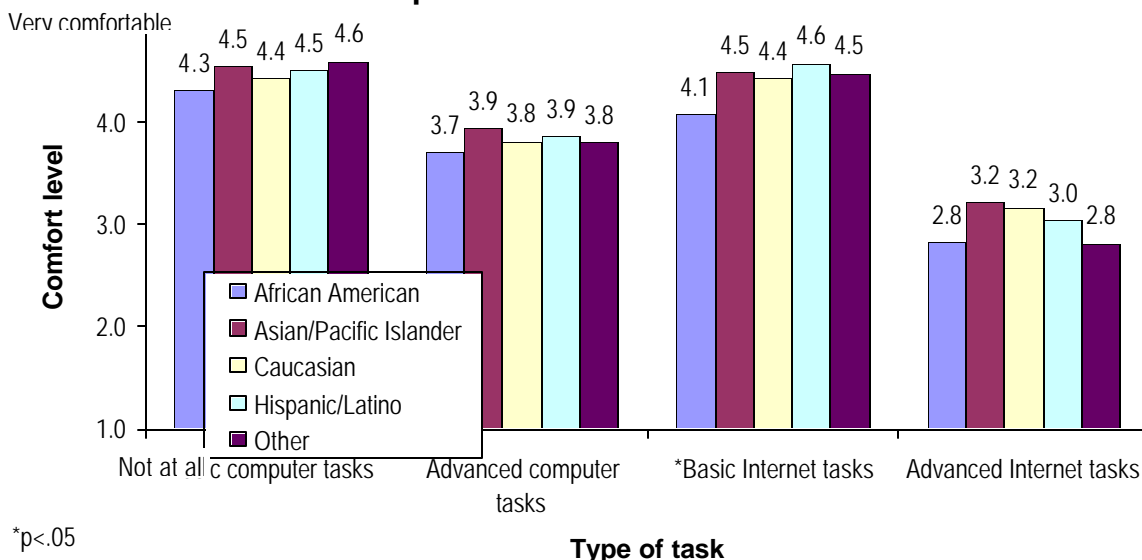
*p<.05
Source: 2004 Seattle IT Residential Survey

PART 5

Hours using a computer per week

Respondents were asked a series of questions about their computer access. Figure 50, repeated here for convenience, shows that Seattleites have computer or Internet access at a variety of locations.

50. More Seattlites have home computers in 2004 than in 2000, but gains at other access points are not significant

*p<.05

Source: 2004 Seattle IT Residential Survey

Percent with access at this location
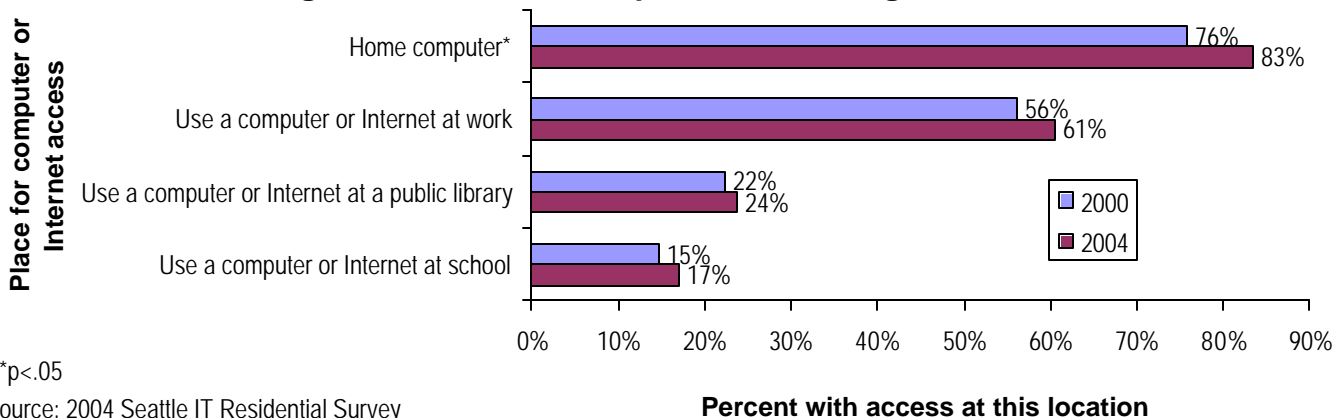
Respondents were also asked to estimate the average number of hours per day (converted into hours per week for analysis) they use computers at each location. Similar questions were asked in 2000 and analysis was conducted to examine changes in the amount of time Seattleites are spending on computers at these locations.

72. Seattlites spend more hours per week on computers in 2004 than in 2000, specifically at work

*p<.05

Source: 2004 Seattle IT Residential Survey

Hours per week at this location
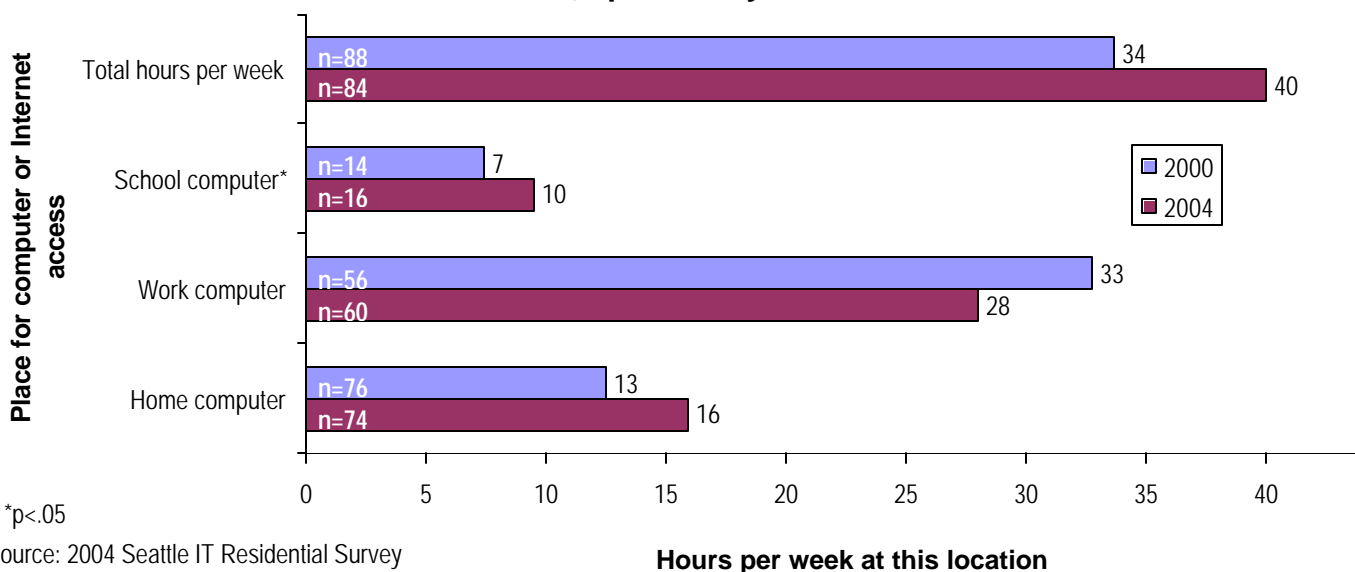
Figure 72[1] illustrates average hours per week using a computer at each location in 2000 and 2004. When comparison are made between number of hours in 2000 vs. 2004 without taking other factors into account (income, education, age, ethnicity and gender), respondents in 2004 report spending more hours using computers overall and at home, and fewer hours using computers at work. Taking the other factors into account eliminates the effect of year except for hours at school. Respondents who use computers in 2004 reported significantly more hours on a school computer than respondents in 2000.

Additional analysis focusing on 2004 reveals that hours per week on a work computer decreases with age from an average of about 29 hours for those 50 and younger, 25 hours per week for those between 51 and 64, to a low of about 16 hours for those 65 and older. Recall that these averages are based on those who use computers at work. Not only do fewer seniors use computers at work, those that do, use them for fewer hours per week than their younger colleagues. Total hour per week using a computer is also lower for older respondents, ranging from 46 hours per week for those 35 and younger down to 16 hours per week for those 65 and older.

Hour per week using a computer at work also increases with income, from an average of 22 hours per week for those with less than middle income to an average of 32 for those with a middle income or more.

Figure 73 illustrates a complicated finding about total hours using a computer per week. This analysis takes into account all the computer users, regardless of where they use them.

73. Hours per week on computers or the Internet depend on the respondent's gender and ethnicity
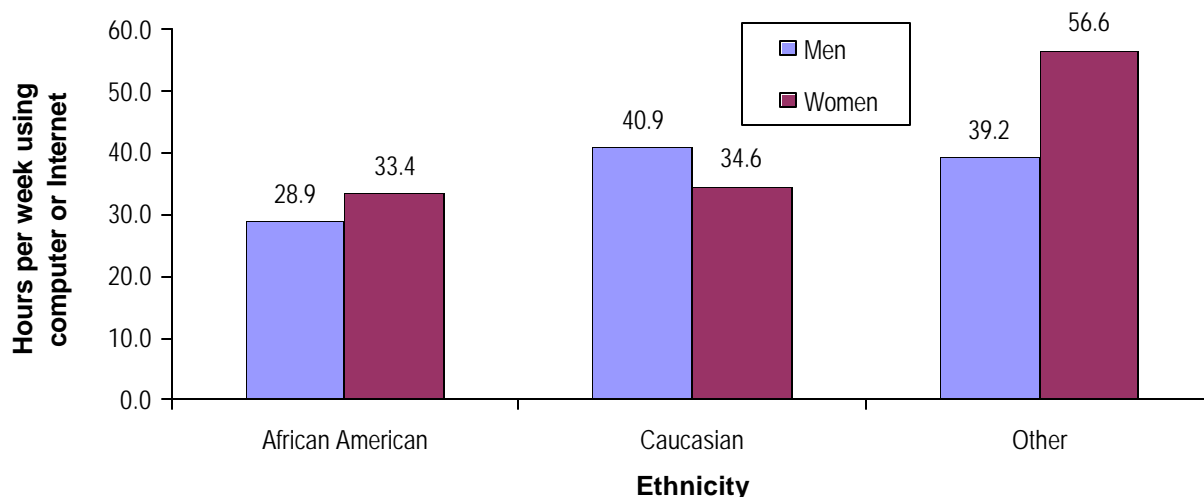
Source: 2004 Seattle IT Residential Survey

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[1] Note that the average total number of hours is not the sum of the averages at each location. This is because the average number of hours at each location is reported only for those with access at that location. For example, if the 246 individuals who indicated that they do not use a computer at work had been included in the average hours on a computer at work, that average would have been considerably lower (an average of about 20 hours).

Figure 73 shows that differences in the amount of time spent on computers by men vs. women is different for different ethnicities. Among Caucasians, men report somewhat more hours of computer use than do women. Among other ethnicities, the opposite pattern holds. This figure also shows that African American computer-users use computers for fewer hours than non-Caucasian computer-users of other ethnicities, with Caucasian computer-users falling between.

How computer are used

Computer users were read a list of activities for which they might use a computer or the Internet and were asked to say which they use. After completing the list, they were then asked to identify the one or two uses that are the most important to them. Figure 74 illustrates the percentage of computer users saying they use computers for each activity. Note that the percentages in this figure are based on the 850 computer users.

74. How computer-using Seattlites use their access

Computer, Internet or email uses	Percent
Keep in touch with friends and family	92%
Research prices and products	85%
Purchase products or services	82%
Get news	81%
Do your work	80%
Hobbies, sports or entertainment	76%
Education purposes, including homework	71%
Get health or medical information	69%
Share photos, music or video over the Internet	58%
Manage finances	56%
Look for a job or job training	54%
Find legal or consumer rights information	52%
Find social service information and assistance	50%
Contribute to a website, bulletin board or online group	37%
Play video games over the Internet	28%

Source: 2004 Seattle IT Residential Survey

Percent using the computer/Internet or email this way

Overall, computer users endorsed an average of 9.7 uses – more for people with more income or education and fewer for older people. Computer users almost universally use computers to keep in touch with friends and family. Many Seattleites also use computers to research prices and products and to shop. More than one-third of the computer users report contributing to a website,

bulletin board or online group. More than one-fourth say they play video games over the Internet.

Several demographic differences emerged in how computers are used. Interestingly, none were evident in "Contribute to a website, bulletin board or online group," or "Find social service information and assistance." Eight of these activities showed a pattern of increasing usage with increasing income:

- Keep in touch with friends and family
- Hobbies, sports or entertainment
- Get news
- Do your work
- Research prices and products
- Purchase products or services
- Share photos, music or video over the Internet
- Manage finances.

Younger computer users were more likely to report using the computers for ten of these activities, with the prevalence of use decreasing with age. These activities were:

- Keep in touch with friends and family
- Hobbies, sports or entertainment
- Look for a job or job training
- Education purposes, including homework
- Do your work
- Research prices and products
- Purchase products or services
- Share photos, music or video over the Internet

The pattern for two of the 10 activities was slightly different. For these, "Get health or medical information" and "Get news", about half of those aged 65 years and older endorsed those uses, compared with 70% or more of the respondents in the other age groups.

After taking into account the other demographic factors, education influenced three of the activities: people with more education are more likely to say they use computers to look for health or medical information and to do their work, and they are less likely to say they use computers to find a job or job training.

African American computer users were less likely to purchase products or services online (69% vs. more than 80% of the other groups) and more likely than Caucasian computer users to play video games online (46% vs. 22%). Men are also more likely than women to play video games on line (34% vs. 21%).

Current email use was computed based on responses to several items: using the computer or Internet to keep in touch with family or friends, preferring to access government services on the web or via email, or indicating comfort creating and sending an email message or sending/opening an email attachment. Based on these items, *86% of Seattleites – and 97% of*

Seattle's computer users – are current email users. As with access to computers and the Internet in general, access to email increases with income (from 82% to 96%) and education (from 76% to 95%) and decreases with age (from 97% to 63%).

Figure 75 shows which uses Seattle's computer users considered most important.

75. The most important uses of computers, the Internet or email
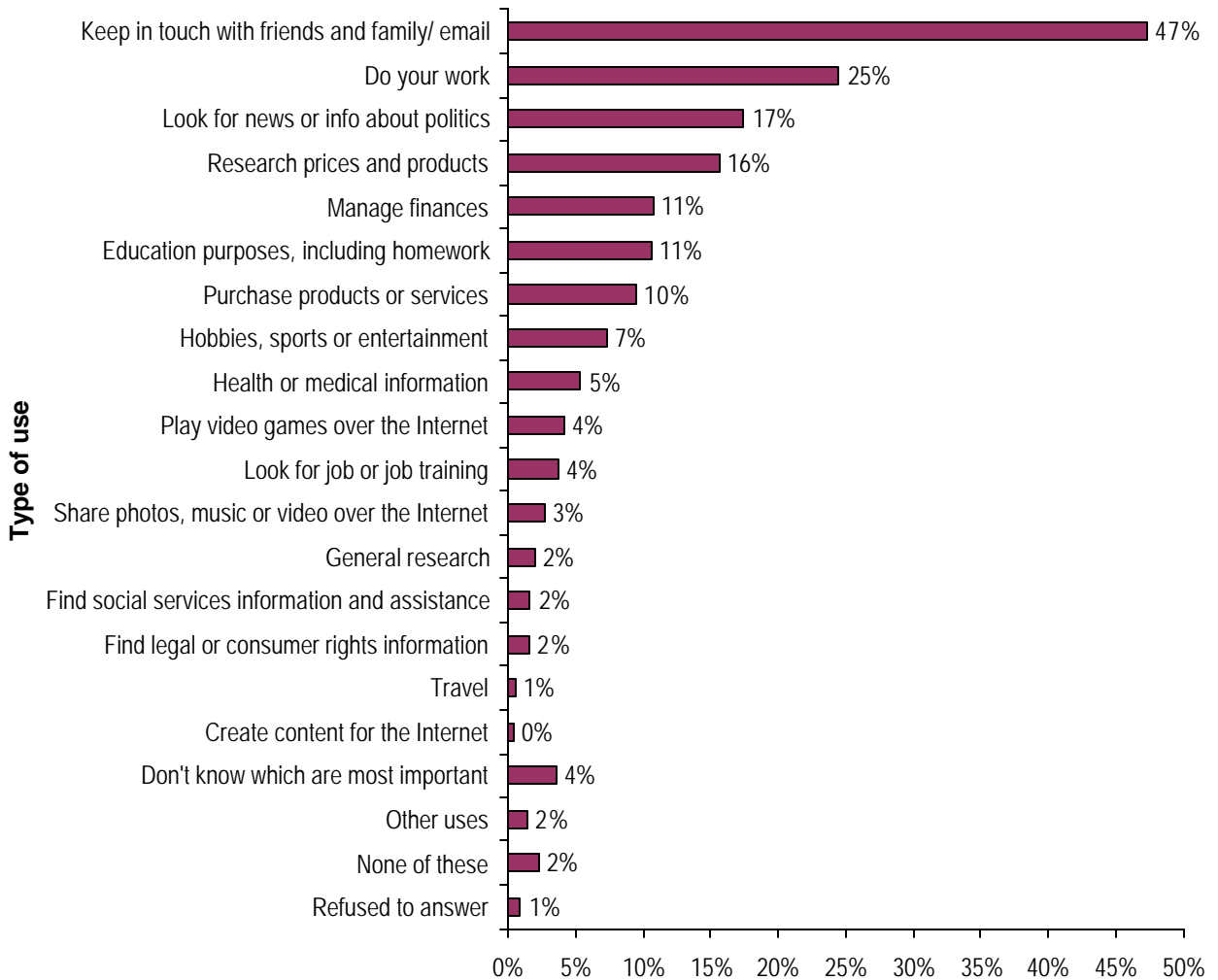
Source: 2004 Seattle IT Residential Survey

Percent naming this use as one of most important

Nearly half the computer users identify keeping in touch with friends and family as one of the most important uses of the computer. This endorsement increased from a low of 38% of those with no more than a high school education, to 40% of those with some college or technical school up to 52% of those with a four-year degree or more. The identification of hobbies, sports or entertainment decreased from about 10% among those with less than a four-year degree to 5% of those with one.

Figure 76 explores the amount of time spent on computers by the ways that people use them. This figure indicates that people who do certain activities on the computer tend to be higher users of computers overall. This may be associated with the requirements of that particular type of activity (e.g., time required to write online list answers, post photos, or read complicated legal information). Or it could indicate that people who contribute to a website also spend a lot of time using the computer for other activities, such as doing their job. In that case, that individual's total hours would be represented in both bars. Therefore, only the most dramatic differences are likely to be apparent in this figure. Specifically, people who contribute to websites, bulletin board or an online group, regardless of what other ways they may use computers, tend to use a computer for more hours per week than people who don't contribute to a website, bulletin board or online group. Computer users who share photos, music or video over the Internet, people who seek legal, consumer rights, or social service information, and online gamers, regardless of the other ways they may use computers, are also heavy users.

76. People who contribute to a website, bulletin board or online group spend the most hours per week using computers

Type of use	Hours per week on computer
Contribute to a website, bulletin board or online group	52
Share photos, music or video over the Internet	47
Find legal or consumer rights information	47
Play video games over the Internet	46
Find social service information and assistance	46
Get news	43
Hobbies, sports or entertainment	43
Manage finances	42
Do your work	40
Purchase products or services	39
Look for a job or job training	39
Education purposes, including homework	39
Get health or medical information	39
Research prices and products	38
Keep in touch with friends and family	38

Source: 2004 Seattle IT Residential Survey

After being asked about how they use computers, these respondents were asked about their general satisfaction with the content of the Internet for their needs. Figure 77 summarizes their responses.

77. Most people are somewhat or very satisfied with the content of the Internet for their needs

Source: 2004 Seattle IT Residential Survey

About half of the computer users say they are very satisfied with the content of the

Internet for their needs and another 37% percent said they are somewhat satisfied. These responses were consistent across the demographic categories of computer users, providing no support for the notion that the relative lack of Internet use by some subgroups can be explained by lack of content appropriate to these groups.

Human relationship to technology

All respondents were asked a series of questions about issues that might affect their confidence in using computers or the Internet. These questions focused on issues such as their perception of the security of financial transactions, the use of personal information and the risk of SPAM (unsolicited advertisements) or viruses sent over the Internet.

Overall, about half (54%) of Seattleites agree that companies and organizations that they can visit on the Internet use personal information appropriately, similar to the response in 2000 (51% agree). Significantly fewer of the seniors agree with this statement in both years (37%). Also, women are more likely to agree with this statement than men (56% vs. 50%), especially those with no more than a high school education (55% vs. 40%).

Not as many of Seattle's residents (44%) think that there are adequate precautions for children to access the web safely, about the same as in 2000 (41%). This response was fairly consistent across demographic subgroups.

78. Respondents are moderately confident that financial transactions on the Internet are secure and private
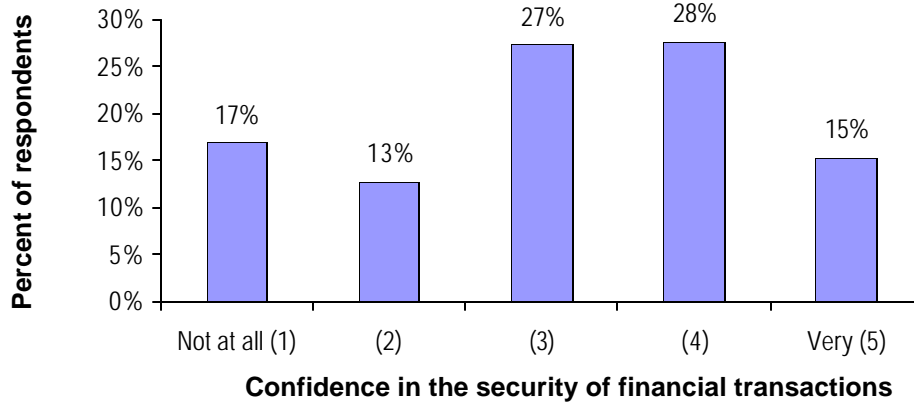
Figure 78 shows that only 15% of Seattleites are "very confident" that financial transactions on the Internet are secure and private. About a quarter (28%) are just shy of "very confident". Figures 79 to 82 shows that confidence in the security of financial transactions over the Internet is different for different demographic subgroups. Figure 79 shows that African American respondents are less confident than respondents in the other ethnic groups.

Source: 2004 Seattle IT Residential   (Base: All respondents)
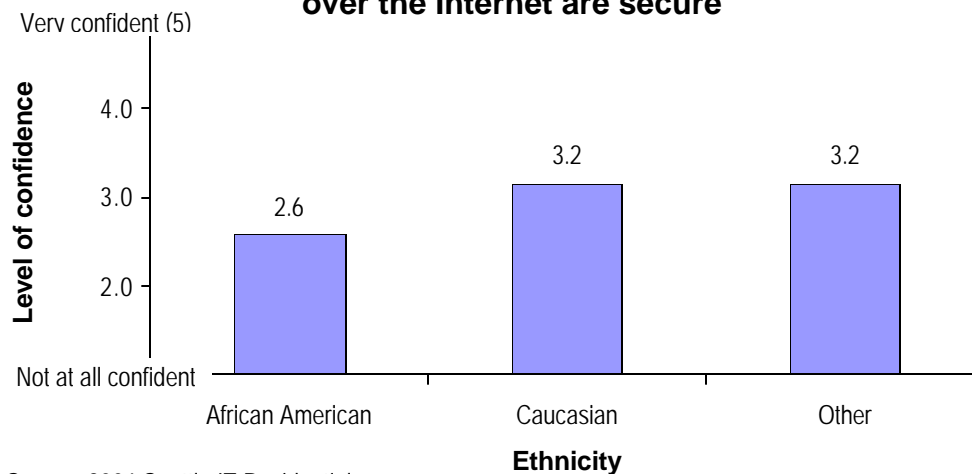
79. African American respondents are significantly less confident that financial transactions over the Internet are secure

Source: 2004 Seattle IT Residential
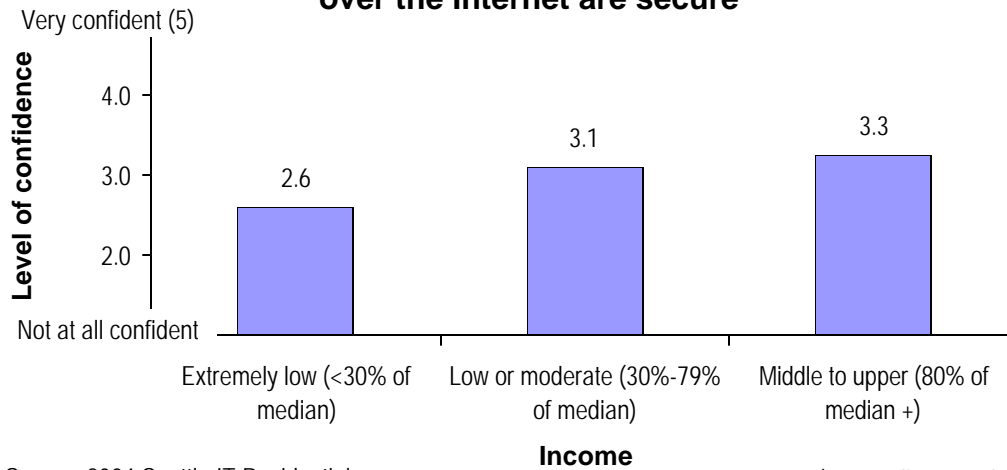
Figure 80 shows that those with less income are also less confident, and Figure 81 shows similar results for education.

80. The lowest income respondents are significantly less confident that financial transactions over the Internet are secure

Very confident (5)

Level of confidence

4.0

3.0 — 2.6   3.1   3.3

2.0

Not at all confident

| Extremely low (<30% of median) | Low or moderate (30%-79% of median) | Middle to upper (80% of median +) |

Income

Source: 2004 Seattle IT Residential   (Base: All respondents)

81. Confidence in the security of financial transactions over the Internet increases with education

Very confident (5)

Level of confidence

4.0

3.0 —   3.0   3.3
        2.8

2.0

Not at all confident (1)

| HS grad or less | Some college, voc/tech, AA/AS | Four year + |

Education
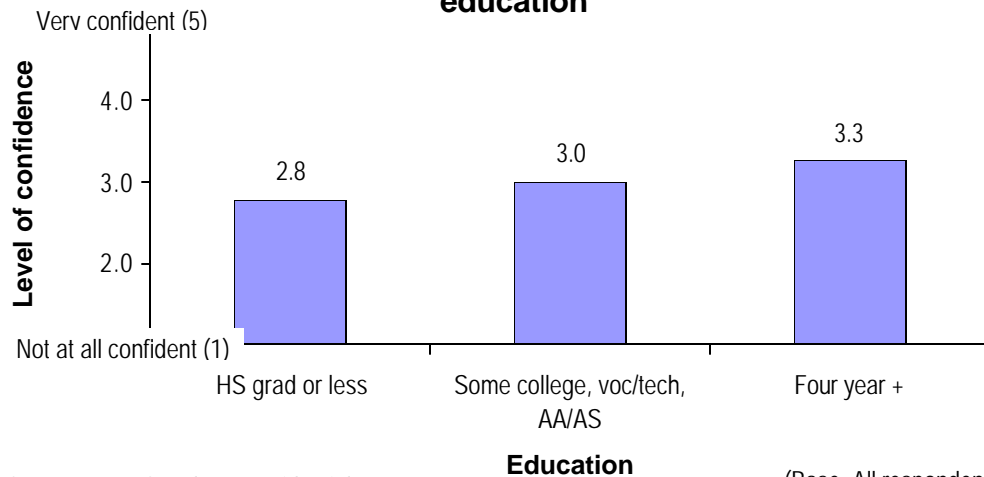
Source: 2004 Seattle IT Residential   (Base: All respondents)

82. Confidence in the security of financial transactions over the Internet decreases with age
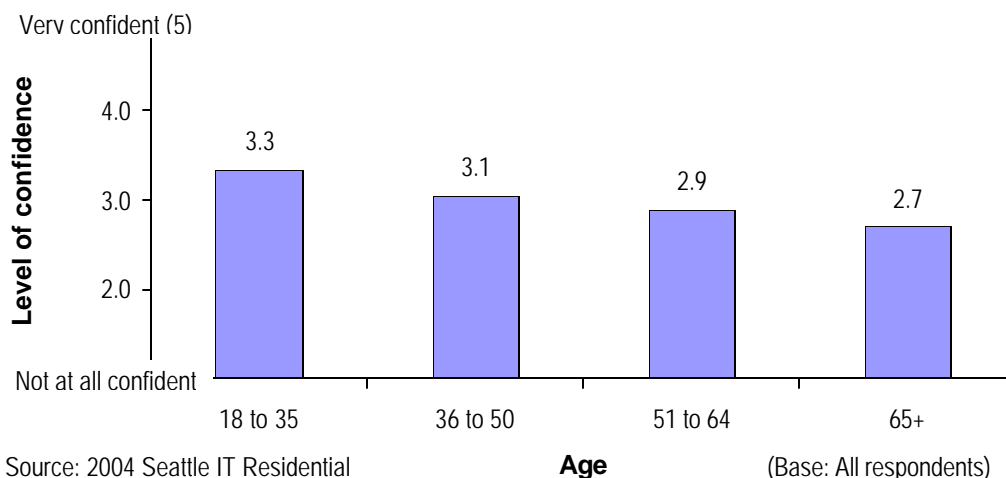
Figure 82 shows that confidence in the security of financial transactions over the Internet decreases steadily with age.

Verv confident (5)

Level of confidence

| | 3.3 | 3.1 | 2.9 | 2.7 |

4.0

3.0

2.0

Not at all confident

18 to 35   36 to 50   51 to 64   65+

Source: 2004 Seattle IT Residential   **Age**   (Base: All respondents)

83. Seattleites are concerned about viruses sent over the Internet and damaging computer files
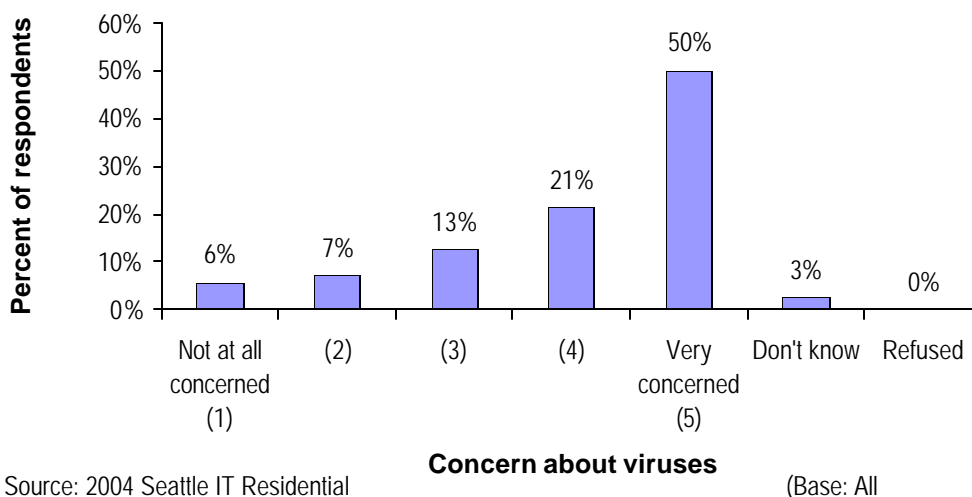
Figure 83 shows that Seattleites are very concerned about viruses sent over the Internet. Half of the respondents endorsed the highest level of concern. Residents between 36 and 64 are more concerned, with 59% of these respondents

Percent of respondents

60%
50%   50%
40%
30%
20%   21%
10%   6%   7%   13%   3%   0%

0%

Not at all concerned (1)   (2)   (3)   (4)   Very concerned (5)   Don't know   Refused

Concern about viruses

Source: 2004 Seattle IT Residential   (Base: All

saying they are "very concerned" compared with only 43% of those younger than 36 and 48% of those older than 64. The relatively low level of concern expressed by the seniors may be due to their relative lack of use of computer and the Internet. The lower level of concern among the younger respondents is puzzling. One speculation is that many younger computer users may be more comfortable with virus protection and my not know of a time when computer viruses were not prevalent and so it is accepted as a risk of computer use, whereas the responses of older users may reflect the process of adjustment to a world with this type of risk.

84. Seattleites are concerned about unsolicited advertisements sent over the Internet
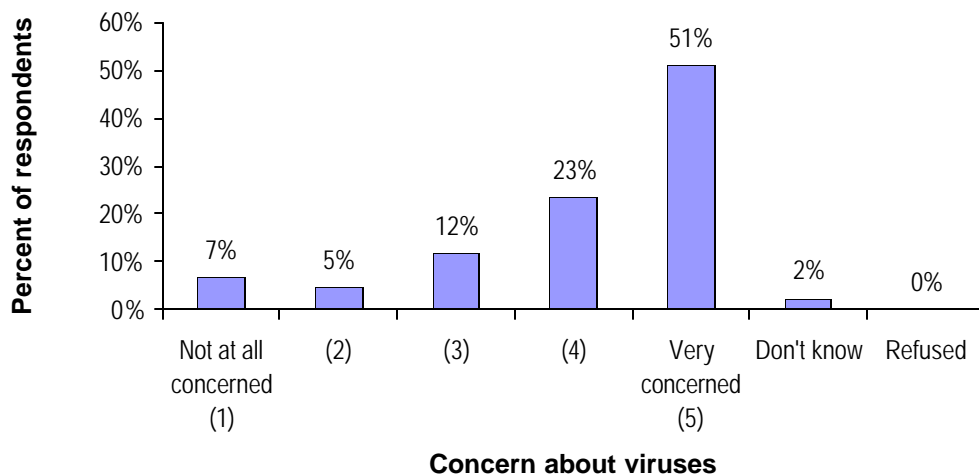
Figure 84 shows a high level of concern with SPAM, again with half of the respondents saying they are "very concerned" about it. The same pattern with age emerged: respondents between 36 and 64 are more concerned with 60% saying they are "very concerned," compared with 45% of those 35 and younger and 48% of those 65 and older. The same speculation can be made about this type of intrusion. It may be considered the norm among younger users but not among users who began to use computers before SPAM became prevalent. SPAM is more of a concern among those with more income: 55% of those with a middle income or more said they are very concerned about this compared with 45% of those with less income.

Source: 2004 Seattle IT Residential   (Base: All

ISP service and cost

Respondents with home Internet access were asked about their satisfaction with the customer service from their Internet service provider, as well as the cost of the service. Respondents subscribing to Internet access through Millennium and Comcast gave similar satisfaction ratings and are reported together in the following figures. Figure 85 shows that overall, respondents are satisfied with the customer service they receive from their Internet provider, and the level of satisfaction is the same, regardless of the type of access.

85. Satisfaction with customer service from Internet provider high regardless of type of access
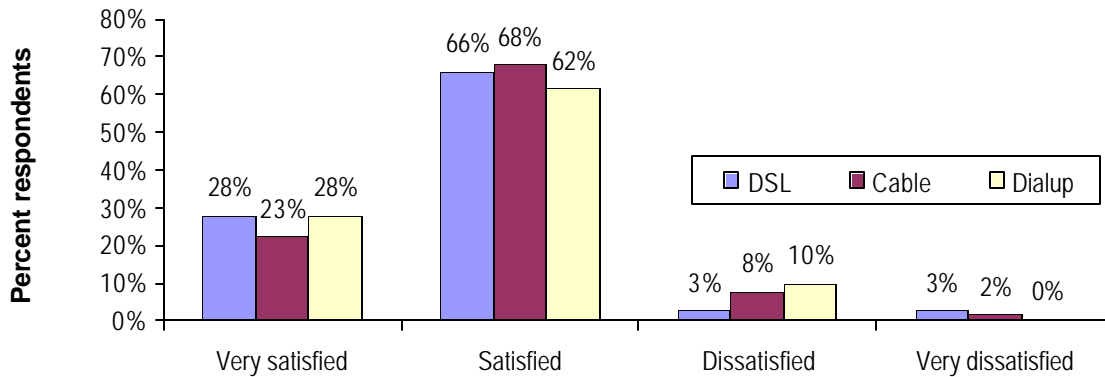
Source: 2004 Seattle IT Residential

Figure 86 shows that respondents with different types of Internet access are not equally satisfied with its cost. Respondents with cable Internet access are significantly more likely to say their service is too expensive, while those with dial up access are more likely to say their service is process about right, or even a bargain.

86. Residents with high speed Internet access, especially cable access, find their Internet access rates too expensive
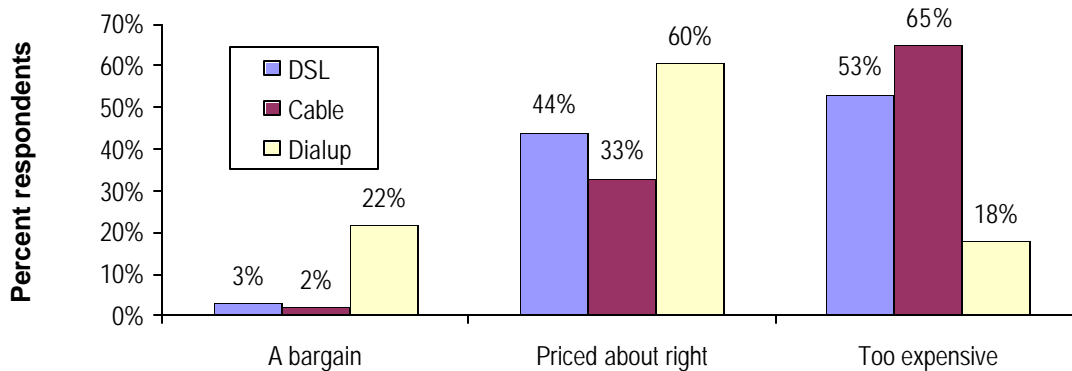
Source: 2004 Seattle IT Residential Survey

PART 6

Attitudes about computer and Internet access

All respondents were asked about their opinions about the importance of computer and Internet access for adults and for children. Nearly two-thirds (64%) said they think computer and Internet access for adults is very important and about half (52%) said they think it is very important for children. Figure 87 illustrates the overall responses to both questions.

87. Access to computer and the Internet seen as very important overall -- but less so for children than for adults
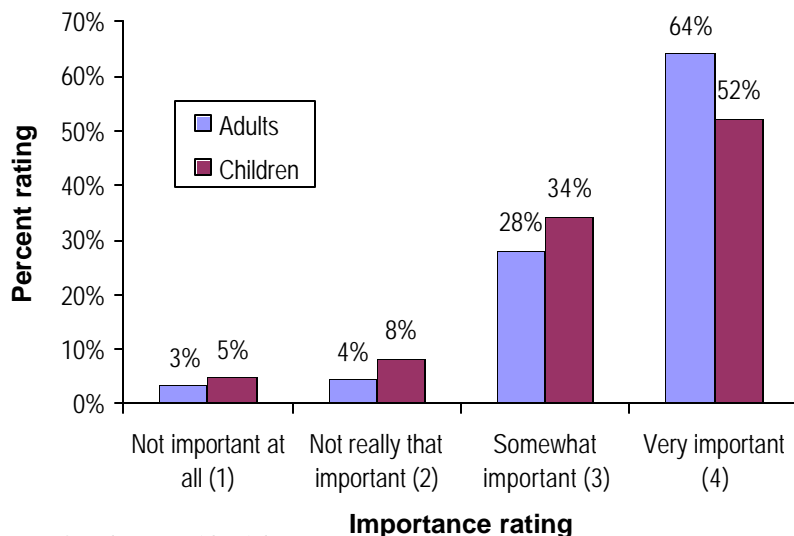
Source: 2004 Seattle IT Residential

Lower importance rating given children's access is curious, raising the question of whether residents think children's access to computers is relatively less important compared with access for adults – a hypothesis that runs contrary to the public's demand for computer training in schools, or whether it is depressed by concern about potential dangers to children posed by unsupervised Internet access. To explore these questions, three groups were compared on their ratings of the importance of computer and Internet access for children and adults:

- Individuals who agree that there are adequate precautions for children to access the web safely (n=317)
- Individuals who do not agree that there are adequate precautions (n=418), and
- Individuals who said they don't know or it depends (n=235).

Figure 88 shows that those who say that there are *not* adequate precautions rate the importance of children's access significantly lower than do people who believe that precautions *are* adequate or who don't know. This lends some support to the hypothesis that concerns about the potential dangers of unsupervised Internet access for children may have depressed the importance ratings for these respondents. No differences in the ratings of importance for adults' access were found between these groups.

88. People who think that precautions for children's to access the web are not adequate gave lower importance ratings to children's access to computers and the Internet
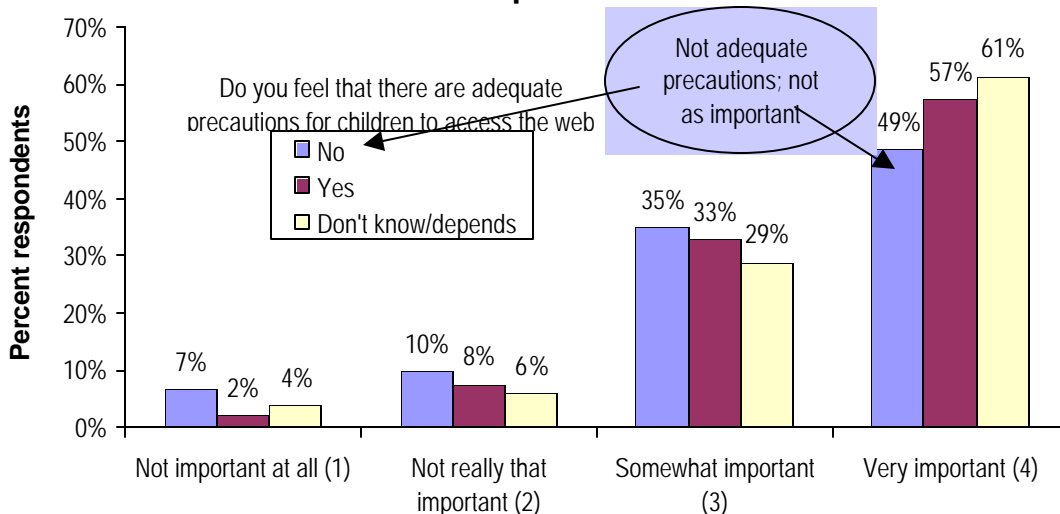
Source: 2004 Seattle IT Residential

Surprisingly, a dramatic difference in the rating of importance of access for *adults* was found in respondents of different ages, and a much smaller difference in the importance rating for children's access – a difference that did not reach statistical significance when the analysis considered the other demographic factors simultaneously. Figure 89 shows the decreased importance assigned to adults' access by seniors compared to younger respondents.

89. Seniors see computer access for adults as less important than do younger respondents
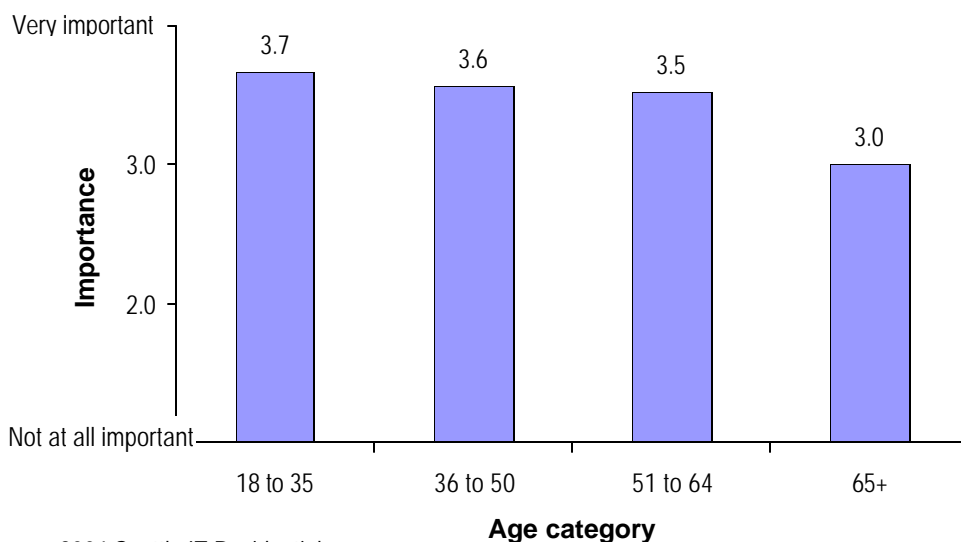
Source: 2004 Seattle IT Residential

Those without home computers rated adults' access as significantly less important than did those with home computers. One in five respondents without home computers said that adults' access to computer or the Internet is not really that important or not at all important, compared to one in 20 of those with a home computer. Figure 90 shows that this effect of having a home computer is significantly stronger for men than for women.

90. Overall, respondents with home computers see access for adults as more important than respondents without home computers. This difference is smaller for women than men

Source: 2004 Seattle IT Residential
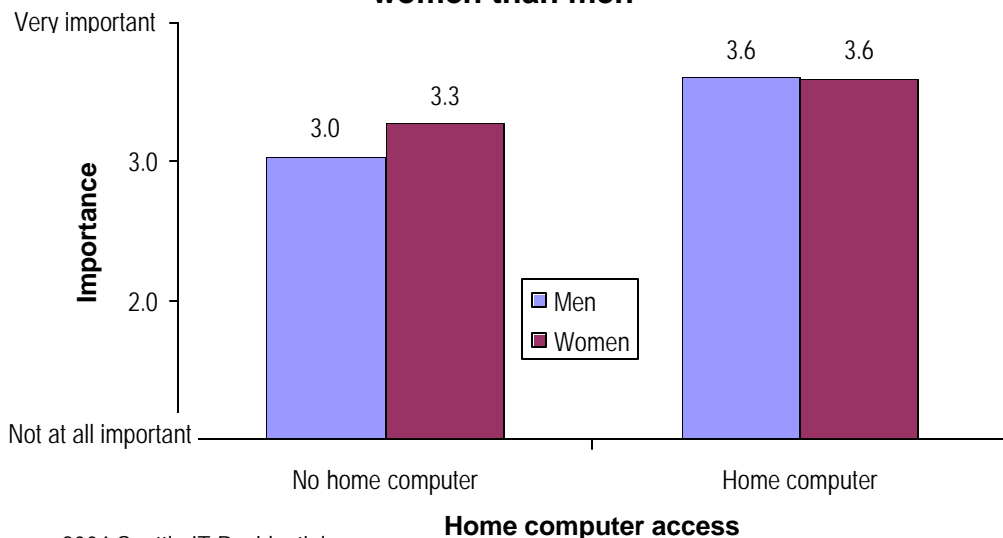
This might indicate that men who believe computer and Internet access is important for adults are more likely than women to own one, leaving disproportionately more men who don't believe they are important in the group of non computer owners, 42% of whom were men in this survey. Fifty-two percent of those *with* home computers are men.

Similarly, analysis of the importance of children's access revealed that the importance is rated more highly by those with a home computer (17% of those without a home computer say children's access is not really

that important or not at all important, compared with 12% of those with a home computer). Figure 91 shows this overall result, and illustrates the interaction between income and home computer access where the difference between computer owners and non-owners is significantly greater at the lowest income level.

91. Overall, respondents with home computers see access for children as more important than respondents without home computers. This is especially true at lower income levels
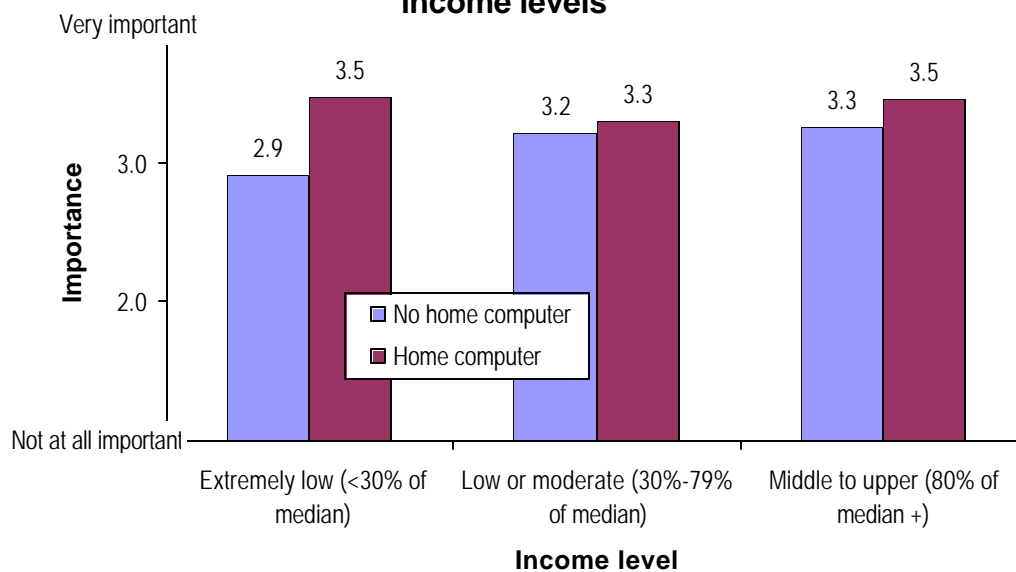
Source: 2004 Seattle IT Residential Survey

Community involvement

Respondents were asked about their involvement in different groups and organizations. They were asked to indicate wither the currently participate in a neighborhood association or community group, a school association, a sports club or cultural organization, or a religious group. In addition, respondents were invited to name any other type of group they participate in. Overall, nearly three-fourths (71%) of the respondents say they belong to at least one group or organization and 42% belong to more than one. About three-fourths (77%) of these groups use Internet communication – email or a web page to communicate with their members. Figure 92 illustrates the rate of participation in each type of organization, as well as the range of other groups that were mentioned.

92. Respondents indicate that a substantial percentage participate in specific types of groups and in addition, they volunteer a wide range of other groups or organizations
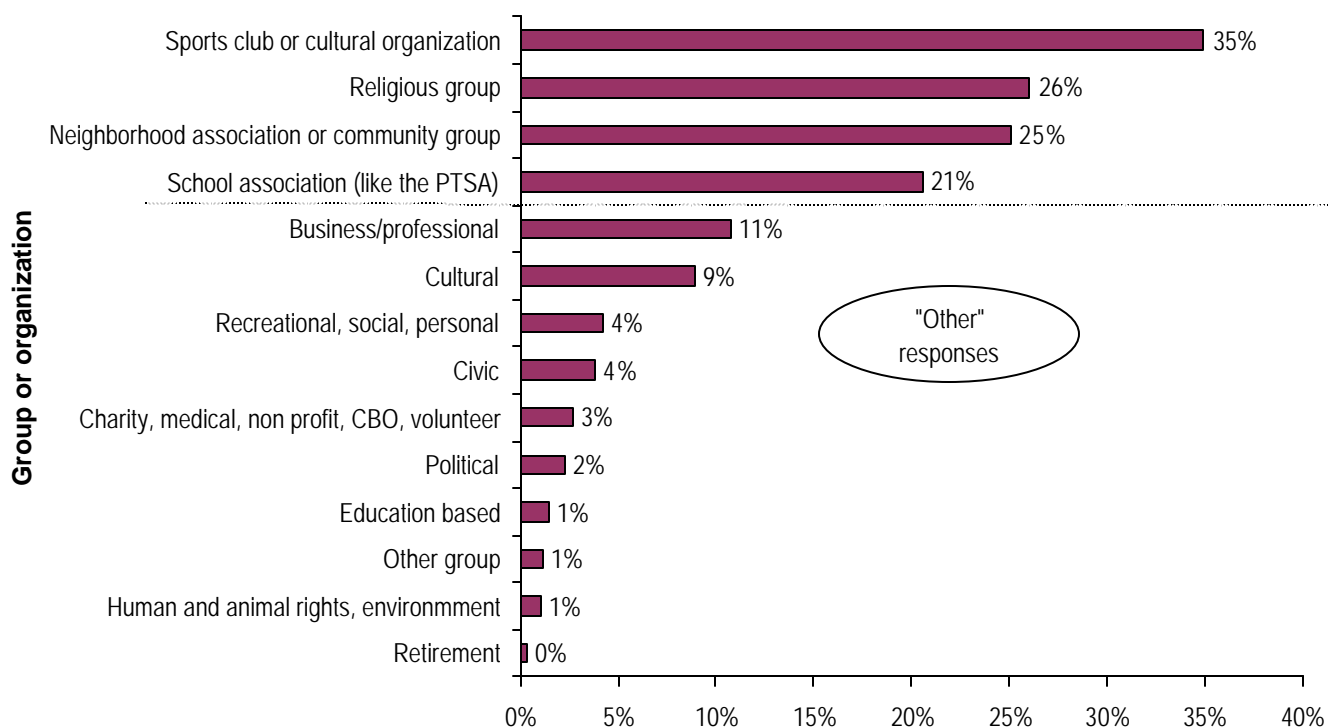
Source: 2004 Seattle IT Residential

Percent participating in group or organization

Analysis showed that there were no demographic differences in participation in sports clubs or neighborhood associations. Seniors were least likely to participate in school associations (6%) and those between ages 36 and 50 were the most likely (31%). African American respondents were more likely to say they participate in a religious group (47%) than respondents of other ethnicities (24%). Those with more income, more education, more adults in the home, kids under 18 at home, or a home computer are more likely to participate in one or more of these groups.

Comparisons with 2000 suggest an increase in community participation (up from 62% in 2000) and an increase in the percentage of these groups using the Internet to communicate with members (73% reported that the organization uses email and 55% reported a web site).

Seattle's community organizations are largely, but not entirely, wired. Figure 93 shows the percentage of each type of group or organization that respondents say use the Internet (email or a web page) to communicate with its members. The rates range from a high of 95% for the "other" organizations, most commonly a business or professional organization, to 66% of the religious organization.

93. Many groups and organization make use of the Internet for communication with participants

Source: 2004 Seattle IT Residential

Percent saying the organization used email or has a web page
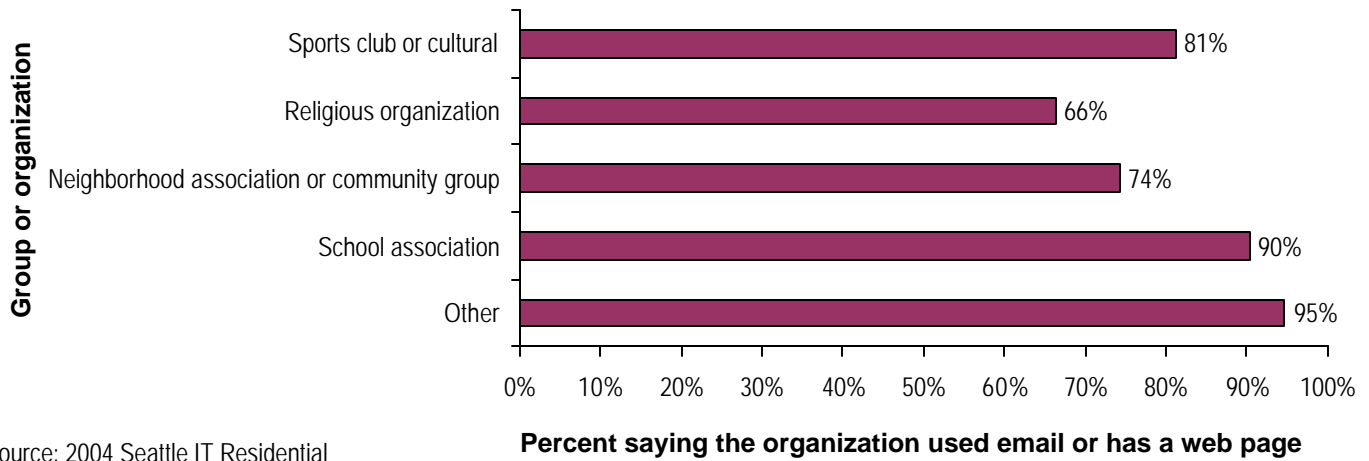
Civic Participation and e-government

Respondents were asked about their civic participation, including how they most prefer to access government services and how effective they think the Internet is as a way to communicate their opinions or to otherwise communication with government officials. Figure 94 shows that the majority of Seattleites prefer the web or email, but a sizeable minority still prefer to use the telephone (17%), a letter (12%) or to come by in person (12%).

94. Most respondents want to access government services on the web or via email. A sizeable percentage still want to be able to telephone, write or come in person.
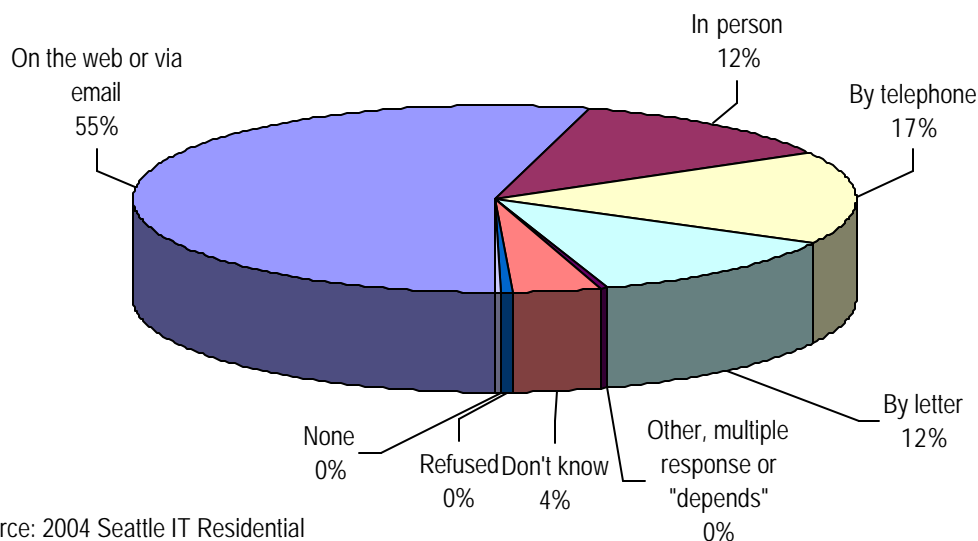
Source: 2004 Seattle IT Residential

Interestingly, the preferred mode of accessing services does not completely depend on the convenience of Internet access. Nearly one fourth (27%) of those *without* home Internet access said they prefer to access services on the web or via email, while about one-third of those with home Internet access preferred some lower tech mode of communication.

Several demographic differences emerged in preferred mode of accessing government services. Although preferring online access overall, African American respondents are more likely than other ethnicities to say they prefer to use written communication (19%). People who work full time were the most likely to say they prefer accessing services on the web or via email (63%) and those who are not working were more likely than other groups to say they prefer to access services in person (17%) or by mail (20%). Younger people are more likely to say they prefer to use email or the web to access services (66%) and seniors are more likely to prefer the telephone (31%) or the mail (24%). Those with more education prefer the web or email (64%), as do those with more income (68%). Although more of those with the least education prefer online access than any other single mode (38%), more in this group prefers to use the mail (23%) or to come by in person (19%) compared with other groups.

When asked how effective they think email and the Internet are as ways to communicate opinions about issues that affect them in their communities, residents were overall moderately positive. Figure 95 shows that about a quarter (24%) said they think it is a very effective way to communicate their opinions. About the same percentage (26%) gave a somewhat less positive, but still positive response. Only one in five were decidedly negative. Attitudes in 2004 were similar to those expressed by residents in 2000.

95. How effective are email and the Internet as ways to communicate your opinions about issues that affect you in your community?
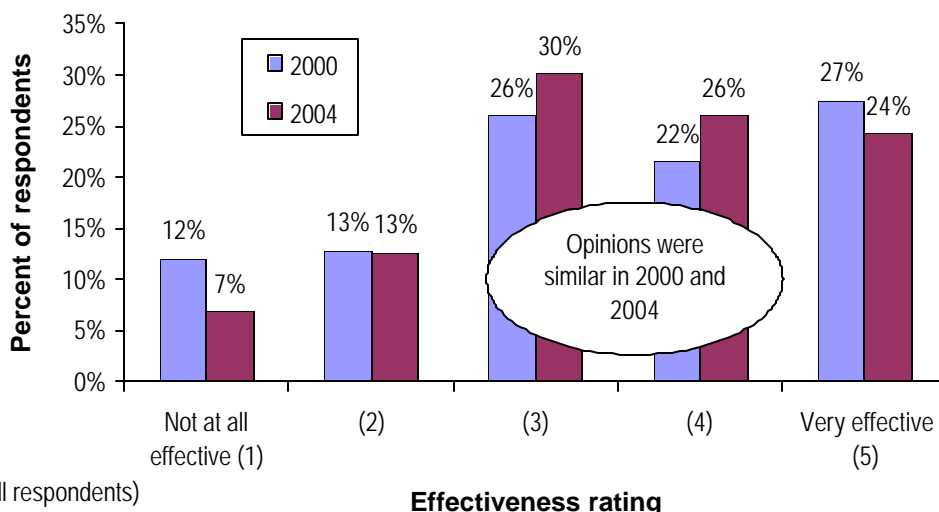
(Base: All respondents)
Source: 2004 Seattle IT Residential

Perception of the effectiveness of the Internet to communication opinions increases with education. Four percent of those with at least a four-year college degree said they think it is not at all effective, compared with 15% of those with no more than a high school education. Eight percent of those with some college said they thought it is not at all effective as a way to communicate their opinions. Seniors are also less likely to find the Internet effective for communicating opinions about community issues. About one in five seniors (19%) said they find the Internet not at all effective for this purpose, compared with 6% of the other age groups.

When asked about the effectiveness of email and the Internet as ways to communicate with elected officials, respondents were less positive. Figure 96 shows that respondents were more positive about this use of the Internet and email in 2004 than they were in 2000 when one respondent in five said that email and the Internet is not at all effective as a way to communicate with elected official. In 2004, half that many gave that opinion. Nevertheless, even in 2004 about a quarter of the respondents (26%) gave a strongly or moderately negative response to this question, while 41% gave a strongly or moderately positive response.

Those who have used the Internet to get information from a government entity gave higher ratings for both questions.

96. How effective are email and the Internet as ways to communicate with elected officials?
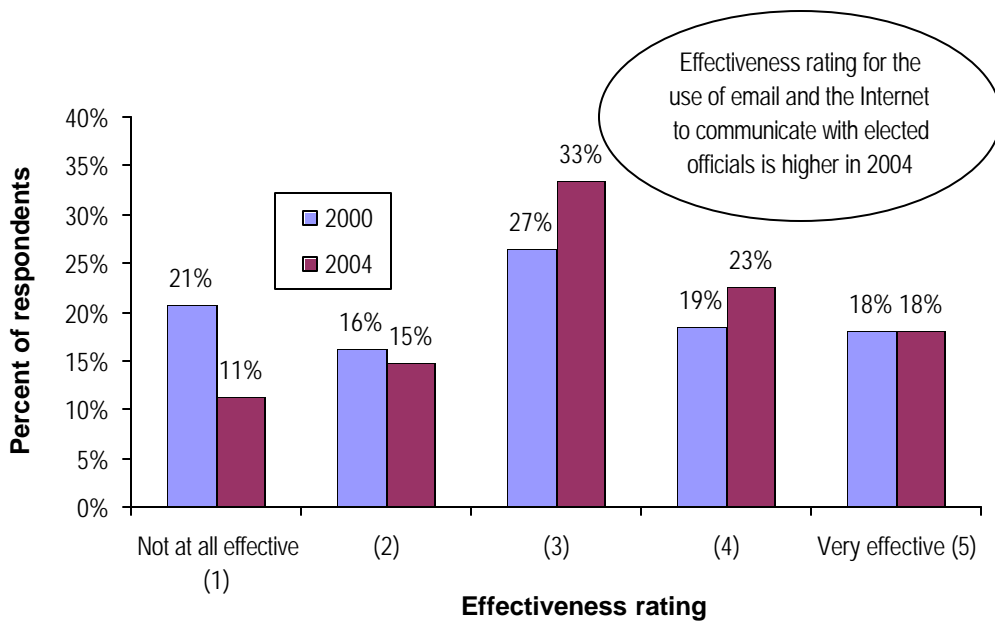
Source: 2004 Seattle IT Residential Survey

Respondents were asked if they have used the Internet to obtain information from a city, county, state or federal government. About three respondents in five (63%) say that they have, up slightly from 60% in 2000. Several demographic differences emerged about this use of the Internet, illustrated in Figure 97.

This figure shows utilization trends similar to those reported earlier: those with more education and more income are more likely to report this use, older respondents and African American respondents are less likely. The decreased likelihood among seniors is most pronounced for senior women. Only 14% of the senior women say they have used the Internet to obtain information from a government entity, compared with three times that rate (42%) among the senior men.

97. Demographic groups differ in their use of the Internet to obtain information from a government entity
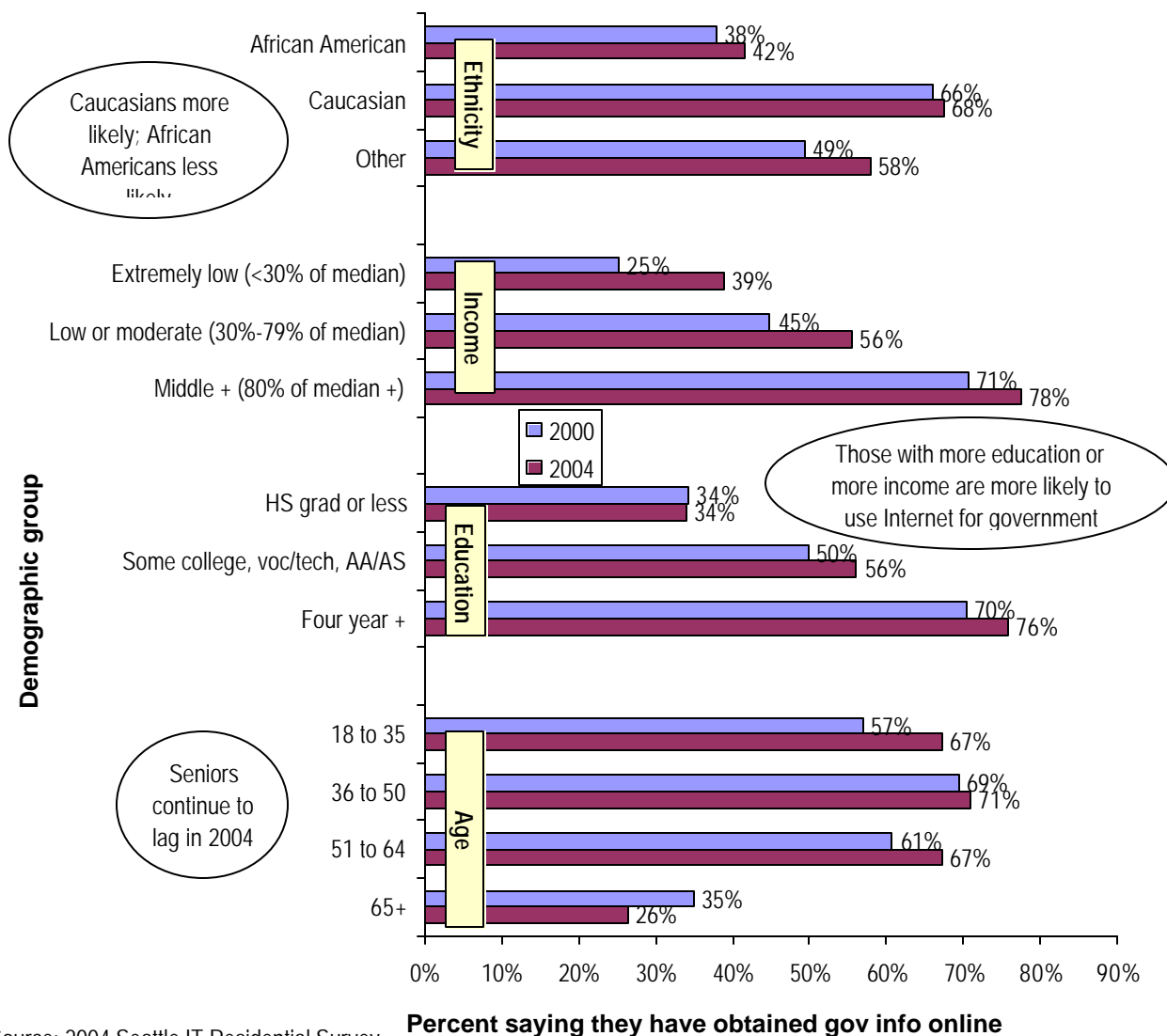
Source: 2004 Seattle IT Residential Survey

Next, respondents were asked whether they had visited the Seattle.gov web site. Half of the
respondents in 2004 said that they have, up from one third of the respondents in 2000. Figure 98
shows that this increase is evident only for those under 65.

**98. Significant increase since 2000 in percentage of
respondents who have visited the City of Seattle website,
except among oldest respondents**
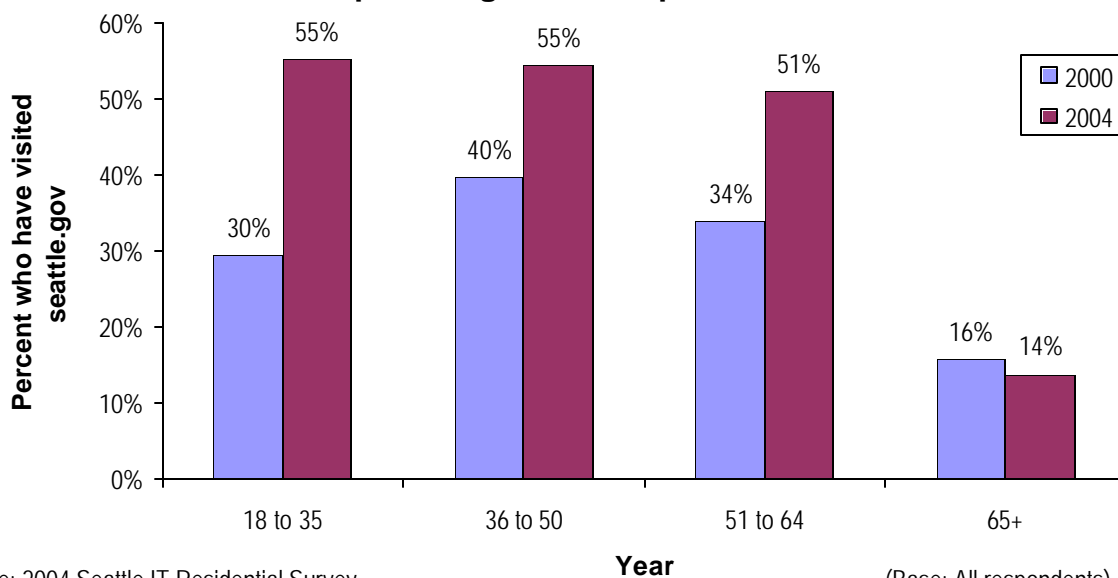
Source: 2004 Seattle IT Residential Survey   (Base: All respondents)

When all the demographic factors are considered simultaneously (a factorial analysis), only age
and education emerge as statistically significant predictors of the use of this web site:
predictably, use increases with education and decreases with age. Even though income is not
statistically significant in the factorial analysis when it is analyzed alone, the familiar pattern
emerges in which those with more income are more likely to use this web site. One way of
understanding this apparent paradox is that after age and education have accounted for as much
as they can in the use of the Seattle.gov web site, not enough is left for ethnicity or income to
explain.

Respondents who had visited the Seattle.gov website were read a list of services that were or
could be offered online and were asked which they would use. In addition, they were allowed to
identify other services not on the list that they would like to have available online. Figure 99
summarizes the responses to these questions. Each bar represents the percentage of residents who
had visited the website that said they would use the service.

99. Seattle.gov visitors want to get and give information online. Most frequently, they want to be able to find maps, check events or apply for a license or permit online

Possible Seattle.gov services

Service	Percent
Find maps	86%
Check event or meeting schedule	81%
Apply for license or permit	80%
Report a problem	70%
Receive email notices on selected topics	68%
Reserve a room, picnic site, ball field or other city facility	67%
Contact city official to express opinion	65%
Vote on issues	60%
Pay city bills, fees, or taxes	58%
See more pictures and videos on the site	49%
Comment at public hearings online	46%
Local information	1%
Transportation, construction information	1%
Event schedule	1%
Real estate	1%
Public records and laws or ordinances	1%
Employment information	1%
Pay tickets	0%
Other feature	2%
None	3%
Don't know	0%

Source: 2004 Seattle IT Residential Survey

Percent saying they would use this service

There were few differences in who would select each service across demographic group. Seniors – remember, these are the seniors who have already visited the web site – were the least likely to say they'd pay city bills, fees or taxes online (11% vs. 60%). Women were more likely than men to say they'd find a map online (90% vs. 82%) and African American respondents were less likely to say they'd find a map (66% vs. 82%). African American respondents were also less likely to say they'd use the website to contact a city official to express an opinion (41% vs. 67%). In interpreting these differences, it is important to keep in mind these those who responded to these questions had already visited the Seattle.gov website, so that initial visit is not the barrier to accessing services.

Respondents were then asked to identify the one or two services that would be most important for them. Figure 100 summarizes these results.

100. Seattle.gov visitors say the most important services to include on the website are the ability to: pay bills, fees or taxes; apply for a license or permit; find maps; or contact a city official to express an opinion

Possible Seattle.gov services	Percent
Pay city bills, fees, or taxes	26%
Apply for license or permit	24%
Find maps	21%
Contact city official to express opinion	20%
Check event or meeting schedule	17%
Reserve a room, picnic site, ball field or other city facility	12%
Vote on issues	9%
Report a problem	9%
Receive email notices on selected topics	7%
Comment at public hearings online	6%
See more pictures and videos on the site	3%
None	9%
Pay tickets	1%
Local information	1%
Other feature	1%
Public records and laws or ordinances	1%
Don't know	0%
Transportation, construction information	0%
Event schedule	0%
Real estate	0%
Employment information	0%

Percent saying this is one of most important services

Source: 2004 Seattle IT Residential Survey

The services identified as most important by the most Seattle.gov visitors are paying city bills, fees or taxes and applying for a license or permit. Also identified as one of the most important by at least one in five respondents is finding maps and contacting city officials to express an opinion. This, despite the earlier finding that this Internet is not overwhelmingly considered an effective way to communicate with elected officials. These responses were consistent across demographic groups of Seattle.gov visitors.

Business and economic development

Computer and Internet users were asked if they have used the Internet to sell goods or services from their home. One in five said they have, up from 8% in 2000, an increase of two and a half times. Responses were similar across demographic groups of computer users except that African American respondents reported a more modest increase, from 8% in 2000 to 10% in 2004, compared with the increase from 8% to 21% among the other respondents.

Respondents were asked if they have tried to find information about local businesses on the Internet. Seven out of ten respondents (71%) said they had, up significantly from 61% in 2000. Men are more likely to do this than women (75% vs. 67%) and seniors are least likely (38% vs. 74%). Figure 101 illustrates the interaction between education and ethnicity on the likelihood of finding information about local businesses online.

101. Generally, those with more education are more somewhat likely to look online for information about a local business; this effect is dramatic among African American respondents
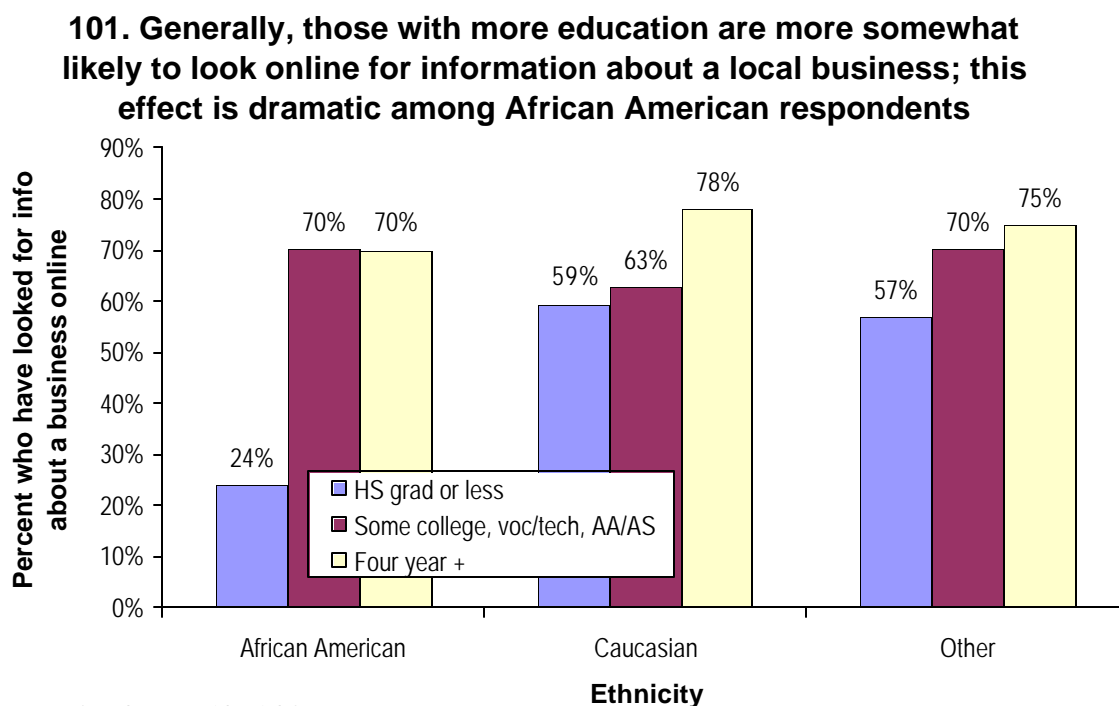
Source: 2004 Seattle IT Residential Survey

Overall, those with more education are more likely to have looked for information about local businesses online, an effect that is particularly strong among African American respondents.

Figure 102 shows the interaction between age and income in looking for information online about local businesses. This figure shows that among the youngest respondents, income is not related to the practice of using the Internet to find this information. This may suggest a cultural shift so that younger Seattleites see the Internet as a publicly useful resources, perhaps like the telephone directory.

102. Generally, as income increases, so does the likelihood of looking online for information on a local business, except among younger respondents where income is unrelated
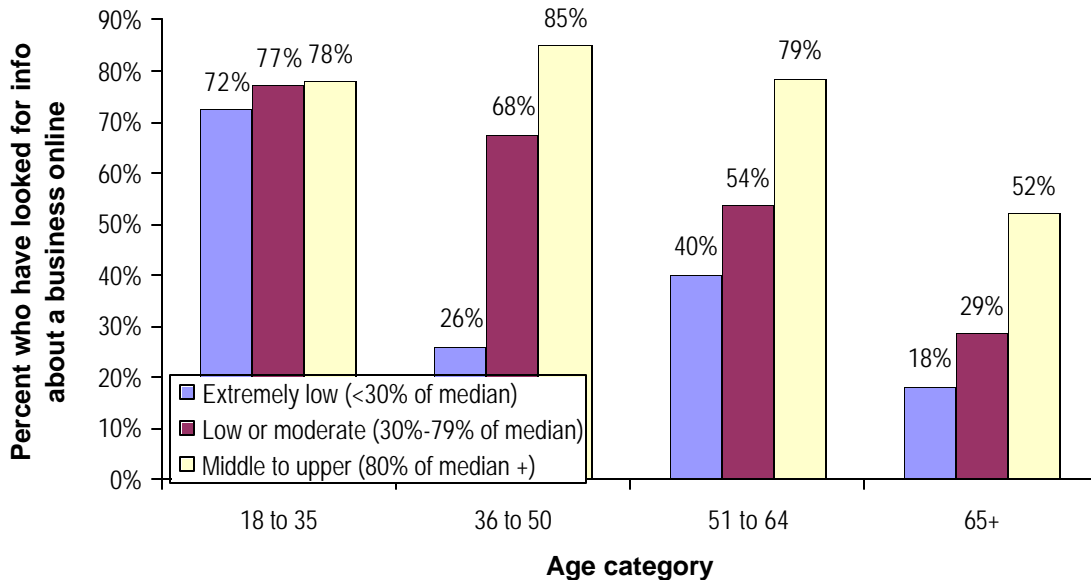
Those who said they have used the Internet to find information about local businesses were asked how satisfied they have been with the information they were able to find. Figure 103 show that respondents are more satisfied than not, and that the satisfaction of the 2004 respondents is significantly higher than that of the 2000 respondents, suggesting an improvement in the quality of local business' websites since 2000.

103. Improved online information for local businesses: 2004 respondents are more satisfied with online information about local businesses than 2000 respondents

Conclusions

Seattleites are technology-users. Increasingly, residents are using the Internet and cable in many aspects of their lives: personal, business, community, and civic. Even though concern about the safety and privacy of online financial transactions, computer viruses, and SPAM is high, Seattleites continue to want electronic access to information and services, as well as the opportunity to create their own content via public access television and web sites. As more services and technologies become available, Seattleites are likely to adopt them, creating a need for increasing infrastructure capacity to support emerging applications.

Despite a high level of technology use by Seattle residents – 85% are current computer or Internet users and most of these have home access – Seattle still has a significant digital divide. Older Seattleites or those with less income or education are less likely to be current or comfortable technology users, although more education and younger age seem to offset the negative effects of low income on access to technology. Lower levels of connectivity are also evident among African American respondents, but the gap is not as pervasive as with the seniors and those with less income or education. The top two reasons for not having a computer at home are cost and lack of interest.

Most demographic subgroups are growing in their use and comfort with technology, but not all and not all at the same rate. For example, the lowest income households had the greatest gains in home computer access, but seniors alone have not increased their use of the City of Seattle website since 2000.

As the assumption of access to computers, cell phones and the Internet (and now, *high speed* Internet access) grows, those without access will become increasing and disproportionately less able to access services, products and information, or interact with providers and others with an online preference. This is a challenge that should be addressed generally as each generation is likely to face it in some form or other. Even though today's young people are likely to be literate in today's technology when they become our seniors, many may not be able to keep up with tomorrow's technological innovations. Each generation has faced technological changes that some subgroups, often the community's seniors, have had difficulty adopting. Thus this is a general challenge that we will continue to face even as each generation of seniors is more technologically advanced than the previous generation.

Younger people seem to lead the way in adopting new technologies and expressing interest in technology that is not yet available, indicating that Seattleites are likely to continue to demand access to cutting edge technology into the future. For example, even though younger people are the least likely to be current cable subscribers, they were the most likely to say they would subscribe to certain cable services requiring especially high bandwidth. This finding indicates that Seattle's need for cable capacity may increase sharply as more advanced services are delivered over cable, enticing current younger non-subscribers to sign up and continue to grow.

Seattleites are involved in their communities and value participation. About three-fourths belong to at least one community organization (about three-fourths of which use the Internet to communicate with their members). More than three-fourths think it is important or very important to maintain Seattle's public access channel, even if they haven't ever seen it and more

than a third contribute to a website, bulletin board or online group. About three fourths have watched the Seattle Channel or visited the City of Seattle website, and a third have done both. This type of civic participation has increased since 2000.

These findings identify a challenge to governments, community organizations, and businesses to maintain equal access for all of Seattle's residents by maintaining several effective modes of communication. This challenge will be ongoing as technology continues to evolve. Today's technologically literate young people will be tomorrow's seniors, struggling to (or deciding not to) adopt tomorrow's new technology. Further, if income and education disparity remain, so will disparity in access to new technology.

Understanding what is needed to increase access for those farthest behind could point to effective outreach strategies the City could consider. Policymakers and providers may want to give some consideration to education, types of content, marketing and fees for information and communications technology services. They may want to consider whether certain new services provide public benefit and, if so, how to reduce or eliminate the barriers to entry and use found here for existing technology access and use of services.

These findings also support the need to maintain a vital program of community computers, placed in locations that are easily accessible by those disadvantaged by the digital divide. Part of such a program might include providing computers and computer support at senior centers, demonstrating the use of the Internet to research health information, or to send or receive a photograph, or to research genealogical information.

Technology is important to many Seattleites, but seemingly out of the reach of a large minority. Since communication and the delivery of services and information are becoming increasingly technology-dependent – sometimes with penalties levied for using lower-tech modes of interaction – the minority without access will find it increasingly difficult to participate on equal footing. This report identifies a need to take steps to ensure that all members of the community retain healthy access to information, goods and services.

Next research step

Additional research is warranted for limited and non-English speaking residents that were not reached by and are not represented in this survey, though it is likely that some respondents are in households with limited English speakers. To learn more about Seattle's digital divide and how to address it, the City may want to conduct a series of focus groups with individuals in "digital divide" subgroups. Some of the people in these subgroups *do not* have access and they could provide greater insight into barriers to access. Others in these subgroups *do* have access and they could provide insight into ways and reasons to overcome those barriers. Understanding what is needed to increase access and use for those farthest behind could point to effective outreach strategies the City could consider. As cell phone only households grow, research into the profiles and technology use by these groups would also be beneficial.

City of Seattle
Information Technology Indicators - Cable Needs Assessment

Residential Survey
Questionnaire

City of Seattle

Information Technology Indicators - Cable Needs Assessment
Residential Survey
Questionnaire

Introduction / Screener

INTRO Hello, this is _____ with Pacific Market Research calling on behalf of the City of Seattle. This is not a sales call. It is a study about communication and technology. Everything you say will be kept strictly confidential .   For this survey, we would like to speak with someone who lives in this household and is 18 years of age or older. Would that be you?

Qual1 18 or older   1   Yes

2   No

If YES, This call may be monitored for quality control purposes.

[PRESS ANY KEY TO CONTINUE]

S1 What is your home zip code?

_____   ENTER ZIP CODE
99999   DON'T KNOW / REF **[SKIP TO THANK9 DISPOSITION = 8]**

S2 To verify, the zip code I entered was [SHOW ZIP CODE ENTERED IN S1]. Is this correct?

1   YES
2   NO [SKIP TO S1]
9   DON'T KNOW / REF **[SKIP TO THANK9 DISPOSITION = 8]**
[IF ZIP CODE NOT IN CITY OF SEATTLE SKIP TO THANK1 DISPOSITION = 12]

S3 [IF ZIP CODE = 98133 OR 98177] Do you live North or South of 145th Street?
[IF NECESSARY, PROBE: 'North or South of the Seattle Golf and Country Club?]

1   NORTH OF 145TH STREET **[SKIP TO THANK1 DISPOSITION = 18]**
2   SOUTH OF 145TH STREET
9   DON'T KNOW / REF **[SKIP TO THANK9 DISPOSITION = 8]**

GENDER ENTER RESPONDENTS GENDER

1   MALE
2   FEMALE

Access to information technology

Tech checklist

I'm going to start by naming some technology that you might have at home. For each thing I name, please say whether you have it in your household.

[If necessary, Do you have …]

A4   …cable service for your television?

1   YES
2   NO
3   Don't have a TV **[skip to A1]**
4   DON'T KNOW
5   REFUSED

A5 …satellite service for your television?
          1   YES
          2   NO
          3   Don't have a TV
          4   DON'T KNOW
          5   REFUSED

A1 …a cell phone for any member of your household?
          1   YES
          2   NO **[skip to A9]**
          3   DON'T KNOW **[skip to A9]**
          4   REFUSED **[skip to A9]**

A2.04 …a computer?
          1   YES
          2   NO
          3   DON'T KNOW
          4   REFUSED   [If 2 or DK, skip to A9c]

A9 Internet access at home?
          1   Yes
          2   No
          3   DON'T KNOW
          4   REFUSED

A9b Who uses the computer or Internet at your house? (Do not read, allow multiple responses. If R does not mention self, probe for self. If R uses home computer, skip to **A9d1 (if R answers "self"** after identifying all users)
          1   Respondent uses it (if not mentioned, probe. If NO, ask A9c, if YES, skip A9c)
          2   FRIEND
          3   PARENT
          4   HOUSEMATE
          5   PARTNER/SPOUSE
          6   CHILDREN
          7   SIBLINGS (BROTHER/SISTER)
          8   OTHER (SPECIFY)_____
          9   NOBODY [OTHER THAN RESPONDENT]
          10 DON'T KNOW / REFUSED / NO MORE APPLY

        [A9c-new add-NOTE: For next survey, either probe deeper on A9c or add direct question: Do you personally use the Internet at home or elsewhere? Yes/No/Don't know/Refused]

        A9c   Do you use a computer [and/] or the Internet anywhere [else other than home – if R does not use home computer]? (Interviewer: if R gives additional information besides "yes" or "no" please select more specific code; do not probe)
              1   YES – said both or did not specify
              2   No – said neither or did not specify **[skip to Cable Drill Down]**
              3   YES – specified computer only
              4   Yes – specified Internet only **[skip to A9d2]**
              7   DON'T KNOW **[skip to Cable Drill Down]**
              8   REFUSED **[skip to Cable Drill Down]**

        A9d1   How long have you been a computer user? _____ (enter # given by R; note whether in weeks, months, years)

If not Internet user [A9=3,4,5,6 and A9c=2,3,6,7,8] skip to Cable Drill Down

A9d2   How long have you been an Internet user? _____ (enter # given by R; note whether in weeks, months, years (**enter 0 if not Internet user**))

If not home Internet [A9=2,3,6,7,8] skip to Cable Drill Down

A13   What type of Internet connection do you use at home to access the Internet? (Do not read, allow multiple response)

       1   Dial up modem
       2   DSL
       3   Internet through your CABLE company
       4   WEB TELEVISION
       5   OTHER1 [SPECIFY] _____
       6   DON'T KNOW
       7   REFUSED / NO MORE APPLY

A4.1f. How satisfied are you with the customer service from your Internet provider?

       1   Very satisfied
       2   Satisfied
       3   Dissatisfied
       4   Very dissatisfied
       5   DK
       6   Refused
       7   Not applicable

A4.1g. Do you think the rates you pay for your Internet service are:

       1   A bargain
       2   Priced about right
       3   Too expensive
       4   DK
       5   Refused
       6   Not applicable

Cable drill down

If A4=1, start here. If A4 NE 1; skip to [NON SUBSCRIBERS – A4.2a]. If no TV (A4, code 3 or A5, code 3), skip to [ALL – A4.3a]

Now we have some questions to find out more about your opinions about your cable service.

SUBSCRIBERS

A4.1a. Who is your cable company?

       1   Millennium Digital Media (formerly Summit) **[continue to A4.1b1]**
       2   Comcast (formerly AT&T) **[skip to A4.1b2]**
       3   Other _____ **[skip to A4.1b3]**
       4   DON'T KNOW **[skip to A4.1b3]**
       5   REFUSED **[skip to A4.1b3]**

A4.1b1. What services do you get? (Read list. Allow multiple responses. Interviewer note: R should answer either 1 or 2 and may select any of the others. If R is not sure whether basic or digital, mention that if it is digital, the cable company probably supplied a digital box or converter) **[Skip to A4.1c]**

       1   Basic
       2   Digital
       3   Premium channels (HBO, Showtime)
       4   Pay per view
       6   Other _____
       7   Don't know
       8   Refused

A4.1b2. What services do you get? (Read list. Allow multiple responses. Interviewer note: R should answer either 0, 1 or 2 and may select any of the others. If R is not sure whether basic or digital, mention that if it is digital, the cable company probably supplied a digital box or converter) [Skip to **A4.1c]**

    0   Limited basic, at about $12.30 per month
    1   Standard Basic at about $40 per month
    2   Digital
    3   Premium channels (HBO, Showtime)
    4   Pay per view
    6   Other _____
    7   Don't know
    8   Refused

A4.1b3. What services do you get? (Read list. Allow multiple responses. Interviewer note: R should answer either 0, 1 or 2 and may select any of the others. If R is not sure whether basic or digital, mention that if it is digital, the cable company probably supplied a digital box or converter)

    0   Limited basic, at about $12.30 per month
    1   Basic or Standard Basic at about $40 per month
    2   Expanded basic
    3   Digital
    4   Premium channels (HBO, Showtime)
    5   Pay per view
    7   Other _____
    8   Don't know
    9   Refused

The next questions are about your satisfaction with the types of programs, the rates and the customer service provided by your cable company.

A4.1c. Would you say you are very satisfied, satisfied, dissatisfied or very dissatisfied with the types and variety of programs and channels on your cable service?

    1   Very satisfied
    2   Satisfied
    3   Dissatisfied
    4   Very dissatisfied
    5   DK
    6   Refused
    7   Not applicable

A4.1d1: How satisfied are you with the coverage of community news and events that you get on cable television?

    1   Very satisfied
    2   Satisfied
    3   Dissatisfied
    4   Very dissatisfied
    5   DK
    6   Refused
    7   Not applicable

A4.1e. How satisfied are you with the customer service for your cable television?

    1   Very satisfied
    2   Satisfied
    3   Dissatisfied
    4   Very dissatisfied
    5   DK
    6   Refused
    7   Not applicable

A4.1f. I'm going to read a list of problems that you might have had with your cable service. For each one, please say whether or not you've had that problem. The first one is:

1   Your cable went out – the picture, sound or both
2   Your Internet service went out **[If A13 = 3]**
3   Your Internet service is too slow **[If A13=3]**
4   You had to wait too long to reach the company on the phone
5   Poor quality of work on installation or service visits
6   You had trouble returning equipment or paying bills in person
7   Lack of courtesy from the cable company
8   You had to wait too long for installation or service visits, or they didn't keep an appointment.
9   Billing errors
10   The bill was unclear
11   Poor picture or poor sound quality
12   Anything else? _____
13   None **[skip to ALL: A4.3]**
14   Don't know **[skip to ALL: A4.3]**
15   Refused **[skip to ALL: A4.3]**

A4.1g. Have you contacted the cable company to resolve any of these problems?

1   Yes
2   No **[skip to A4.3]**
3   DK **[skip to A4.3]**
4   Refused **[skip to A4.3]**

A4.1d. Would you say the rates you pay for your cable television are:

1   A bargain
2   Priced about right
3   Too expensive
4   DK
5   Refused
6   Not applicable

Skip to "ALL" (A4.3a)

NON SUBSCRIBERS

A4.1d1: How satisfied are you with the coverage of community news and events that you get on television?

1   Very satisfied
2   Satisfied
3   Dissatisfied
4   Very dissatisfied
5   DK
6   Refused
7   Not applicable
8

A4.2a. What are all the reasons that you don't subscribe to cable tv? (Do not read, note order of mention, check all that apply, probe for additional)

1   lack of interesting programs
2   Too many objectionable programs (note if they specify type of objection) including objectionable programming for children (specify, do not probe: _____
3   Don't want the kids to watch more television
4   can't get service
5   price
6   don't watch TV
7   don't want cable or more channels

        8   get satellite
        9   service issues
        10   had but disconnected
        11   I don't understand cable and all the choices
        12   DK/refused
        13   Other _____

A4.3b. How likely would you be to subscribe to cable if they offered the opportunity to make up your own package of channels as an add-on to their basic cable package?

        1   Very Likely
        2   Somewhat likely
        3   Somewhat unlikely
        4   Very unlikely
        5   DK
        6   Refused

ALL

A4.3 Are there any [other] types and variety of programs or channels you would like to see on [your] cable television? _____

A4.3b. In addition to basic cable service, how likely would you be to pay a little extra for the opportunity to make up your own package of channels?

        1   Very Likely
        2   Somewhat likely
        3   Somewhat unlikely
        4   Very unlikely
        5   DK
        6   Refused

A4.4 Now I want to read you a list of features that the cable company offers now or may offer over the next 5 years. For each feature, please indicate whether you would be very likely, somewhat likely, somewhat unlikely or very unlikely to choose it as part of a cable package. (Interviewer note: code 9 as well if R volunteers that he/she would not pay extra for it)

    A4.4c   Making telephone calls over the Internet – as a low cost alternative to your regular telephone service
        1   Very likely
        2   Somewhat likely
        3   Somewhat unlikely
        4   Very unlikely
        5   Don't know
        6   Refused

    A4.4d   High definition TV (HDTV)
        1   Very likely
        2   Somewhat likely
        3   Somewhat unlikely
        4   Very unlikely
        5   Don't know
        6   Refused

    A4.4e   Order movies and shows delivered over cable for you to watch when you want to see them.
        1   Very likely
        2   Somewhat likely

3 Somewhat unlikely
4 Very unlikely
5 Don't know
6 Refused

A4.4f Interactive services like answering opinion polls or buying products directly through your television.
1 Very likely
2 Somewhat likely
3 Somewhat unlikely
4 Very unlikely
5 Don't know
6 Refused

A4.4g Wireless Internet access available at other locations outside the home
1 Very likely
2 Somewhat likely
3 Somewhat unlikely
4 Very unlikely
5 Don't know
6 Refused

A4.4h Video conferencing for services like distance learning, medical appointments, or family visits
1 Very likely
2 Somewhat likely
3 Somewhat unlikely
4 Very unlikely
5 Don't know
6 Refused

A4.4l Are you aware that the City has a Cable Office with a Customer Bill of Rights to protect the rights of cable consumers?
1 Yes
2 No
3 Refused

A4.4j Would you like the City to contact you with information about your rights and discounts for low-income seniors and people with disabilities?
1 Yes
2 No/ Don't know / REF

SCAN

Now we'd like to ask you a few questions about the public access channel, where the public can create and show their own television programs. These are shown in Seattle on [**if Millennium**: channel 29/ **if Comcast**: channel 77; **if other, DK, refused or no cable**: channel 29 or 77], also called SCAN or Seattle Community Access Network.

A4.5a Have you ever watched this channel?
1 Yes
2 No **[skip to A4.4c]**
3 Don't know **[skip to A4.4c]**
4 Refused **[skip to A4.4c]**

A4.5b   How often do you typically watch SCAN public access [Channel 77/ Channel 29]? If you do not watch regularly, please just tell me that.

[READ AS NECESSARY]
[IF DON'T WATCH REGULARLY ENTER CHOICE 4]
1   At least once a week
2   At least once a month but less than once a week
3   At least once a year but less than once a year
4   VARIES / JUST CHANNEL SURFING /Don't watch regularly
5   DON'T KNOW
6   Refused

A4.5c   How important do you think it is for residents and community organizations to have the opportunity to create and show their own local programs? Would you say it is:
1   Very important
2   Important
3   Not that important
4   Not at all important
5   No opinion/don't know
6   Refused

Seattle channel

The next few questions are about the Seattle channel. This is the government channel with city council meetings and programs about city services. You can see it on cable [**If Millennium**, Channel 28; **If Comcast**, Channel 21; **if other answer or no cable**, Channel 21 or 28) or on the Internet (at seattlechannel (dot)org).

A6   Have you ever seen the Seattle Channel?
1   YES
2   NO **[SKIP TO A8INT]**
3   DON'T KNOW **[SKIP TO A8INT]**
4   Refused **[SKIP TO A8INT]**

A7   How often do you typically watch the Seattle Channel? If you do not watch regularly, please just tell me that.

[READ AS NECESSARY]
[IF DON'T WATCH REGULARLY ENTER CHOICE 4]
1. At least once a week
2. At least once a month but less than once a week
3. At least once a year but less than once a month
4. VARIES / JUST CHANNEL SURFING /Don't watch regularly
5. DON'T KNOW
6. Refused

A8INT What type of program would encourage you to watch the Seattle Channel [more]? (Read list; allow multiple responses) (Rotate)
1   City council and other government meetings
2   Press conferences
3   Features about city services
4   Arts events and community festivals
5   Documentaries about Seattle people, places and events
6   City news
7   Lectures and forums
8   Community meetings
9   Authors and readings
10   Something else_____
11   Nothing/none of these

12   DK/refused

Computer drill down

Now we're going to ask for more detail about your experiences with or opinions about computers and the Internet.

If no home computer *or* no home Internet (A9=2, 3,4,6,7,8)→ continue to A10B;

If home computer *and* Internet but not a current computer user (A9=1,5 and A9c=2,4,6-8)→ skip to A10C;

If home computer and Internet and current computer user (A9=3 and A9b=1)→ skip to A14

A10B   What are all the reasons you can think of for not having [a computer/ the Internet/ a computer or the Internet] at home? (Allow multiple responses; don't read; note order of mention; prompt for additional)
   1   COST / TOO EXPENSIVE
   2   DON'T KNOW HOW TO USE IT
   3   SUFFICIENT ACCESS ELSEWHERE
   4   SAFETY / SECURITY CONCERNS
   5   DON'T WANT ONE
   6   Don't know how to choose one
   7   Don't have time to learn how to use one
   8   Don't have time to use one/It at home
   9   DON'T KNOW HOW TO SET IT UP
   10   DON'T HAVE A COMPUTER OR INTERNET DEVICE
   11   PROBLEMS WITH THE TELEPHONE LINE
   13   PROBLEMS WITH CABLE ACCESS
   14   PROBLEMS WITH DSL ACCESS
   15   CAN'T GET THE KIND OF INTERNET ACCESS I WANT
   16   DON'T REALLY KNOW ABOUT THE INTERNET
   17   DON'T WANT KIDS TO USE IT
   18   Inappropriate content/pornography/hatred-material
   19   Worried about inappropriate content for children
   19   Child safety (dangerous strangers)
   20   Computer safety – viruses, worms
   21   Privacy/security/personal information (banking, credit card, identity theft issues)
   22   I **do** have home Internet [Verify if answer yes to this]
   23   I **do** have a home computer [Verify if answer yes to this]
   24   OTHER1 [SPECIFY]_____
   25   DON'T KNOW
   26   REFUSED / NO MORE APPLY

If R not a current computer user (A9c =2,4,6-8) continue to A10c:

If computer or Internet user (A9b=1 or A9c=1,3,4,5)→ skip to A14INT.

A10c.   You mentioned earlier that you are not a computer user now. Have you ever used a computer?
   1   Yes **[Create hidden variable: NONLOWUSER=1; Skip to B1a]**
   0   No **[Create hidden variable: NONLOWUSER=1; Skip to B3A]**
   8   DK **[Create hidden variable: NONLOWUSER=1; Skip to B3A]**
   9   Refused **[Create hidden variable: NONLOWUSER=1; Skip to B3A]**

ALL COMPUTER/INTERNET USERS

A14INT: If Home computer or Internet (A9=1,3,4,5); else skip to A17

A14   How many days per week do you typically use [your home computer/Internet device]? _____ (1 thru 7; 9=DK/Ref)

   A14a. And on these days, how many hours per day do you typically use your [computer/Internet device]? _____ 99=DK/ref

A17   I am going to read you a short list of [other] places that you might use a computer or the Internet. For each one, please tell me if you use a computer at that place. The first one is…

[ROTATE A17A TO A17E BLOCKS]

(IF NECESSARY: Do you use a computer at…. **[IF YES]** how many days per week… and hours per day?)

A17A   Work?   A18A _____   A18a.1 _____
        1   YES   (1-7; 9=DK/Ref)   (1-20; 99=DK/ref)
        2   NO
        9   DON'T KNOW / REFUSED

        A17a.1 [If hours at work using a computer is > 20 hours, ask] Are you a computer professional?
        1   YES
        2   NO
        9   DON'T KNOW / REFUSED

A17B   School?   A18B _____   A18b.1 _____
        1   YES   (1-7; 9=DK/Ref)   (1-20; 99=DK/ref)
        2   NO
        9   DON'T KNOW / REFUSED

A17C   Public Library?
        1   YES
        2   NO
        9   DON'T KNOW / REFUSED

A17H   A relative or friend's house or some other place in the community?
        1   YES [Specify] _____
        2   NO
        9   DON'T KNOW / REFUSED
A18c_h   Thinking of the computers at all these places other than home, work or school, about how many hours per week would you say you typically use these computers (if necessary: your best estimate is fine.)

                                                                                  _____
                                                                             999 – DK/Ref
Probe for best estimate

Create a hidden variable (TOTHRS) that is total hours per week at all places including home. If < 5 hours per week NONLOWUSER=1.

[IF A17A-H ALL > 1 (if R does not use computers at any other places) continue to A21]
[If any A17a-h=1 (if R uses computers at any other places) continue to A15]

A15   Do you have an email address?
                        1   YES
                        2   NO **[Skip to A22int]**
                        3   DON'T KNOW **[Skip to A22int]**
                        4   REFUSED **[Skip to A22int]**

A15a   How often do you use email?
     1 At least once a day
     2 Once a week or several times per week
     3 Less than once a week
     4 DK
     5 REFUSED

A22INTI am going to read you a list of things you might use a computer or the Internet for. For each one, please tell me whether or not you use it, even if it isn't very important to you. Please also keep in mind that this could be on a computer that you have at home, work, school, or some other place.

 [ROTATE Q22A TO Q22n]

(IF NECESSARY: Do you use a computer/the Internet or email to…)

Q22A   Keep in touch with friends and family
     1 Yes
     0 No
     3 DK
     4 Ref

Q22n   Play video games over the Internet
     1 Yes
     0 No
     3 DK
     4 Ref

Q22o   Share photos, music or video over the Internet
     1 Yes
     0 No
     3 DK
     4 Ref

Q22p   Manage finances
     1 Yes
     0 No
     3 DK
     4 Ref

Q22b   Hobbies, sports or entertainment
     1 Yes
     0 No
     3 DK
     4 Ref

Q22c   Get health or medical information
     1 Yes
     0 No
     3 DK
     4 Ref

Q22d   Get news
     1 Yes
     0 No

3   DK
              4   Ref

Q22e   Look for a job or job training
              1   Yes
              0   No
              3   DK
              4   Ref

Q22g   Do your work
              1   Yes
              0   No
              3   DK
              4   Ref

Q22h   Education purposes, including homework
              1   Yes
              0   No
              3   DK
              4   Ref

Q22i   Contribute to a web site, bulletin board, or online group
              1   Yes
              0   No
              3   DK
              4   Ref

Q22j   Research prices and products
              1   Yes
              0   No
              3   DK
              4   Ref

Q22k   Purchase products or services
              1   Yes
              0   No
              3   DK
              4   Ref

Q2l Find social service information and assistance
[NOTE: If needed to explain: such as child care, housing support, senior services or counseling services]
              1   Yes
              0   No
              3   DK
              4   Ref

Q22m   Find legal or consumer rights information
              1   Yes
              0   No
              3   DK
              4   Ref

Q23   Which are the one or two of these uses that are most important to you? Let me know if there's an
           activity I didn't mention. (Do not read; allow up to 3 responses; note order of mention)
              1   Keep in touch with friends and family
              2   Hobbies, sports or entertainment
              3   Get health or medical information
              4   Look for news or information about politics or the campaign
              5   Look for a job or job training

7   Do your work
        8   Education purposes, including homework
        9   Create content for the Internet
        10   Research prices and products
        11   Purchase products or services
        12   Find social services information and assistance
        13   Find legal or consumer rights information
        15   None of these
        16   Other _____
        17   DK
        18   Refused

F4   How satisfied are you with the content of the Internet for your needs? Would you say that you are…
        (please read)
        1   VERY DISSATISFIED
        2   SOMEWHAT DISSATISFIED
        3   NEITHER SATISFIED NOR DISSATISFIED
        4   SOMEWHAT SATISFIED
        5   VERY SATISFIED
        8   DON'T KNOW / DEPENDS
        9   REFUSED

Human Relationships to Technology

F1INT   [IF NEVER USED COMPUTER] These next questions are going to ask about the ways that computers
        and the Internet affect people's life. While I understand that you do not use this technology, we are still
        interested in your opinions about these issues. You can base your answers on anything you might
        have heard, seen or read.
[PRESS ANY KEY TO CONTINUE]

F1   Do you feel that companies and organizations that you can visit on the Internet use personal
        information appropriately?
[IF NEEDED: Please base your response on anything you might have seen, read or heard.]
        1   YES
        2   NO
        3   DON'T KNOW / DEPENDS
        9   REFUSED

F2   Do you feel that there are adequate precautions for children to access the web safely?
[IF NEEDED: Please base your response on anything you might have seen, read or heard.]
        1   YES
        2   NO
        3   DON'T KNOW / DEPENDS
        9   REFUSED

F8   How concerned are you about the possibility of viruses sent over the Internet damaging computer files?
        Please use a 5 point scale where 1 means not at all concerned and 5 means extremely concerned?
[IF NEEDED: Please base your response on anything you might have seen, read or heard.]
        1   Not at all concerned
        2
        3
        4
        5   Very concerned
        6   DK
        7   REFUSED

F9   Using the same scale, how concerned are you about unsolicited advertisements or SPAM sent over the Internet?
[IF NEEDED: Please base your response on anything you might have seen, read or heard.]

      1   Not at all concerned
      2
      3
      4
      5   Very concerned
      6   DK
      7   REFUSED

F3   How confident are you that financial transactions on the Internet are secure and private where 1 means not at all confident and 5 means very confident?
[IF NEEDED: Please base your response on anything you might have seen, read or heard.]

      1   Not at all confident that financial transactions are secure
      2
      3
      4
      5   Very confident that financial transactions are secure
      8   DON'T KNOW / DEPENDS
      9   REFUSED

[IF NEVER USED COMPUTER (A10C NE 1) SKIPTO B3A

Literacy

BIntNote: IF NEVER USED A COMPUTER [A10C NE 1] SKIP TO **B3A**

B2INT   I am going to read you a list of computer tasks. For each one I read, please tell me how comfortable you are completing that task on the computer. Again, please use a five point scale where "5" means you are "very comfortable" and a "1" means you are "not at all comfortable" completing that task. If you have never done this task, please just tell me that.

 [ROTATE LIST B2b TO B2H]

(How comfortable are you…)
[PROBE: How comfortable are you completing that task on the computer. Please use a five point scale where "5" means you are "very comfortable" and a "1" means you are "not at all comfortable" completing that task. If you have never done this task, please just tell me that. You can also use any number in between.]

B2C.1 Opening and saving a file
      1   NOT AT ALL COMFORTABLE
      2
      3
      4
      5   VERY COMFORTABLE
      6   NEVER DONE THIS TASK
      8   DON'T KNOW
      9   REFUSED

B2J1   Searching on the web
      1   NOT AT ALL COMFORTABLE
      2
      3
      4
      5   VERY COMFORTABLE
      6   NEVER DONE THIS TASK

8   DON'T KNOW
        9   REFUSED

If B2C.1 and B2J1 = Not at all Comfortable, skip to B1A. Otherwise continue.

[ROTATE B2b TO B2Q]

B2b   Typing, editing and printing using a word processing program
                1   NOT AT ALL COMFORTABLE
                2
                3
                4
                5   VERY COMFORTABLE
                6   NEVER DONE THIS TASK
                8   DON'T KNOW
                9   REFUSED

B2F   Creating a simple budget using a spreadsheet program
                1   NOT AT ALL COMFORTABLE
                2
                3
                4
                5   VERY COMFORTABLE
                6   NEVER DONE THIS TASK
                8   DON'T KNOW
                9   REFUSED

B2H   Installing new software
                1   NOT AT ALL COMFORTABLE
                2
                3
                4
                5   VERY COMFORTABLE
                6   NEVER DONE THIS TASK
                8   DON'T KNOW
                9   REFUSED

B2K   Setting up a new Internet connection
                1   NOT AT ALL COMFORTABLE
                2
                3
                4
                5   VERY COMFORTABLE
                6   NEVER DONE THIS TASK
                8   DON'T KNOW
                9   REFUSED

B2L   Creating and sending a message using email
                1   NOT AT ALL COMFORTABLE
                2
                3
                4
                5   VERY COMFORTABLE
                6   NEVER DONE THIS TASK
                8   DON'T KNOW
                9   REFUSED

B2N   Sending and opening attachments in an email
                1   NOT AT ALL COMFORTABLE
                2

```
                3
                4
        5       VERY COMFORTABLE
        6       NEVER DONE THIS TASK
        8       DON'T KNOW
        9       REFUSED
```

B2Q   Creating a web site
```
        1       NOT AT ALL COMFORTABLE
        2
        3
        4
        5       VERY COMFORTABLE
        6       NEVER DONE THIS TASK
        8       DON'T KNOW
        9       REFUSED
```

B1A   Overall, how comfortable are you using a computer or the Internet? Please use a five point scale where
       "5" means you are "very comfortable" and a "1" means you are "not at all comfortable" using a
       computer. You may also use any number in between.
```
        1       NOT AT ALL COMFORTABLE []
        2
        3
        4
        5       VERY COMFORTABLE
        8       DON'T KNOW
        9       REFUSED
```

Attitudes about importance of access, and training (ALL)

B3a.   How important do you think it is for adults to have access to computers and the Internet these days?
       Would you say it is…
```
        4   Very important
        3   Somewhat important
        2   Not really that important
        1   Not important at all
        9   DK/NA
```

B3c.   How important do you think it is for children to have access to computers and the Internet these days?
       Would you say it is…
```
        4   Very important
        3   Somewhat important
        2   Not really that important
        1   Not important at all
        9   DK/NA
```

   B3d1. **INTERVIEWER NOTE**: If R qualifies answer to B3d with something about children, like "if they are
   supervised" or "it depends on age" or "if it's filtered," then allow the R to answer with that condition and
   note that it is conditional here:
   Conditional comment volunteered 1   Yes

If NONLOWUSER ne 1, skip to C1

Non/low computer users

B4a. What are all the reasons you can think of that you [don't use a computer now/don't use a computer more/have never used a computer [A10c or TOTHRS?] (Allow multiple response, do not read, prompt for additional, note order of mention)

    1   Afraid of them
    2   Too busy to learn
    3   Nothing on computers interests me or is relevant to me
    4   Other things to do
    5   Too complicated - Can't learn how to use them
    6   Don't have access to one or know where to get access
    7   Hate them
    8   No desire or need to use them
    9   Too old
    10   Not a "computer person"
    11   Never learned how to use them
    12   No special reason, just haven't
    13   Other_____
    14   DK/refused

Community Building

DINT I am going to read you a list of groups and organizations. For each one I read, please tell me if you currently participate in these kinds of group.

[ROTATE D1A-D2A-I BLOCKS]

D1A (Do you currently participate in…)

A neighborhood association or community group.
    1   YES
    2   NO
    3   DON'T KNOW
    4   REFUSED

D1C A school association (like the PTSA)
    1   YES
    2   NO
    3   DON'T KNOW
    4   REFUSED

D1D.04 A sports club or cultural organization
    1   YES
    2   NO
    3   DON'T KNOW
    4   REFUSED

D1h3 A religious group
    1   YES
    2   NO
    3   DON'T KNOW
    4   REFUSED

D1I Do you participate in any other type of group or organization, such as an arts, civic, or business group?
    1   YES _____
    2   NO
    3   DON'T KNOW
    4   REFUSED

D2.04A-I **[IF D1A-I = 1]** Does this group use a web page or email to communicate with its members?

```
1      YES
2      No
3      DK/REF
```

Civic Participation

E4 In general, would you rather access government services
```
1    On the web or via email
2    In person
3    By telephone
4    By letter
5    Other _____
6    DK
7    Refused
```

E1   In your opinion, how effective are email and the Internet as ways to communicate your opinions about issues that affect you in your community? Please use a 5-point scale where 1 is "not at all effective" and 5 is "very effective."
```
1        NOT AT ALL EFFECTIVE
2
3
4
5        VERY EFFECTIVE
9        DON'T KNOW / REFUSED
```

E2   In your opinion, how effective are email and the Internet as ways to communicate with elected officials? Please use a 5-point scale where 1 is "not at all effective" and 5 is "very effective." You may also use any number in between.
```
1        NOT VERY EFFECTIVE
2
3
4
5         VERY EFFECTIVE
9        DON'T KNOW / REFUSED
```

E3   In the past year, have you used the Internet to obtain information from a city, county, state, or federal government?
```
1        YES
2        NO
3        DON'T KNOW
8        REFUSED
```

City of Seattle WEB Services

J1 Have you ever visited the City of Seattle web site; at cityofseattle (dot) net or seattle (dot) gov?
```
1        YES
2        NO [SKIPTO FINT]
8        DON'T KNOW [SKIPTO FINT]
9        REFUSED [SKIPTO FINT]
```

   J04.3   Here is a list of city services that are offered or may be offered online. Which of the following would you use? (Read, allow multiple response)
```
1    Pay city bills, fees, or taxes
2    Apply for a license or permit
```

4   Find maps
5   Check an event or meeting schedule
6   Contact a city official to express your opinion
7   Comment at a public hearings online (testifying)
8   Report a problem
9   Receive email notices on topics that you select
10   Reserve a room, picnic site, ball field or other city facility
11   Vote on issues
12   See more pictures and videos on the site
13   Any other feature not mentioned?_____(probe)_____
14   None
15   DK/Refused

J04.4   Which one or two of these services would be the most important to you? (note first two mentioned, allow up to 3 responses)
1   Pay city bills, fees, or taxes
2   Apply for a license or permit
4   Find maps
5   Check an event or meeting schedule
6   Contact a city official to express your opinion
7   Comment at a public hearings online (testifying)
8   Report a problem
9   Receive email notices on topics that you select
10   Reserve a room, picnic site, ball field or other city facility
11   Vote on issues
12   See more pics and videos on the site
13   Any other feature not mentioned?
14   None

Business and Economic Development

I1   **[IF A9 = 1,4,5, continue; else if → D4]** Have you used the Internet to sell goods or services from your home?
1   YES
2   NO
3   DON'T KNOW
9   REFUSED

D4   In the past year, have you tried to find information about local businesses on the Internet, either in a directory or on the business' web site?
1   YES
2   NO **[SKIPTO KINT]**
3   DON'T KNOW **[SKIPTO KINT]**
9   REFUSED **[SKIPTO KINT]**

D5   How satisfied are you with the information about local businesses that you were able to find on the Internet? Please use a five point scale where "5" means you are "very satisfied" and a "1" means you are "not at all satisfied." You may also use any number in between.
1   NOT AT ALL SATISFIED
2
3
4
5   VERY SATISFIED
6   DON'T KNOW
7   REFUSED

DEMOGRAPHICS

KINT   Now I just have a few final questions to help us group your answers with others. Let me assure you that all of your responses will be kept strictly confidential.

[PRESS ANY KEY TO CONTINUE]

K4 How many people, including you, live in your house?

    __   ENTER NUMBER IN HOUSEHOLD
    99   REF

K5 **[IF K4 > 1]** How many children under the age of eighteen live in your household?

    __   ENTER NUMBER OF CHILDREN
    99   REF

K6 What is your age?

    __   ENTER AGE
    99   REFUSED

K7 **[IF K6 = 99]** Are you between?

    1   18 to 25,
    2   26 to 35,
    3   36 to 50,
    4   51 to 64, or
    5   65 years of age or older?
    9   REFUSED

K8 What is the last year of schooling you completed?

[IF COLLEGE DEGREE PROBE: Would that be a two year or four year degree?]

    1   Grade School or Some High School,
    2   High School Graduate,
    3   Some College, Technical or Vocational School or Two Year Degree,
    4   Four Year College Graduate, or
    5   Post Graduate Work or Graduate Degree?
    9   REFUSED

K9 What is the primary language spoken at your home?

    1   ENGLISH
    2   SPANISH [Skip to K10]
    3   OTHER [SPECIFY]
    9   REFUSED

K10   What race or ethnicity do you consider yourself? (Allow multiple response; If multiple response, ask "Which do you consider to be your primary race?" and store under K10primary).

    1   African American,
    2   Asian / Pacific Islander,
    3   Caucasian,
    4   Hispanic / Latino, or
    5   Native American / American Indian
    6   OTHER [SPECIFY]
    9   REFUSED

K10a Which of the following best describes your work life at this time? (allow multiple response)

    1   Employed full time,
    2   Employed part time
    3   Self employed
    4   Student

5   Homemaker
6   Unemployed, but looking for work
7   Unemployed and not looking for work
8   Retired
9   Disabled **[skip to K10C]**
10   REFUSED

K10b   Do you have a disability, handicap or chronic disease that keeps you from participating fully in work, school, housework or other activities?
    1   Yes
    2   No **[skip to K11]**
    3   DK **[skip to K11]**
    4   Ref **[skip to K11]**

K10c   Does this disability impair your use of the Internet?
    1   Yes
    2   No
    3   DK
    4   Ref

K11   Is your total household income above or below *[SHOW AMOUNT3]* a year?
    1   BELOW *[AMOUNT3]*
    2   *[AMOUNT3]* OR ABOVE **[SKIPTO K13]**
    9   REFUSED **[SKIPTO K14]**

K12   Would that be…
    1   *[AMOUNT1]* or Less, or
    2   *[AMOUNT1]* to *[AMOUNT2]*, or
    3   *[AMOUNT2]* to *[AMOUNT3]*?
    9   REF

K13   Would that be…
    1   *[AMOUNT3]* to *[AMOUNT4]*,
    2   *[AMOUNT4]* to *[AMOUNT5]*, or
    3   *[AMOUNT5]* to *[AMOUNT6]*,
    3   *[AMOUNT6]* or More?
    9   REF
    INCOME QUESTION AMOUNTS BY HOUSEHOLD SIZE TABLE

FIGURES WILL BE ROUNDED TO NEAREST $500 FOR RESPONDENTS

Category		**Household Size**							
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8+**
Extremely Low (Amount1)	HUD 30% of Median*	$16,350	$18,700	$21,050	$23,350	$25,250	$27,100	$29,000	$30,850
Low (Amount 2)	HUD 50% of Median*	$27,250	$31,150	$35,050	$38,950	$42,050	$45,200	$48,300	$51,400
Moderate (Amount 3)	HUD 80% of Median*	$40,250	$46,000	$51,750	$57,500	$62,100	$66,700	$71,300	$75,900
Middle (Amount 4)	HUD 95% of Median*	$51,804	$59,204	$66,605	$74,005	$79,925	$85,846	$91,766	$97,687
Upper Middle (Amount 5)	HUD 120% of Median*	$65,436	$74,784	$84,132	$93,480	$100,958	$108,437	$115,915	$123,394
Upper (Amount 6)	HUD 150% of Median*	$81,795	$93,480	$105,165	$116,850	$126,198	$135,546	$144,894	$154,242

Based on 2004 HUD Income guidelines

K14   Those are all the questions we have at this time.

The City of Seattle is interested in how your community is changing over the years. Would you be willing to let
       us contact you again with similar questions or for a focus group in the future?
               1   YES
               2   NO / DON'T KNOW / REF **[SKIP TO THANK]**

K15   May I please have your first name?
                   [OPEN-ENDED RESPONSE]

THANK Thank you very much for your time and the useful information you have shared. Have a good evening.
[PRESS ANY KEY TO END INTERVIEW]

INTNUM   ENTER INTERVIEWER NUMBER
               ___   ENTER NUMBER

THANK1   Thank you for your time, but we today we are interviewing residences located within the City of
           Seattle boundaries.
[PRESS ANY KEY TO CONTINUE]

THANK9   Thank you for your time, but we cannot continue without that information.
[PRESS ANY KEY TO CONTINUE]

DISP #	DISPOSITION	DISPLAY TYPE	PROPERTY	INCIDENCE
		P/S/I/H	A/B/C/N/R/F	D/B/I
1	No Answer	P	N	D
2	Busy	P	B	D
3	Answering Machine	P	N	D
4	Disconnected / Nonworking	P	F	D
5	Soft Refusal (Callback To Convert)	P	R	D
6	Hard Refusal	P	F	D
7	Never Call	P	F	D
8	Screener Refusal	H	F	D
9	Communication Barrier (not due to Language)	P	F	D
10	Language Barrier (Spanish)	P	F	D
11	Language Barrier (Asian)	P	F	D
12	Language Barrier (Other)	P	F	D
13	Language Barrier (Not Determined)	P	F	D
14	Callback Introduction	P	C	D
15	Callback Interview	I	C	I
16	Mid-Terminate	I	F	I
17	NQ – Under the age of 18	H	F	B
18	NQ – Out Of Area (not Seattle resident)	H	F	B
40	Complete	H	F	I