City of Seattle
Information Technology Residential Survey
Final Report

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Background

This report represents the third in a series of data collection efforts by the City of Seattle intended to measure the state of information technology use and inclusion for Seattle residents. Residential surveys were last conducted in 2000 and 2004. The topics covered are based on an initial set of information technology indicators for a healthy community developed by the city prior to the 2000 survey and then updated to reflect new trends in technology. Where possible, the new data has been compared with the earlier 2000 and 2004 results, providing a longitudinal tracking of technology adoption in Seattle.

The City of Seattle Department of Information Technology (DoIT) Community Technology Program contracted with a consultant team (Elizabeth Moore at Applied Inference and Andrew Gordon of the University of Washington) to learn

- how residents use information technology, such as computer and the Internet, cable TV, or cell phones,
- how they use it to interact with government and community;
- about residents' attitudes toward technology, including how essential it is and perceptions of online safety and security, and
  what would enable technology to be more useful and accessible to Seattle residents, and
  what barriers to technology use do different residents face

Methods

City of Seattle staff and consultants developed an 18-minute telephone survey to be administered to 1064 random Seattle residents. Certain ZIP codes were sampled more heavily to increase the percentage of respondents from ethnic minorities, with deliberate oversampling of Hispanic households. Cell phone only households were not included in the telephone survey.

Statistical weights were developed for the final sample to balance ZIP code, ethnicity, age and income according to values reported in the 2007 American Community Survey, conducted by the U.S. Census Bureau. 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.

For the first time, the city was also able to conduct a limited number of participatory focus groups with populations underrepresented in the telephone survey, to obtain additional information about technology use and barriers to use. Brief surveys were also completed by participants in most of the groups. See Appendix I for more details of all methods and Appendix II for copies of survey instruments and focus group protocols used.

Key Findings

Technology check list

Seattle households are online and becoming increasingly computer experienced. Most survey households (88%) report having a home computer with Internet access (84%), and most of that access (74%) is faster than dial up. These figures are well above the national average of 62% of households with Internet access and 51% with high speed access[1]. High speed access in Seattle has increased steeply from 18% in 2000, to 42% in 2004, and 74% in 2009. However, half of those with high speed access are concerned about its cost and another quarter wants even faster access. Cost may be the reason that no more than 15% of Seattle households subscribe to the faster premium or business class Internet access, despite the desire for more speed. Analysis shows that income is the only demographic related to subscriptions to premium or business class high-speed Internet access.

The adoption of other technologies is also increasing, but more slowly. For example, cable service subscription has increased slowly from 63% in 2000, to 65% in 2004, and 69% in 2009; and cell phone subscription rates have increased from 70% in 2004 to 86% in 2009, often with more than one cell phone per family in 2009. Focus group results show that among residents younger than 65, even subpopulations with low rates of computer/Internet access have high rates of cell phone subscription (88%, excluding grad student group).

Adoption of emerging technologies such as a mobile device for accessing the Internet, now at 35%, or WiFi Internet access, now at 7%, may show steep increases in the future.

Many factors were associated with technology access, *and lack of access*, including:

- **Age** - seniors are less likely to have a cell phone, be computer users, have a home computer or mobile device, and have home Internet or an email address. Seniors are a group that might particularly benefit from improved Internet awareness so that they can retain independence by ordering goods and services online after they stop driving. However, seniors new to the Internet must be considered vulnerable and must be given accurate information about some of the dangers of the Internet, such as viruses, scams, and identity theft, as well as tools and strategies needed to protect themselves from them.
- **Race/ethnicity**
  - Latino households are less likely than other households to have access to most technology except cell phone and satellite TV. This pattern is more extreme among Latinos who speak Spanish at home, although even among primarily English-speaking respondents, Latinos are less likely to have a home computer or Internet access, an email address, or have been a computer user for longer than one year. This result may reflect an actual change in the community, perhaps due to changes in immigration patterns, or it could be a result of the more intensive efforts to recruit Hispanic respondents for this survey, perhaps tapping into an established demographic, but for the first time;

[1] http://www.usatoday.com/tech/news/2009-06-03-internet-use-broadband_N.htm

  - African American respondents are also less likely to have home computers or home Internet access, especially high-speed access. These respondents also report using computers for fewer things, and less computer experience overall.
  - Overall, African American computer users and Hispanic/Latino computer users reported using the computer for fewer things, and less computer experience overall.
- **Income** - positively associated with, and the most powerful predictor of, access to most technology in the checklist. As income goes up, so does access to and use of technology. Living in a Spanish-speaking household outweighed income on being a computer user. Even Latinos with higher incomes are less likely to be computer users.
- **Education -** also a powerful positive predictor of being a computer user, having an email address, and having a home computer and Internet access. This effect was separate from the effect of income, meaning that respondents with more education are more likely to be computer users and have home access, regardless of income.
- **Disability –** residents with disabilities are less likely to have access to cell phones and computer-related technology, and among computer users, they tend to use computer for fewer things and express less comfort with several computer tasks. This gap in IT access is particularly troubling because the use of technology, both standard IT technology and specialized assistive technology has proved to be a powerful tool in improving access to education and employment for people with disabilities. This finding suggests that improving access to IT technology for residents with disabilities may critically improve access to civic or community involvement.

In a community with such a high level of technology adoption, it is tempting to conclude that the digital divide is closed. However, as both the survey results and focus group findings confirm, some – and often the most vulnerable or marginalized residents – still struggle with digital inclusion. In a community with increasing emphasis on digital communication, this can result in exacerbated exclusion or marginalization. This issue was discussed well in the African American focus group where participants themselves were technologically well connected, but clearly aware of the exclusion of more vulnerable community members.

Cable TV

Subscription to Cable TV has increased from 63% in 2000, to 65% in 2004, and 69% in 2009. Nearly half (45%) of non cable subscribers have subscribed in the past. Nearly four in ten of these 334 dropped cable because of its cost. About 60% of both current and former subscribers, including those who dropped because of cost, were aware of the cable package for less than $20. Other groups who may have relatively limited incomes, including seniors 65 and older; people with household income below $40,000 per year; people with a disability; people who were not working at a paying job, were less aware of the lower cost cable option, pointing to a possibly important gap in information access.

Comcast has 89% of the Seattle market, up from 81% in 2004. Most Comcast subscribers (89%) were "(very) satisfied" with the company's customer service, up from 79% in 2004. Former Comcast subscribers, although nearly three-fourths rated themselves as "(very) satisfied" overall, were more

likely to say they were "(very) dissatisfied" than current subscribers (27% vs. 11%). Satisfaction with Broadstripe/Millennium's customer service decreased from 80% "(very) satisfied" in 2004 to 48% in 2009. Common unresolved problems with cable service are "service/intermittent outages/stations" and "reception/picture quality/local channels especially".

Respondents who spoke a language at home other than English or Spanish, those with less than post graduate education, and those earning less than $40,000 per year were most likely to be aware of the cable office. Women, African Americans, Latinos, including those who speak Spanish at home, and people with a disability are more likely to want to be contacted by the Cable Office, as are people with less education, people without paying jobs, and people with less income.

Cell Phones

The percentage of Seattle households with cell phones has increased from 70% in 2004 to 86% in 2009. Access to a *personal* cell phone increased from 47% in 2000 to 80% in 2009. Households with cell phones have an average of two per household. Overall, the number of cell phones per household very closely tracks the number of adults per household. About a quarter of the non cell phone users have had a cell phone in the past and about one-third of these cited the high cost of service as the reason for dropping it.

Certain demographic groups or less likely to have cell phones, including people with disabilities, seniors 65 and older, people who do not work at a paying job, people with household incomes of less than $40,000, people with no more than a high school education, and people living in Spanish-speaking households.

With few exceptions, those who use only a cell phone and do not have a landline were similar to those with a landline in terms of their technology access, though they may differ in their technology use. They are equally likely to have cable TV, be computer, Internet, and email users, and have a computer and Internet access at home and Internet access on a mobile device. They are equally likely to indicate using computers for most of the tasks listed, and they are as varied as others in where they use computers. Some differences suggest they may be more technology oriented on their interactions with others, being more likely to contribute to a blog or wiki, more likely to use a social networking site, more likely to want to make contact with the government on the web or via email and less likely to make contact by telephone, in person, or in a letter. *Cell phone only users prefer a web or email survey for communicating their opinions to the City*.

Computers and the Internet

The percentage of Seattleites who are computer users, and the percentage with email addresses have remained stable at about 86% since 2000; however, the percentage with home computer access, home Internet access, and especially high speed home Internet access has increased significantly over the years, and the increase in high-speed access since 2000 has been steep. In 2009, three-fourths of computer users use computers daily, especially if home is where they do most of their computing. Eight in ten with email check their email daily. Daily use of both computers and email is higher

among Caucasian respondents and lower among Latino respondents who speak Spanish at home, even if they have home access.

Responses reflected tension between the affordability of Internet service, and a desire for faster Internet service that can be seen across the spectrum of current access speed. Three-fourths of respondents said that significantly faster Internet access would be somewhat or very valuable. At the same time, about half said that improving the cost of their Internet service is the one thing that would improve it the most, and 40% of those who have had home computer or Internet access in the past but not currently identified cost as the barrier.

Even though the percentage of computer users in Seattle has remained stable since 2000, the level of experience with computers has increased. In 2009, nearly all computer users have installed new software and three-fourths have used social networking sites, such as Facebook, MySpace, or LinkedIn. More computer users are "very comfortable" searching the Internet than sending and receiving email attachments, or opening and saving a file, suggesting that the most common use of computers today is as a way to access the Internet. This finding was consistent across many subgroups with the following exceptions:

- Latino respondents showed a decrease in computer experience, probably due to the relatively high number of respondents in this group without access to computers or the Internet. *Computer users* in this group increased in experience similarly to other groups;
- Computer-using seniors, with the most room for improvement across the age groups, improved the most in their computer experience. This could be due to learning in the senior subgroups, or may be due to the higher level of experience added to the "senior" group by computer-experienced individuals newly "recruited" into that group by aging;
- People with less than a high school education seem to be losing ground with computer experience. Although this demographic group is far likelier to be computer users than their counterparts nationwide (61% vs. 18%)[2], they are far less likely to be computer users than Seattle's most educated respondents (96%). This may point to a need for outreach efforts with reduced literacy demands to high schools, community college adult basic education/GED classes, and out of school youth.

"Home" is the place where 70% of those naming one location and 96% of those naming two locations do "most of their computing." It is not clear how frequently this reflects optimal home access or limited access in other locations. People with more education were more likely to name more than one place where they do "most of their computing," especially "work." As income increases, the percentage who name home as a primary computing location decreases in an almost mirror image of the increase in the percentage who name work as a primary location. Daily computer and email use increases with both education and income.

Public libraries were mentioned in focus groups as a trusted place for accessing computers, and in this survey, though not named as a *primary* location for many, library computers were primary for

[2] http://www.usatoday.com/tech/news/2009-06-03-internet-use-broadband_N.htm

more people in certain subgroups, including people who do not work at a paying job, people with disabilities, and African American computer users and computer users of "other" ethnicities. A quarter of those who go to the public library for "most of their computing" do so daily.

Of respondents without home computer or Internet access, one-fourth of those who speak English at home say it's because they don't want or need it, compared with only 5% of respondents who speak Spanish at home and 13% of those who speak other languages at home. Correspondingly, a participant in one of the English-speaking focus groups commented that anyone who wants a computer at home has one. It is possible that the accuracy of this remark may depend, at least in part, on English proficiency. Latino respondents, respondents with less education, and younger respondents were more likely to mention a cost barrier.

Review of the adoption of high-speed access over time shows a delayed adoption of high-speed Internet access by age so that the younger groups adopted high-speed access first; the oldest group adopted it last. Interestingly, younger people in the sample, more likely than older to mention cost as a barrier to home computer or Internet access, may be returning to dial-up access, especially if they have a mobile Internet device.

Business and Economic Development

Computer users were asked questions about using the computer and Internet to do business locally. Most (80%) of the computer users said that they had used the Internet in the past year to find information about local businesses, up from 2000 (61%) and 2004 (71%). More than half (55%) said they had purchased goods or services from local businesses over the Internet in the past year.

Respondents were most favorable about the ideas of a central directory online for all Seattle businesses, and more local businesses coming up when searching the Internet as ways of making it easier for them to find or purchase from local businesses on the Internet, and least positive about the idea of receiving email notices about local products or services of interest. Respondents seem to want convenient access to information about local businesses, but are not as eager to have those businesses contact *them*.

Telecommuting

Two-thirds (66%) of the computer users who work at a paying job reported that they use the Internet to work from home. This could include working from home for an employer, or using the Internet to operate a business from home. Telecommuting increases with income and education, and is less common among African American and Latino respondents, who are also less likely to name "work" as a location where they do "most of their computing" and who are less likely to have home computer or Internet access. About a quarter of telecommuters (compared to 16% of other respondents) have premium or business class Internet access and 85% say that significantly faster Internet access would be valuable (compared to 70% of other respondents). Reasons given by respondents for not working from home, or for not working from home more often, had more to do with work or person constraints (needing to work with a team, type of job does not permit telecommuting, too distracting at home) than technology issues.

About four in ten of the computer users said that the Internet saves them "a lot of driving." This response was more common among telecommuters and people with disabilities, and less common among seniors, perhaps pointing to a way to help seniors retain some independence after they give up driving.

Communication With Government

The percentage of respondents using the City's website, Seattle.gov has increased steeply since 2000 when about one-third said they had visited the website. This increased to 56% in 2004 and again to 78% in 2009. About two-thirds of the visitors say they use the website at least occasionally. The most common reason given for not using the website more often is because of having no need for it. Demographic subgroups more likely to use the website and/or likely to use it more often, including employed respondents; those with more education; those with more income; those who speak English at home; and those in the middle age groups. Groups that are less likely to use the website include people with disabilities, African American or Latino respondents, and seniors. Seniors have been slow to come to the website, with 19% of seniors visiting the website in 2000, increasing to 24% in 2004 and doubling in 2009. As with other changes among seniors, this increase could be due to growing acceptance and comfort with computers among this demographic group, or a changing composition of this demographic group as "new" seniors, perhaps more comfortable with technology, are "aged in."

Nearly two-thirds of respondents offered some ideas for information that they would like to get from the City. Some suggestions included activities, interests, and events around the city; information to enable them to monitor City business, both in terms of tracking the progress of public projects, and in terms of budget transparency; information about how the City is improving its functioning and its preparedness for events such as the snowstorm that hit the City around the time of the telephone interviews; services provided by the City; information specific to local neighborhoods or communities; information about transportation, such as road closures, traffic accidents, and realtime transit tracking.

Seattle Community Access Network (SCAN)

Thirty-eight percent of respondents indicated that they have seen the Seattle Community Access Network (SCAN), a decrease from 49% in 2004. Most of the people who have seen SCAN tend to watch it infrequently. Despite this decrease in viewership, as many respondents as in 2004 (more than 80%) continue to think it is somewhat or very important for residents and community organizations to have the opportunity to create and show their own local programs.

Respondents who speak a language other than English at home are half as likely to have seen SCAN. Latino respondents who have seen the channel, along with African American respondents, tend to be more frequent SCAN viewers and rate it as more important. Men are more likely to have seen SCAN, and the percentage of people who have seen SCAN increases with income, though the importance rating of a public access channel decreases somewhat.

Computer safety and security

Respondents are divided about the adequacy of precautions for children to access the web safely. About half do not believe they are adequate, and 16% don't know. Men are more confident than women in the precautions and younger respondents are more confident in them than older respondents.

Confidence in the privacy and security of online financial transactions has increased somewhat since 2000, but respondents are cautious with only 21% of respondents saying they are "very confident (5)" in the privacy and security of these transactions, up from 15% in 2004 and 12% in 2000. The average confidence rating in 2009 was just past the midpoint of the scale in the positive direction. However, concerns about Internet safety and security were voiced in nearly all of the focus groups, indicating it is a significant issue for at least some residents.

Correspondingly, demographic subgroups have different opinions about this issue. Groups with less confidence include: African American and Latino respondents; people with disabilities; seniors; respondents with less education; those not employed at paying jobs; and those with less income. Along with Asian/Pacific Islander respondents, these are the same groups that are more interested in receiving information from the City about protecting themselves and their computer against unsolicited ads, viruses, and other computer threats.

In 2000, women's confidence in this aspect of Internet use was lower than men's, but it has increased since then to nearly equivalent levels. However, women were significantly more likely to want to.

Importance of Computer and Internet Access

Seattle residents value access to computers, high-speed access to the Internet, and the training to use them - not just for their own households, but for adults and Seattle households in general. About as many respondents in 2004 and 2009 think adults' access to computers and the Internet is important, but 2009 respondents think it is *more* important, with 78% giving it the highest importance rating in 2009, up from 64% in 2004. About the same percentage believe that Seattle residents need access to free or low cost training on how to use computers and the Internet. Nearly half say that it is "very important" for all Seattle households to have high-speed Internet access and another 40% say it is "somewhat important." Those with high-speed access and those with no access gave this item higher ratings.

Respondents were not as positive about the importance of computer and Internet access for children. Only about half of the respondents believe that children's access is very important, and these ratings have not changed since 2004.

The importance rating for adults' access increased more among the older respondents, perhaps because seniors are becoming more aware of the role of computers and the Internet or perhaps because "new" seniors who have been "aged in" to the senior category brought with them their firsthand understanding of the value of this access.

Younger respondents gave lower importance ratings to children's access, possibly because they may have been considering children young enough to be their children.

Latino respondents, with less access than other groups, gave lower importance ratings to adults' computer and Internet access, but with African American respondents were more likely to agree that free or low cost computer training should be available to Seattle residents, indicating some of the same groups identified in the focus groups as in need of affordable and accessible computer training. African American and Latino respondents also gave the highest importance ratings to high-speed access for Seattle households which, as a group, they were less likely to have. Caucasian respondents and those who speak English at home rated children's access as more important than others, suggesting a possible cultural divide in perceived importance with potential multigenerational consequences.

The importance ratings for children's and adults' computer and Internet access and high-speed access for households increase with both income and education. The relationship with free or low cost training is not as clear, but may *decrease* with increased income or education. Other groups that rated computer and (high-speed) Internet access as important include employed respondents and current computer users.

Non computer users are as likely as or more likely than computer users to agree that Seattle residents need access to free or low cost computer and Internet training.

Community Building and Civic Participation

Just over half of the respondents participate in a community group and not quite as many get information about their local community via a website or email list. In the open ended question asking what residents want to learn more about on the City's website or cable channel, more than 10% were interested in learning more about their neighborhood or community. People with this interest were not more likely to belong to a community group or email list, or visit a website to learn more about their local community. Information about the community groups, websites, or email lists these respondents had in mind could be an easy step toward community building.

Latino respondents are least likely to participate in some type of a community group or connect electronically with their community. African American respondents were more likely to participate in a community group, but not electronically. Caucasian respondents were most likely to participate both in person and electronically. Community involvement increases with age, but electronic community involvement is less likely among the youngest groups and oldest groups. Respondents with disabilities are less likely to connect to the community electronically. Participation in a community group, either in person or electronically, increases with education and with income.

More Seattle residents are using the Internet to access government information, from 54% in 2000, to 60% in 2004 and 74% in 2009. A significant ethnicity gap emerged with this question so that only one third of Latino respondents – and only 15% of those who speak Spanish at home – have used the Internet in the past year to access government websites. This finding dovetails with the comment of

a focus group participant that one of the most debilitating aspects of insufficient English proficiency and lack of computer access is not knowing the status of immigration reform. Caucasian and Asian/Pacific Islander respondents prefer making contact with the government electronically, while African American and Latino respondents prefer telephone, written or in person contact.

Respondents with disabilities are also less likely to use electronic means to get government information or to prefer electronic means to make contact with the government. These disparities might reflect an under use of assistive technology to permit individuals with certain types of disabilities to access web pages, or it could reflect web pages that are inaccessible for people with certain types of disabilities, even if they are using assistive technology, or it could reflect a lack of training or awareness on the part of the individuals with disabilities.

A decreasing percentage of residents believe that email and the Internet are NOT effective ways to communicate their opinions about issues that affect them in their communities, down from a quarter in 2000 to one-fifth in 2004 and 13% in 2009. Looking at the average effectiveness rating, the greatest change was between 2004 and 2009. Residents are less confident that email and the Internet are effective ways to communicate with elected officials, although that rating too has increased steadily since 2000. In a different view, one focus group participant who had worked in state government commented that email provides unprecedented access elected officials. Seniors are more likely to maintain that these tools are ineffective for both purposes. As education or income increases so does the preference to make contact with the government through electronic means. The use of the Internet to obtain government information also rises with education. This use of the Internet has increased for all education groups since 2004 except those with the least education, pointing to a persisting digital divide.

Focus Groups

Focus groups with immigrants who may have been prevented from participating in the telephone survey due to a language barrier reveal that these residents are less connected. They are likely to have home computer or Internet access (59%, 45%), or Internet access via a mobile device (10%). They are also less likely to be computer (67%), Internet (58%), or email (62%) users comfortable with email attachments (34%). Forty-three percent of the immigrant focus group participants check their email daily. Forty-four percent of the same groups assessed their computer skill as “none or not very skilled” and another 30% selected “know what I need to know,” so about three-fourths of the participants in the immigrant focus groups have modest computer skills. Participants are about as likely to have cable TV as the survey respondents and somewhat less likely to have a cell phone (74%). Only 53% have a land line.

About three-fourths of the participants were satisfied with the speed of their Internet connections and even more with the reliability. However, only two-thirds were satisfied with the customer service and just over half were satisfied with the cost. Correspondingly, about half said that improvement in price is the one thing that would most improve their Internet service, followed by speed (28%). Few pointed to either reliability or customer service.

Focus group participants overall want to use computers and the Internet, but all see a number of barriers standing in their way. Additionally, parents expressed their concerns and frustrations with not being able to monitor their children's computer use because of not understanding either the language or various websites. Thus parents with limited English and computer skills are in a position of denying their children access to computers and the Internet in an effort to keep them safe with the unwelcome consequence of making it more difficult for them to be successful at school, or allowing them essentially unsupervised computer and Internet access.

In each group, participants mentioned the value of computers and the Internet for keeping in touch with family and friends, including those from overseas, searching the Internet for information related to health, the local community, employment, education, local and global news, for entertainment, and for learning and maintaining their mental acuity. Despite usually well understood reasons for wanting access to computers and the web, focus group participants describe their struggles with getting online and the resulting sense of being left out or left behind. When one focus group participant among the public policy graduate students supplemented a question about the importance of access by asking the participants to consider trying to conduct their lives without the support of computer access, the participants used words like, "disaster," "constricted," "insane," and "cry" to describe their imagined lives. Of course, many of the participants in the immigrant focus groups live their lives not only without the support of a computer, but for many, without being able to communicate effectively with others around them. Several levels of barriers were identified:

1) **Getting access to the tools.** Participants noted that computers, and especially monthly Internet access fees are expensive, relative to their modest incomes. Although groups varied in their awareness of community technology centers and other locations for public access computers, all groups were aware of the public access computers available in public libraries, but noted that these can be difficult to use these because of the short time allowed, the sometimes inconvenient hours of the library, lack of skill, not having any staff available to help, and a language barriers that makes asking for help more difficult. Further, the public library does not always have computers available in the specific language needed, such as Chinese, Korean, Vietnamese, or Spanish. Individuals from these groups must look elsewhere for their computer access.
2) **Learning how to use the tools and remain safe.** Some focus group participants said that even if they can get to a computer at the library, they don't know what to do then – they just sit there and look at the blank screen. Some asked just for enough help to learn how to turn the machine on, saying even that would give community members a big boost. In each group, participants mentioned the lack of user-friendly, patient, affordable, language-appropriate computer training with an instructor available to respond to questions. All groups called for such training. Participants also identified the need for language-appropriate computers to practice on between classes to help them learn and retain the material from the previous class. Participants in each group, and 28% of the survey respondents, are concerned about viruses, hackers, spam, and the risk of theft of personal information. Initiatives to help groups that are not currently online become connected must

address these fears, and fears mentioned in several of the groups about "too much access" and the isolating effect computers can have on some individuals.

3) **Language-appropriate content:** Even when residents gain access to the tools and learn how to use them, they immediately confront a language barrier when searching local and government websites. Thus, groups also expressed interest in translated websites and in finding classes to help them improve their English skills, with some suggesting that they might be able to use computers for that purpose.

Participants would like to find local and government news on the City's website, as well as information about their local neighborhoods – in a language they can understand or in pictures or videos so that language is not as important. Many asked for a calendar of events, and for employment and educational information, including computer and ESL classes, crime and safety updates, alerts, events and activities, and ways to become involved in their communities. At least one person in most groups wanted the City's website to provide information and support for starting or maintaining a small business in Seattle. One person described in great detail a government-sponsored program in his native country that very successfully incubated small businesses.

Some focus group participants suggested doing community service in exchange for computer training. Perhaps a system could be developed in which individuals who receive computer training give back by directly or indirectly providing relevant translation services for other in the community – for example, translating information on a website or in a pamphlet to tell others how to get training or computer access – or helping other community members get online or learn to monitor their children's computer use.

Participants were mixed in how they want to make contact with and get information from the government. Participants most often selected "On the web or email," the mode preferred by most of those with email access. But participants expressed the concern that relying exclusively on electronic means would push people without access "out of the conversation." Participants were otherwise fairly evenly divided in their preference for in person, telephone or postal mail contact.

When asked how others might be made more comfortable communicating with the city using electronic means, one person asked to receive a telephone call carefully explaining the procedure. In another group, a participant suggested small training events dispersed throughout the city. A participant in another group suggested the provision of training programs in locations the target community already uses, with the capacit for a person to be able to respond quickly to the questions of learners. These participants also suggested staffing public access locations so that new users can have their questions answered promptly, in a language they understand.

Most often, focus group participants look to the TV news for information from the City, followed by notices in the mail, and newspaper articles. About one-quarter each selected the City's website or cable channel (both visited or seen by about half the participants), the radio, or email (if messages are infrequent, important, short, and in the appropriate language).

Detailed Findings

Technology check list

Summary: Seattle households are online. Most survey households (88%) report having a home computer with Internet access (84%), and most of that access (74%) is faster than dial up. These figures are well above the national average of 62% of households with Internet access and 51% with high speed access. High speed access in Seattle has increased steeply from 18% in 2000, to 42% in 2004, and 74% in 2009. However, half of those with high speed access are concerned about its cost and another quarter want even faster access. Cost may be the reason that no more than 15% of Seattle households subscribe to the faster premium or business class Internet access, despite the desire for more speed. Analysis shows that income is the only demographic related to subscriptions to premium or business class high-speed Internet access.

The adoption of other technologies is also increasing, but more slowly. For example, cable service subscription has increased slowly from 63% in 2000, to 65% in 2004, and 69% in 2009; and cell phone subscription rates have increased from 70% in 2004 to 86% in 2009, often with more than one cell phone per family in 2009. Focus group results show that among residents younger than 65, even subpopulations with low rates of computer/Internet access have relatively high rates of cell phone subscription.

Adoption of emerging technologies such as a mobile device for accessing the Internet, now at 35%, or WiFi Internet access, now at 7%, may show steep increases in the future.

Many factors were associated with technology access, including:

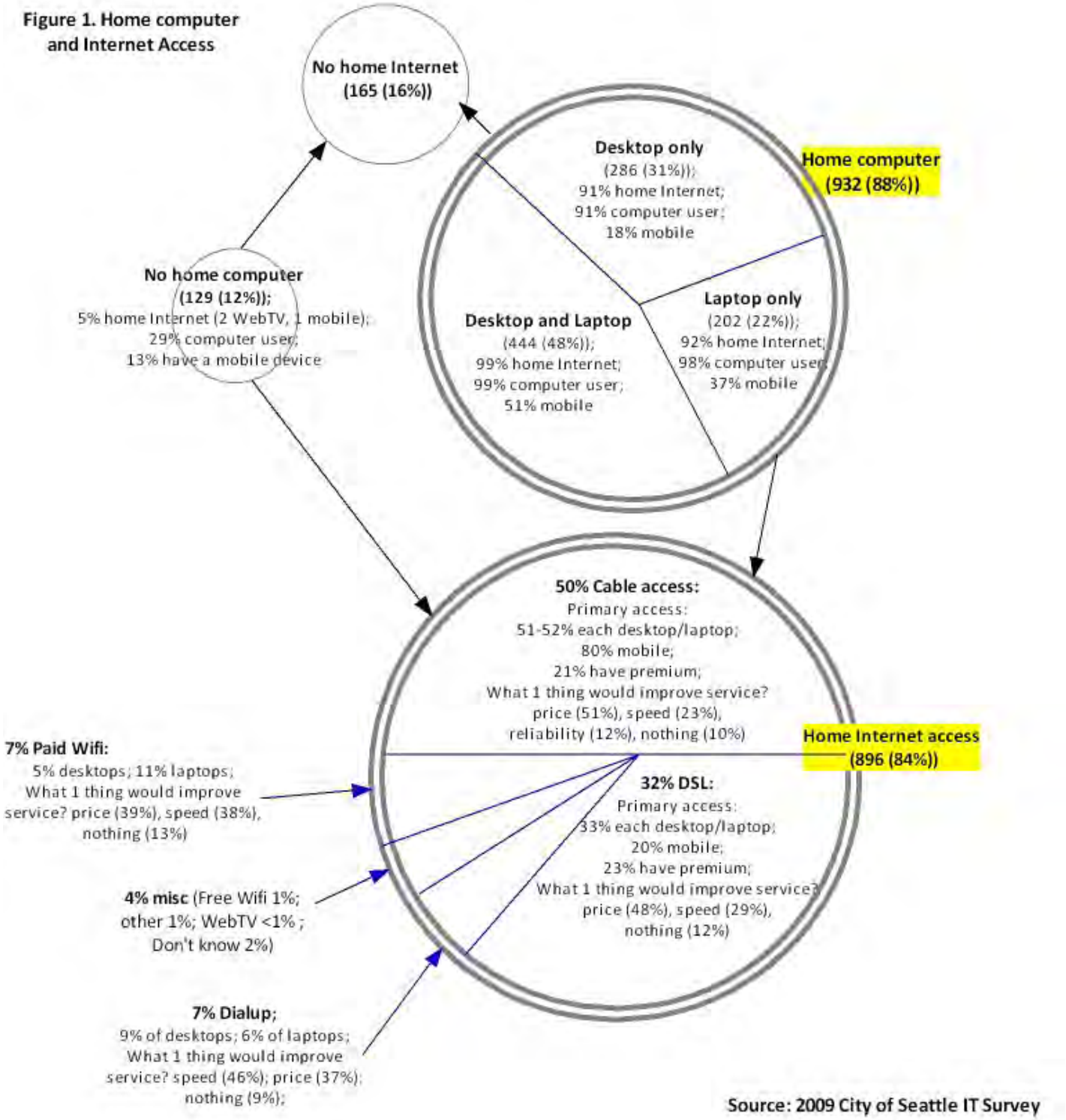
- **Age** - seniors are less likely to have a cell phone, be computer users, have a home computer or mobile device, have home Internet or an email address
- **Race/ethnicity**
  - Latino households are less likely than other households to have access to most technology except cell phone and satellite TV. This pattern is more extreme among Latinos who speak Spanish at home, although even among primarily English-speaking respondents, Latinos are less likely to have a home computer or Internet access, an email address, or have been a computer user for longer than one year. This result may reflect an actual change in the community, perhaps due to changes in immigration patterns, or it could be a result of the more intensive efforts to recruit Hispanic respondents for this survey, perhaps tapping into an established demographic, but for the first time;
  - African American respondents are also less likely to have home computers or home Internet access, especially high-speed access. These respondents also report using computers for fewer things, and less computer experience overall.
  - Overall, African American computer users and Hispanic/Latino computer users reported using the computer for fewer things, and less computer experience overall.
- **Income** - positively associated with, and the most powerful predictor of, access to most technology in the checklist. As income goes up, so does access to and use of technology. Living

in a Spanish-speaking household outweighed income on being a computer user. Even Latinos with higher incomes are less likely to be computer users.

- **Education -** also a powerful positive predictor of being a computer user, having an email address, and having a home computer and Internet access. This effect was separate from the effect of income, meaning that respondents with more education are more likely to be computer users and have home access, regardless of income.

Figure 1 provides a graphic illustration of how Seattlelites get online, and what they most want to improve their online experience: *price* is first for those with DSL or cable access; *speed* for those with dialup access. *Better reliability* was mentioned third among households with high-speed access.

Figure 1. Home computer and Internet Access



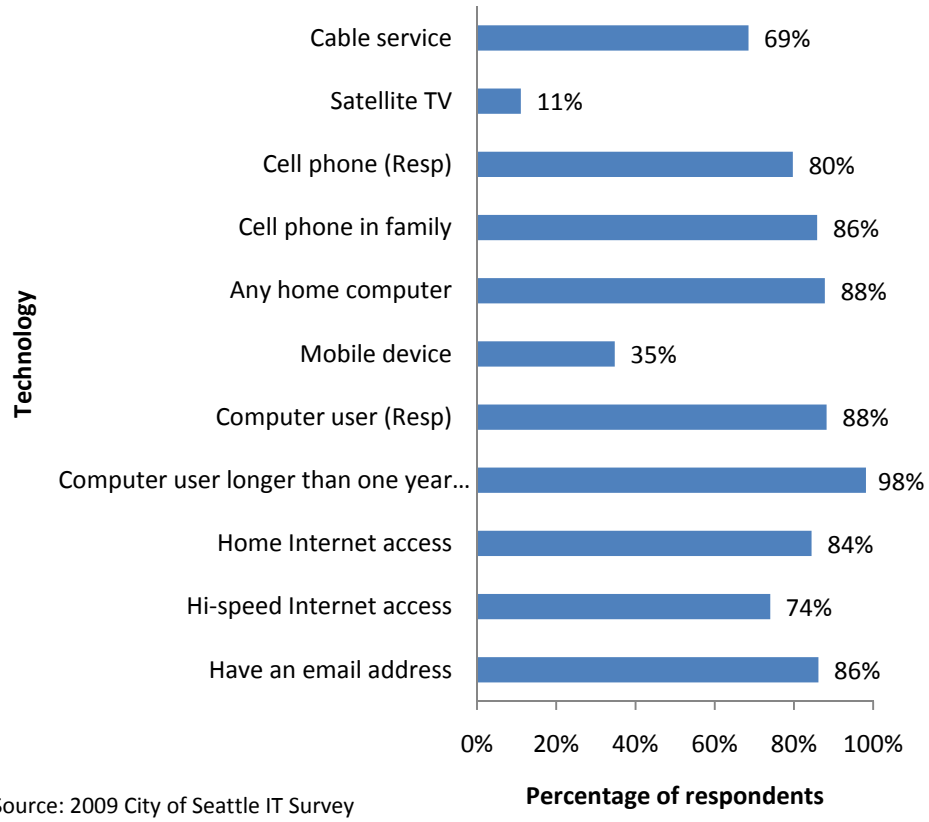
Source: 2009 City of Seattle IT Survey

The top large circle in Figure 1 shows that 932 people, 88% of the sample, have home computers, and the bottom large circle shows that almost as many (896 or 84% of the sample) have home Internet access, more than the national average of 62% reported in a recent report (June 2009) in *USA Toda*[3]*y*.. The top large circle is divided into wedges, representing the type of home computer reported: nearly half of the 932 with computers (444 or 48%) have both a desktop and a laptop, while 286 (31%) have a desktop only and 202 (22%) have a laptop only. Each wedge shows additional information about the different households. For instance, almost all (99%) of those with both a desktop and a laptop have home Internet access and half (51%) also have a mobile device. In contrast, not quite as many (91%) of those with a desktop only have home Internet access, and only 18% of these also have a mobile device. More than one-third (37%) of households with a laptop only also have a mobile device.

The bottom large circle in Figure 1 is also divided into wedges depicting how the households get their connectivity. Each wedge contains more information about the Internet usage and need of each type of household. The primary Internet access of half of Seattle's households comes through the cable company and one third comes through DSL. Only seven percent still rely primarily on dialup. This pattern is roughly the same regardless of the different devices used to access the Internet, except for mobile devices. While half of those with Internet access using a desktop or laptop computer rely on a cable connection, this is the connection of 80% of people who use a mobile device primarily. Between 21% and 23% of cable and DSL customers subscribe to premium Internet service.

When asked what one thing would most improve service, about half of the respondents indicated price, regardless of whether they were cable or

Figure 2. Technology Checklist



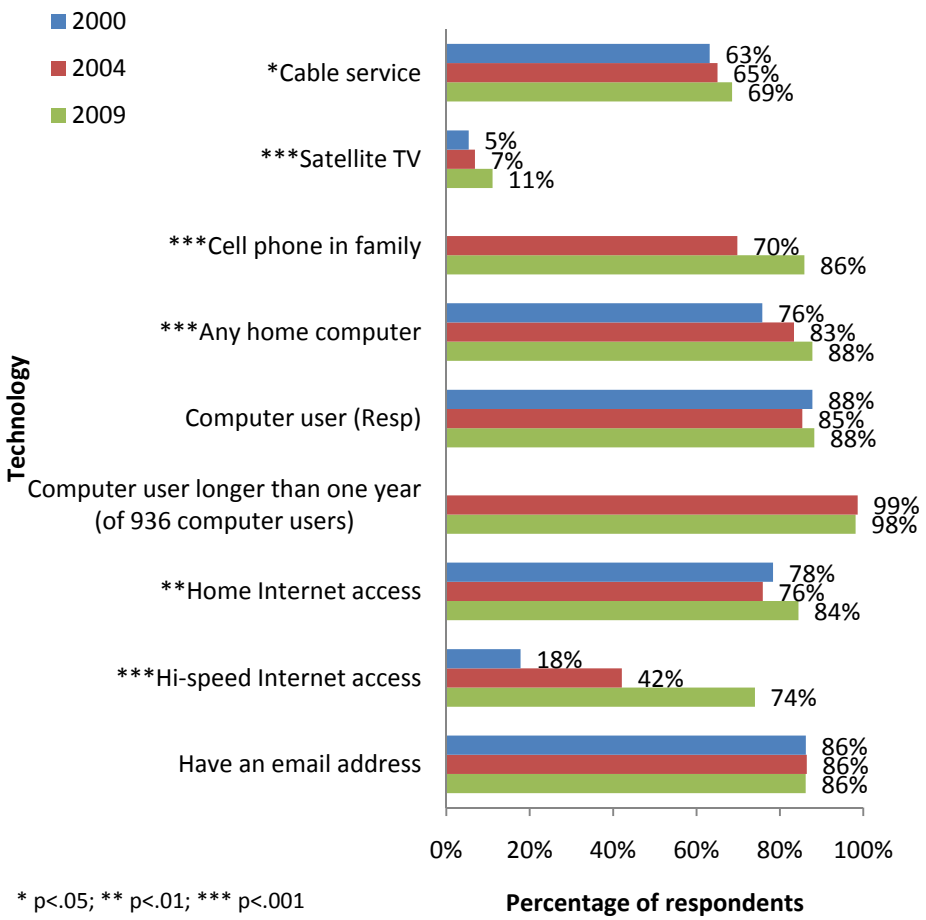
Source: 2009 City of Seattle IT Survey

[3] http://www.usatoday.com/tech/news/2009-06-03-internet-use-broadband_N.htm

DSL customers. About two in ten cable customers wanted faster speed, compared with about three in ten DSL customers. Seven percent of DSL customers mentioned reliability as the one thing that would most improve their Internet service, compared with 12% of cable customers.

Figure 2 shows that most Seattle households have at least one cell phone in the household (86%), and have cable TV (69%), and are connected with computers (88%) and the Internet (84%) via DSL, cable, or WiFi (high speed) (74% or 88% of households with Internet access) Although not much higher than the report in USA Today that nationwide, 82% of households with Internet access are using a high-speed connection. However, considering that only 62% of households nationwide have Internet access, only about half (51%) of households nationwide have high-speed access, much less than Seattle's 74%. However, in a community with such ubiquitous high-speed access, those without are at a greater disadvantage than in less well-connected communities. Eighty-eight percent said they are computer users, and 86% have an email address. Those who use a computer said that an average of 1.9 adults in their households have an email address. Nearly all of the computer users have used computers for at least a year. About one third of Seattle households have a mobile device.

Figure 3. Change in technology over time



* p<.05; ** p<.01; *** p<.001

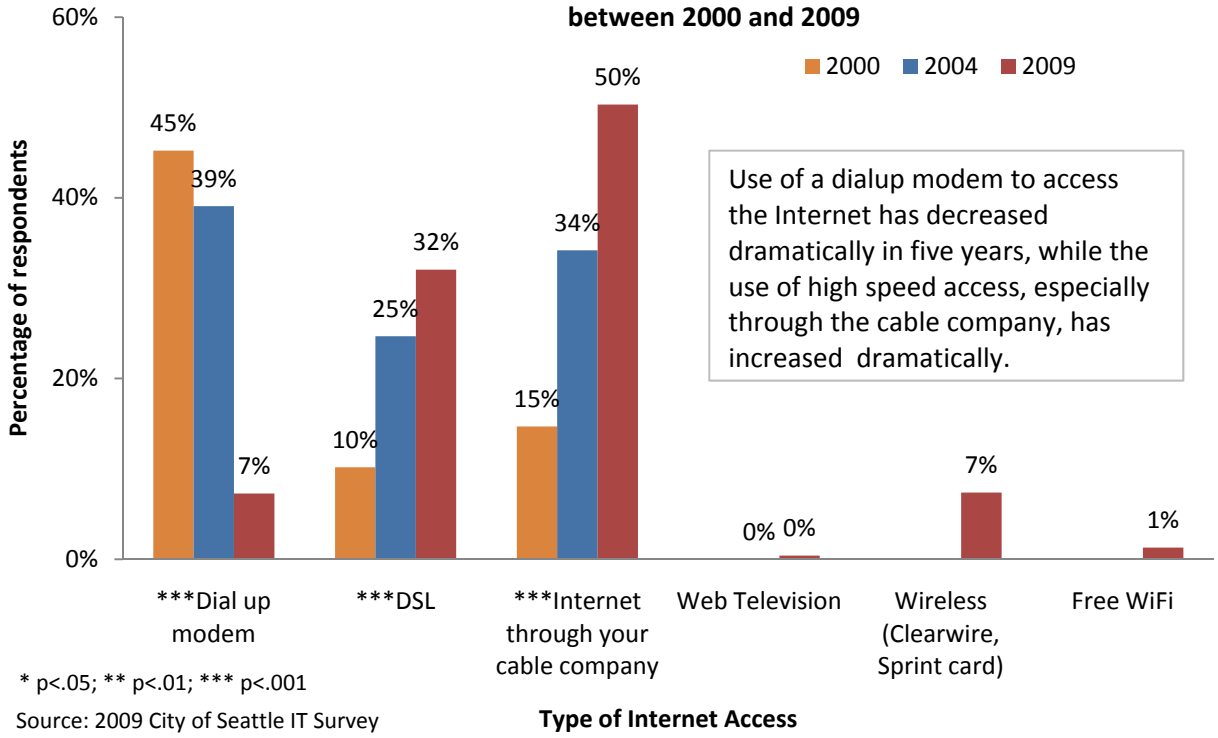
Source: 2000, 2004, 2009 City of Seattle IT Survey

Figure 3 shows that cable service subscription has increased slowly but steadily since 2000, as has the use of satellite TV. Having a cell phone in the household increased 23% between 2004 (when 70% of Seattle households had at least one) and 2009 (when 86% had at least one). By 2009, 80% of Seattle households had between one and three cell phones. Households with any cell phones had an average of two. Although the percentage of Seattle residents who are computer users has remained stable at about 88%, the percentage of *households* with computers has increased steadily and significantly since 2000, when three-fourths of Seattle households had a home

computer, up to 83% in 2004 and 88% in 2009. The percentage of households with Internet access has also increased since 2000 when it was 78%, to 84% in 2009. High speed access has increased steeply since 2000 when 18% of households reported high speed access (DSL, cable, or WiFi), to 42% in 2004 and 74% in 2009. Respondents with household computers reported that an average of 2.3 people in the household use the computer.

Figure 4 shows that among current Internet subscribers, the use of dialup access has decreased more than 80% since 2000, while the use of DSL and cable Internet access has more than tripled.

Figure 4. Change in type of connection to the Internet for current subscribers between 2000 and 2009



* p<.05; ** p<.01; *** p<.001

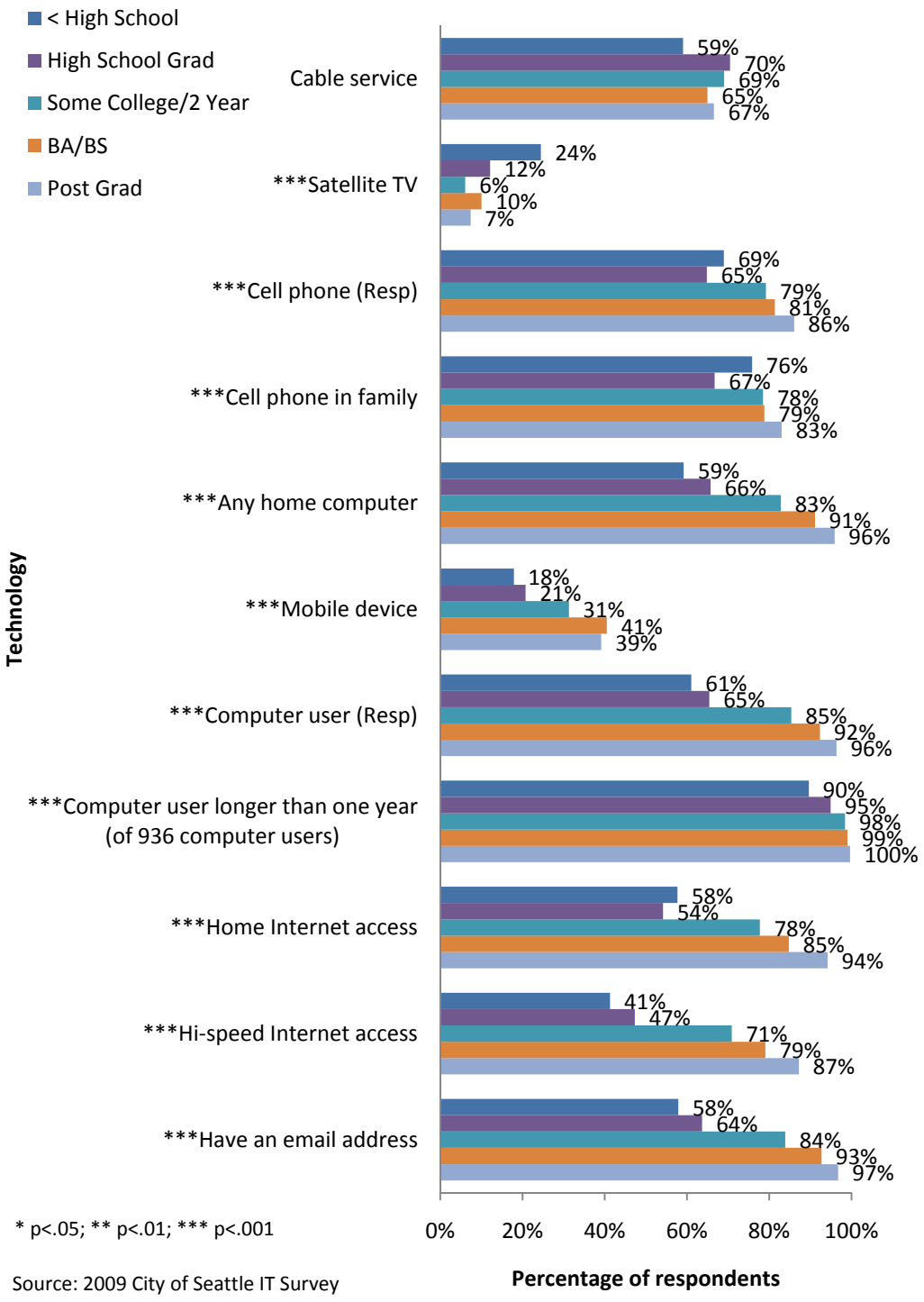
Source: 2009 City of Seattle IT Survey

This figure shows that wireless access is beginning to emerge with 7% of the survey respondents reporting wireless Internet access in 2009. Nearly one-fourth of those with high speed connections reported that they subscribe to business class or premium Internet access. Thus 15% of Seattle households overall have premium class Internet access.

Who does not have access?

With such high levels of adoption, it is important to ask whether those who are not connected belong to any specific subgroups. Demographic factors to be considered include income, age, education, gender, race/ethnicity, language spoken at home[4], disability status, and employment.

Figure 5. Access to most technology increases with education



* p<.05; ** p<.01; *** p<.001

Source: 2009 City of Seattle IT Survey

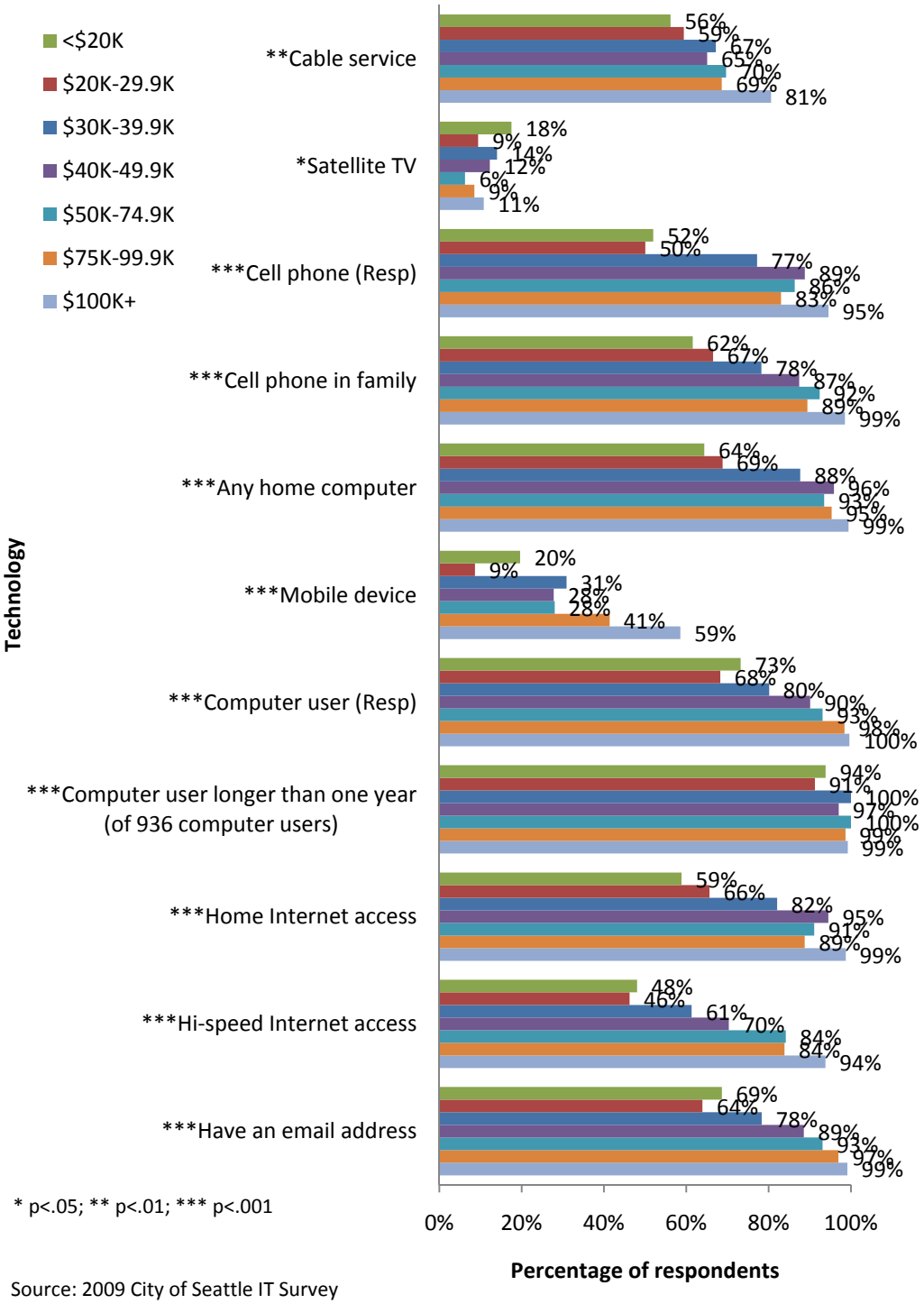
Correlation analysis showed that income and education were the strongest predictors of technology access at home. Figure 5 shows that as education increases, so does access to cell phones, home computers, mobile devices, home Internet, high speed Internet access, being a computer user, having an email address and length of time as a computer user. People with less education are more likely to

[4] Unweighted numbers are: English (940), Spanish (73), Other (39).

have satellite TV. No relationship was found between having cable service and education. Some of these relationships are more striking than others. For example, only 61% of respondents with less than a high school education said they are computer users, much higher than the nationwide 18% adoption rate by individuals without a high school diploma[5], compared with 96% of respondents with the highest level of education.

Figure 6 illustrates similar results for income. Note that access to and use of most technology is significantly related to income. Access to satellite

Figure 6. Access to technology increases with income



* p<.05; ** p<.01; *** p<.001

Source: 2009 City of Seattle IT Survey

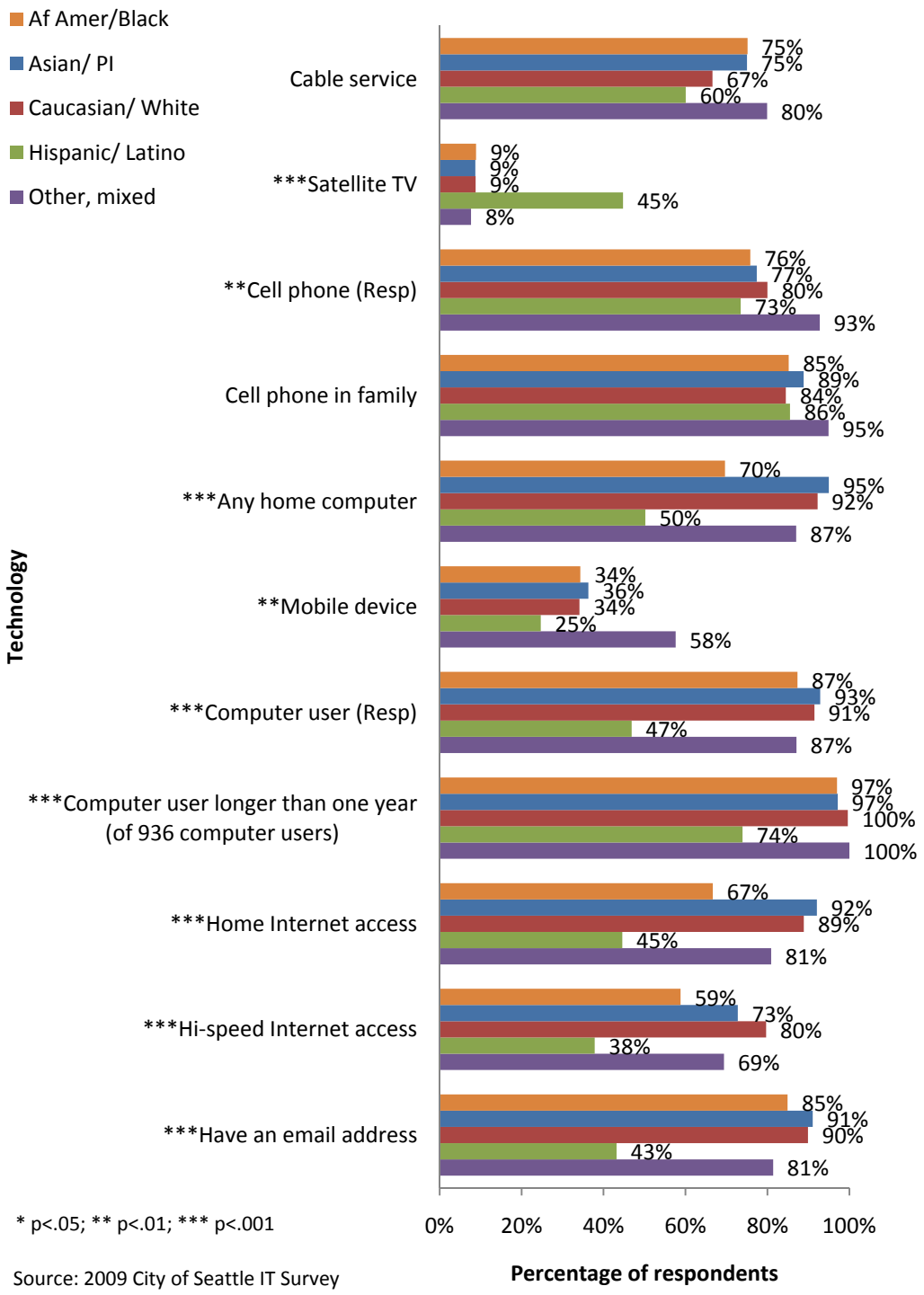
[5] http://www.usatoday.com/tech/news/2009-06-03-internet-use-broadband_N.htm

TV is inversely related to income, and the relationship between income and having been a computer user for longer than a year, although statistically significant, is not as dramatic as with the other indicators of access.

Income is the only demographic that was related to subscription to business or premium class DSL or cable Internet access.

Figure 7 shows the relationship between technology access and race/ethnicity. A significant relationship with race/ethnicity was found with most technology, except having cable service, or a cell phone in the family[6].

Figure 7. Access to most technology differs by race/ethnicity



* p<.05; ** p<.01; *** p<.001

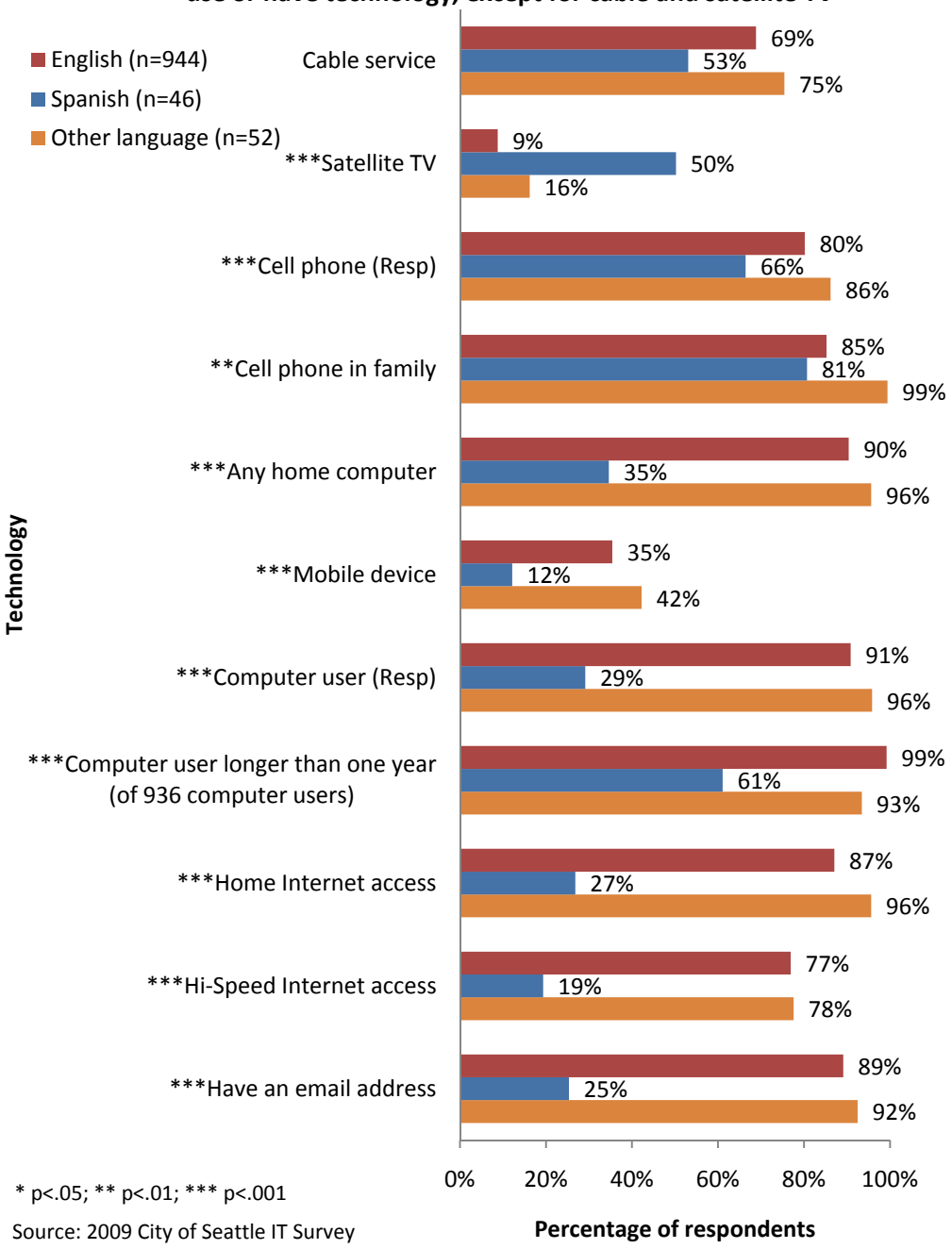
Source: 2009 City of Seattle IT Survey

[6] Unweighted, 34 individuals comprised the "Other/Mixed" ethnicity group. More than half indicated they are Native American (8) or Native American mixed with some other ethnicity (10). Each of the other ethnicities was noted, including African American/Black (11); Asian or Pacific Islander (7); Caucasian (15); Did not specify (5).

This figure shows that Hispanic/ Latino households are strikingly different from other households in their access to satellite TV (much higher) and computer-related technologies (much lower).

Although African American respondents are about as likely to be computer users and to have been computer users for longer than one year, and to have an email address, African American households are much less likely to have a home computer or home Internet access. USA Today reported that nationwide in 2007, 69% of Caucasians, 73% of Asians, 51% of African Americans, and 48% of Latinos lived in homes with Internet access. This study found substantially higher adoption among Caucasians (89%), Asians (92%), African Americans (67%), but the adoption rate among Hispanics is about the same (45%) as the nationwide figure.

Figure 8. Respondents who speak Spanish at home are less likely to use or have technology, except for cable and satellite TV



* p<.05; ** p<.01; *** p<.001

Source: 2009 City of Seattle IT Survey

Figure 8 shows a similar pattern to the one found in Figure 6, but more extreme. Respondents who speak Spanish at home are strikingly less likely to participate in all IT technology except cable TV where the difference did not reach statistical

significance, and satellite TV where they are strikingly *more* likely to subscribe, most likely because of the extensive Spanish programming available through satellite TV.

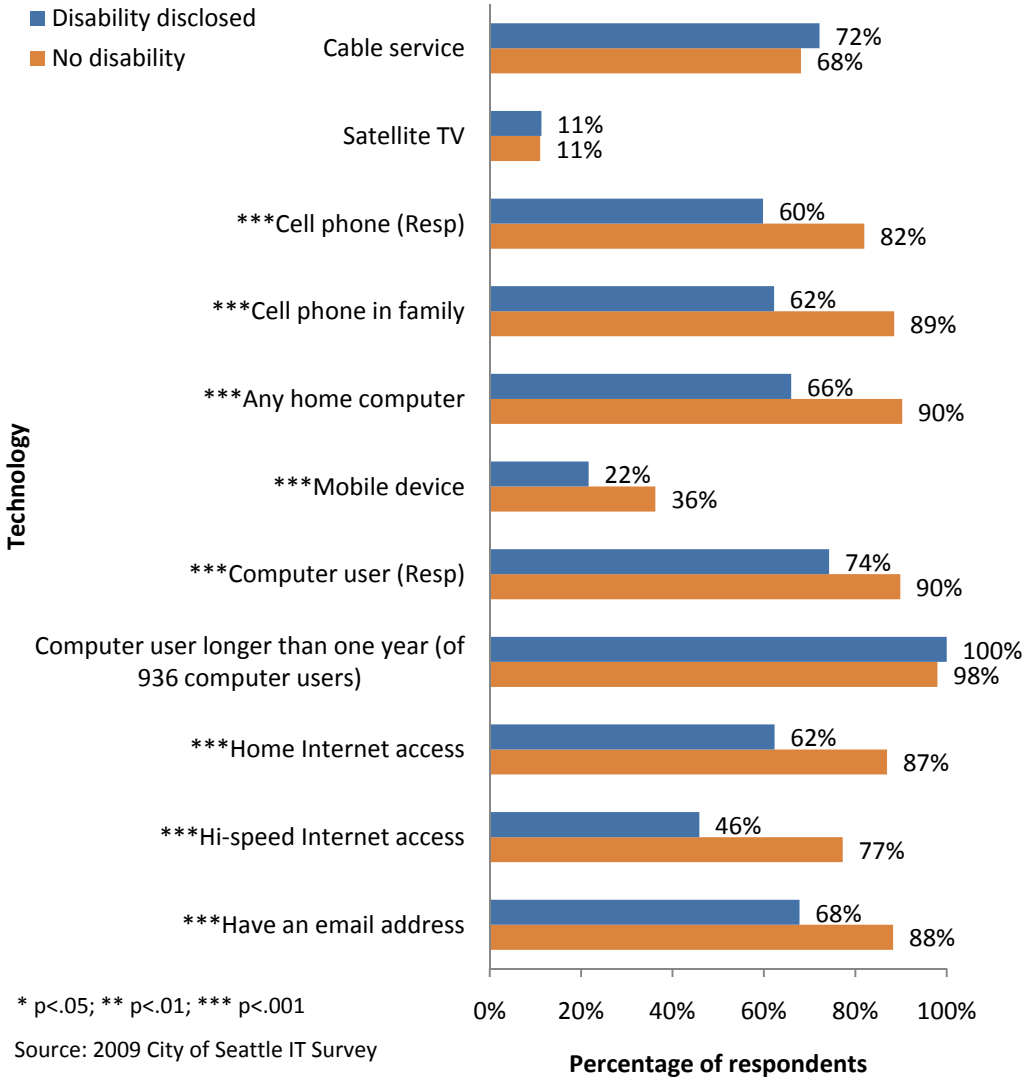
This figure shows that although many of the Spanish-speaking households have adopted cell phones (though still less than households that speak English or other languages[7]), they are far less likely to use or have home access to computer-related technology.

When the race/ethnicity analysis is recomputed without respondents who speak Spanish at home, many of the differences due to lower or higher Hispanic/Latino participation became non significant. Other differences became less extreme. Specifically, without the Spanish speaking respondents, no difference among the ethnic categories was found in cable service, satellite TV, personal cell phone usage or cell phone in the family, having a mobile device, or being a computer user. English-speaking Latino households remained less likely to have a home computer (86%), home Internet access (86%), have an email address (85%), and, among the computer users, the Latino respondents are more recent computer users, less likely to report having used a computer for longer than one year (84%).

About ten percent of 2009 survey respondents reported that they have "a disability, handicap, or chronic disease that keeps [them] from participating fully in work, school, housework or other activities." This is similar to the figure of 13.8% of Seattleites older than five years, estimated by the American Communities Survey of the U.S. Census Bureau. Figure 9 shows that residents with disabilities are less likely to have access to cell phones and to computer-related technology than residents without disabilities, although they are as likely to have access to cable and satellite TV. Although less likely to be computer users overall, people with disabilities who do use computers are as likely to have been using them for more than one year.

[7] Unweighted, 39 people comprised the group of respondents who speak "other languages" at home. Languages include Vietnamese (6) and Cham (2), Chinese (5), Filipino (3), Somali (3) and Ethiopian (1), Portuguese (2), Russian (2), German (2), and one each Arabic, Bengali, French, Italian, Japanese, Laotian, Latvian, Malaysian, Misteco, Polish, and Thai.

Figure 9. Disability
People with disabilities are less likely to have access to most IT technology



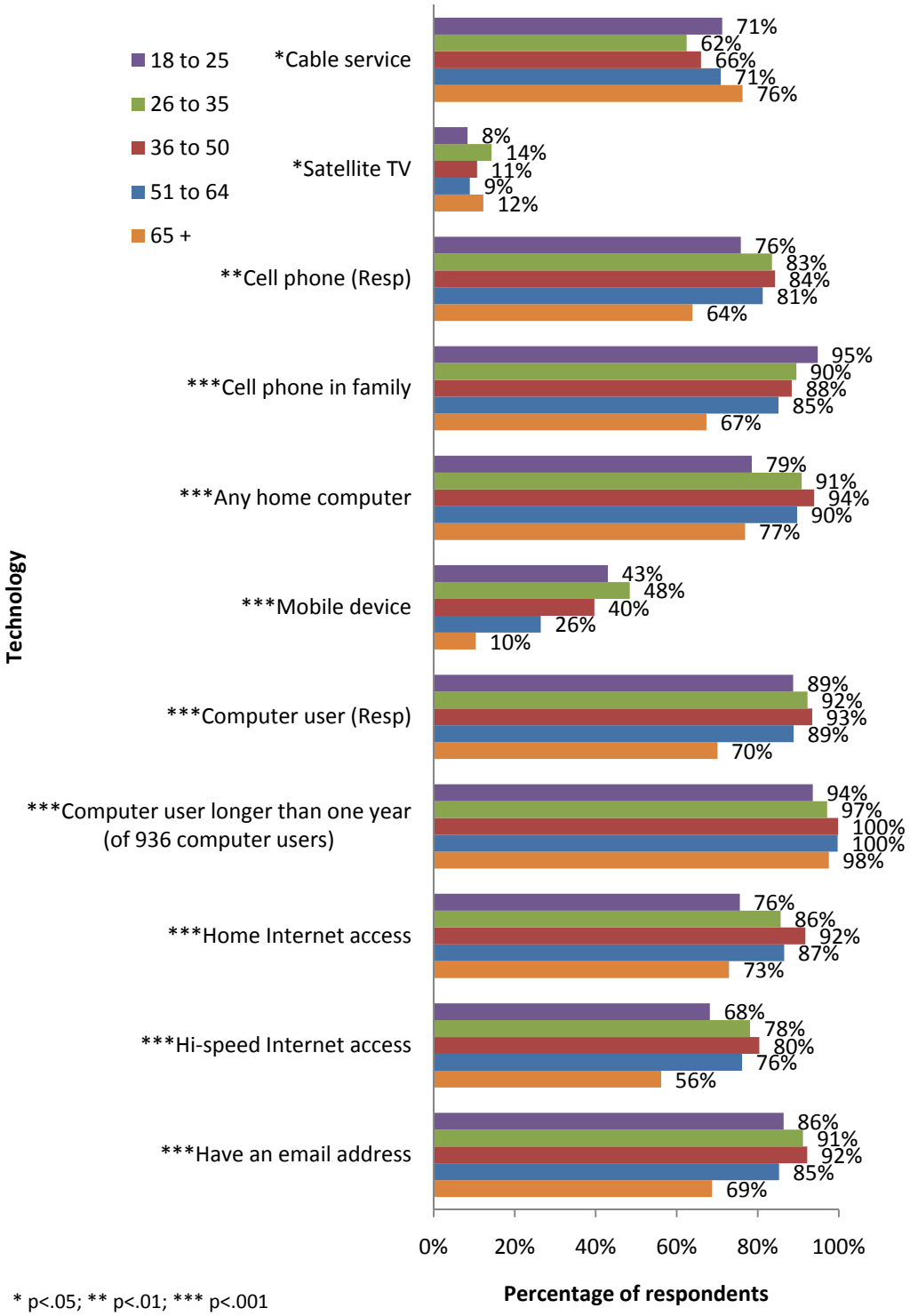
* p<.05; ** p<.01; *** p<.001

Source: 2009 City of Seattle IT Survey

This gap in IT access may be particularly troubling because the use of technology, both standard IT technology and specialized assistive technology, has proved to be a powerful tool in improving access to education and employment for people with disabilities. This finding suggests that improving access to IT technology for residents with disabilities may critically improve access to civic or community involvement.

Figure 10 shows an increase in cable service with age, but a decrease in use of or access to other technology so that seniors are consistently less likely to have a cell phone, be computer users, have a home computer or mobile device, have home Internet or an email address.

Figure 10. Seniors (65+) are less likely to have cell phone and computer-related IT access



* p<.05; ** p<.01; *** p<.001
Source: 2009 City of Seattle IT Survey

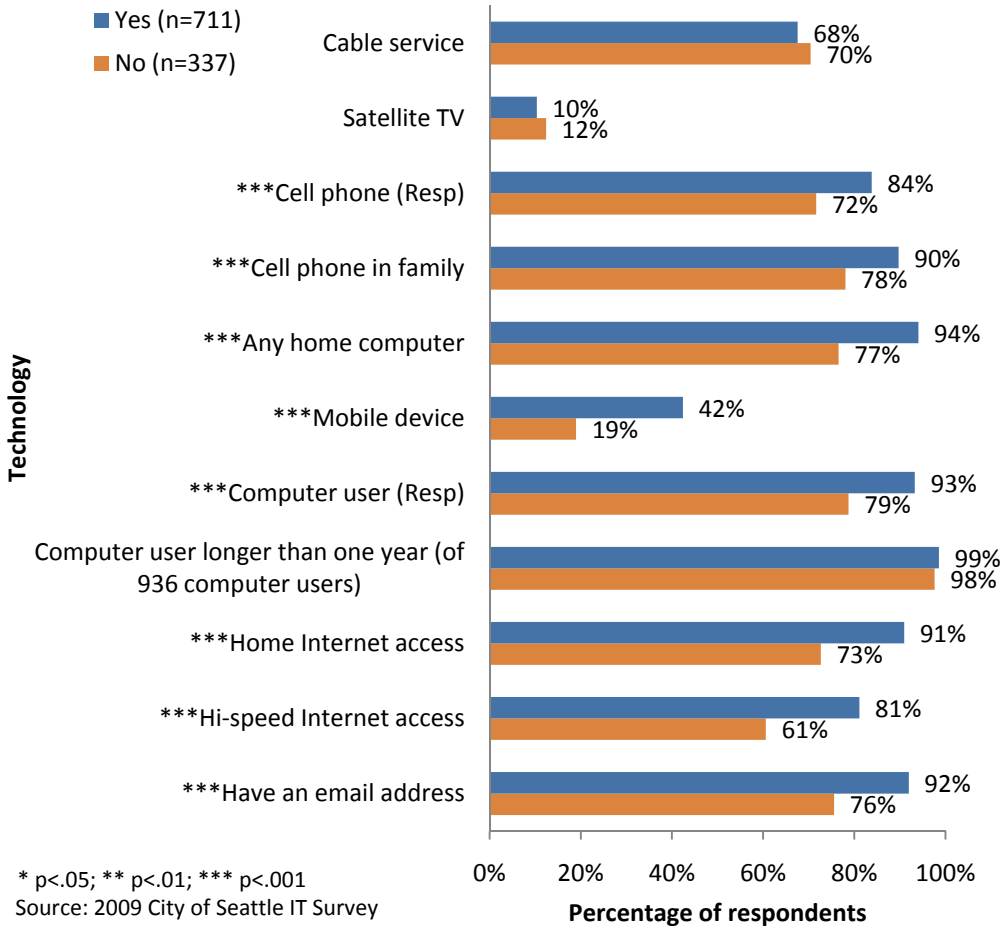
The youngest group of respondents had a profile of IT access that was similar to, though less extreme than, responding seniors. Latino respondents were overrepresented in the youngest age category, so the apparent effect of being younger could be due not to age per se, but to disproportionate representation of Latinos in that age group. Younger Latino respondents are less likely to be computer users, and both younger Latino and African American respondents are less likely to have home access to computer technology than younger respondents of other ethnicities. However, even with Latinos excluded from analyses, the lower

level of adoption among the younger age group remains. Cell phone access is comparable among the younger respondents across ethnicities.

It appears that as residents age they may be slower to adopt new technologies. The second oldest group, the 51 to 64 year olds, have a technology access profile more similar to their younger counterparts than the seniors, except with mobile devices. Ten percent of the seniors reported having a mobile device, jumping to 26% among the 51-64 year olds, and jumping again to 40% of the 36-50 year olds.

Figure 11 shows that respondents who are not working are as likely as employed respondents to have cable service and satellite TV, and are *less likely* to have a cell phone or a mobile device; to be a computer user or to have a home computer, Internet access, or an email address.

Figure 11. Respondents who do not work at a paying job have less access to cell phones and computer-related technology



* p<.05; ** p<.01; *** p<.001
Source: 2009 City of Seattle IT Survey

Multivariate Analyses

Although these analyses provide an overview of technology access gaps, and cursory guidance for targeting initiatives, many important factors are related to one another (for instance, age may be related to employment status, which may be related to income, as is education). Thus it is important to go beyond univariate analyses.

Therefore, additional exploratory regression analyses were conducted to refine our understanding of factors predicting respondent access to and use of technologies.[8]. In this stepwise approach, the most strongly predictive factor enters the equation, and the statistical program then selects the factor that best accounts for remaining variance, and so on until none of the remaining factors is significantly related to the remaining variance. Using this stepwise approach, the following models were developed:

Cell phone (for respondent): three factors accounted for 17% of the variance in having a cell phone, including **income** (positive), **gender** (female), and speaking a **language** at home other than English or Spanish (positive) (R=.41). Thus, higher income respondents are more likely to have a cell phone; if they are women or speak a language other than English or Spanish, that likelihood increases.

Cell phone in the family: five factors accounted for 18% of the variance in having a cell phone in the family, including **income** (positive), **age** (negative), **gender** (female), **language** at home other than English or Spanish (positive), having a **disability** (negative) (R=.43). Thus the model is similar to that for respondent cell phone. In addition, having a cell phone in the family is less likely among older respondents, and among those with disabilities.

Cable Service: less than five percent of the variance in cable service was accounted for **income** (positively related), being **Caucasian** (negatively related), **age** (positively related), and **disability** status (positively related) (R=.22). Taken together, these are the factors that best predict cable service in this sample. But the predictive power of this equation is weak. Other factors, not included in this analysis, are likely to be much more influential in the decision to subscribe to cable service.

Home computer: five factors accounted for 28% of the variance in having a computer at home, with an R of .53: **income** (positive), speaking **Spanish** at home (negative), **education** (positive), being **employed** (positive), and **age** (negative). Home computers are more likely with more income, and separately, with more education (indicating that education has its own impact on home computer ownership separate from its association with income) and with employment (also indicating an influence on home computer ownership separate from the effect of employment on income). Not speaking Spanish at home and being younger increased the probability of home computer ownership.

Home Internet access: similarly to the equation predicting home computer ownership, six factors accounted for 29% of the variance in having home Internet access (R=.54). In addition to **income** (positive), speaking **Spanish** at home (negative), **education** (positive, again, indicating

[8] Taken together, these findings can present a useful and easy-to-grasp summary of a complex set of survey findings. But this statistical approach develops a model optimized for the *sample*, rather than one that is optimally reflective of the *population*. Predictor and outcome variables may have failed assumptions required for easily interpreting a regression analysis.

an effect of education beyond education's effect on income), **age** (negative), being **employed** (positive), and speaking a **language** at home other than English or Spanish (positive). In addition to positive effects of more income, more education, employment, younger age and not living in a Spanish-speaking household as described above for home computer ownership, home Internet access is also more likely in households that speak some language other than English or Spanish.

High speed Internet access: six factors combined to account for 29% of the variance in high speed access (R=.54). These are **income** (positive), speaking **Spanish** at home (negative), being **employed** (positive), **education** (positive), **age** (negative), and **being Caucasian** (positive). Overall, households with employed younger Caucasian inhabitants who do not speak Spanish at home and who have more income and more education are more likely to have high speed Internet access.

Having an email address: five factors combined to account for 37% of the variance in having an email address (R=.61), including **income** (positive), speaking **Spanish** at home (negative), **education** (positive), **age** (negative), and being of **Hispanic** ethnicity (negative). Summarizing, younger respondents with more income and education who do not speak Spanish at home and are not of Hispanic origin are most likely to have an email address.

Mobile device: two factors (**income** – positive, and **age** – negative) accounted for 17% of the variance in having a mobile device at home (R=.41). Younger respondents and those with more income were more likely to have a mobile device.

Computer user: four factors account for 36% of the variance in being a computer user (R=.60): speaking **Spanish** at home (negative), **income** (positive), **education** (positive), and **age** (negative). Thus, younger respondents with more income and education who live in a household speaking a language other than Spanish are most likely to be computer users.

Computer user longer than one year: five factors combined with account for 14% of the variance in whether the computer-using respondents had used a computer for more than one year (R=.38). The factors were speaking **Spanish** at home (negative), **income** (positive), having a **disability** (positive), being of **Hispanic origin** (negative – keep in mind that this factor was selected after the variance due to being in a Spanish-speaking household was removed), and **African American/Black ethnicity**. Speaking Spanish at home not only decreases the chance of being a computer user; for those who do use computers, it also decreases the chance of they they've been computer users for long. Latino computer-users, even if they don't speak Spanish at home, were also more likely to be new to computers, as were the African American/Black respondents. Those with more income or with a disability were likely to have been computer users for more than a year.

Overview:

Income was a significant positive predictor in all these analyses, and the most powerful predictor for all but two of the items in the technology checklist. The two items for which income emerged as the second predicting factor were being a computer user, and among computer users, having been a computer user for longer than one year. Living in a **Spanish**-speaking household outweighed income for both items in that living in a Spanish-speaking household was strongly associated with not being a computer user, and among those who are computer users, with becoming one only within the past year.

The **Spanish** language effect is complex. Its predictive power is unlikely to be due solely to a language barrier, since respondents living in households speaking other non English languages were *more* likely to have home Internet access, while Spanish-speaking households were *less* likely, and they would presumably experience similar language barriers. The effect is unlikely to be related to income or education, since both income and education entered two of the equations that the Spanish language factor entered, and income entered the third.

Education entered the equation as a positive predictor of four of the checklist items (home computer, home Internet, having an email address, being a computer user) even after the effect of income was accounted for. This suggests that education has an effect on participation in these technologies separate from its effect on income. Additionally, being **employed** had a positive effect on having a home computer, home Internet, and email even after the effect of income was accounted for.

Cable TV

Summary: Subscription to Cable TV has continued to increase since 2000 when 602 people said they had cable, up to 650 in 2004 and 726 in 2009. Of the 334 people in 2009 who do not subscribe to cable, 45% said they have subscribed in the past. Nearly four in ten of these 334 dropped cable because of its cost. About 60% of both current and former subscribers, including those who dropped because of cost, were aware of the cable package for less than $20. Other groups who may have relatively limited incomes, including seniors 65 and older; people with household income below $40,000 per year; people with a disability; people who were not working at a paying job, were less aware of the lower cost cable option, pointing to a possibly important gap in information access.

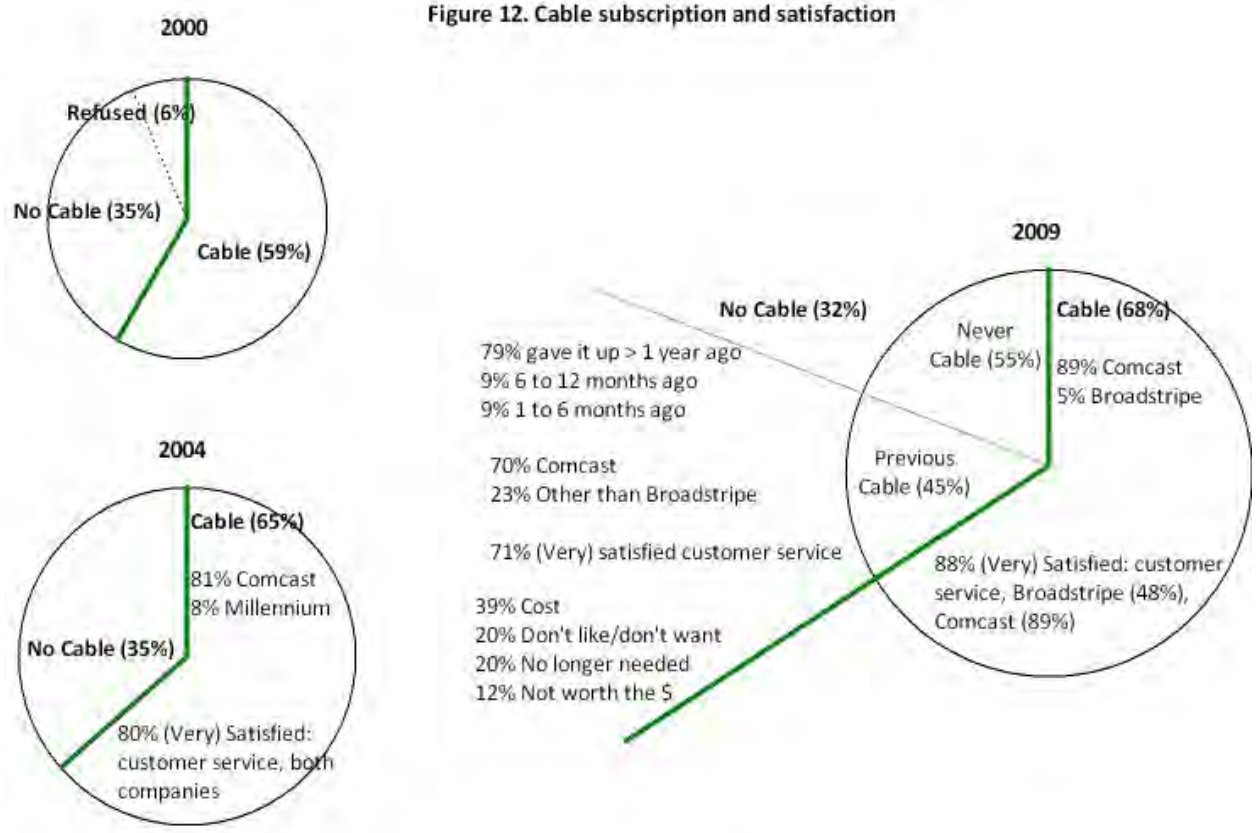
Comcast has 89% of the Seattle market, up from 81% in 2004. Most Comcast subscribers (89%) were "(very) satisfied" with the company's customer service, up from 79% in 2004. Former Comcast subscribers, although nearly three-fourths rated themselves as "(very) satisfied" overall, were more likely to say they were "(very) dissatisfied" than current subscribers (27% vs. 11%). Satisfaction with Broadstripe/Millennium's customer service decreased from 80% "(very) satisfied" in 2004 to 48% in 2009. Common unresolved problems with cable service are "service/intermittent outages/stations" and "reception/picture quality/local channels especially".

Respondents who spoke a language at home other than English or Spanish, those with less than post graduate education, and those earning less than $40,000 per year were most likely to be aware of the cable office. Women, African Americans, Latinos, including those who speak Spanish at home, and people with a disability are more likely to want to be contacted by the Cable Office, as are people with less education, people without paying jobs, and people with less income.

Figure 12 illustrates the increase in cable subscription rate from 59% in 2000 to 65% in 2004 and 68% in 2009. In 2004, Comcast had 81% of the market share, increasing to 89% in 2009.

Most of the people (79%) who had cable but dropped it did so more than a year prior to the 2009 telephone survey. The most commonly volunteered reason for dropping cable was cost (39%), followed by not liking it or not wanting it (20%), or no longer needing it (20%).

Figure 12. Cable subscription and satisfaction



Source: 2000, 2004, 2009 City of Seattle IT Survey

Overall, respondents were fairly satisfied with the customer service they received from the cable company, though people who had dropped their cable service reported somewhat less satisfaction with customer service than people who still have cable. Eleven percent of former subscribers said they were "very satisfied" and 60% said they had been "satisfied," compared with 22% "very satisfied" and 65% "satisfied" current subscribers.

Satisfaction among subscribers has increased since 2004. In 2004, 5% of subscribers were "very dissatisfied" and 15% were "dissatisfied," compared with 3% and 10% respectively in 2009. 15% of the 2004 subscribers said they were "very satisfied," compared with 22% in 2009.

This pattern depends somewhat on which company provides the service. Satisfaction with Comcast has increased since 2004. The percentage of dissatisfied or very dissatisfied Comcast customers decreased from 21% in 2004 to 11% in 2009, while the percentage of very satisfied customers increased from 15% to 22%.

One in five 2004 Broadstripe/Millennium customers said they were "dissatisfied" (18%) or "very dissatisfied" (2%), compared with about half of 2009's Broadstripe customers: 23% report "very dissatisfied" and 29% report "dissatisfied."

Ten percent of current cable subscribers reported having an unresolved problem with their cable service, most frequently mentioning "Service/intermittent outages/stations" (35%), followed by "Reception/picture quality/local channels especially" (27%). About one-quarter of respondents (26%) were aware of the Cable Office in both 2004 and 2009, and somewhat more wanted to be contacted by the Cable Office in 2004 (20% vs. 16%), perhaps related to the improved customer service ratings in 2009.

Non cable subscribers were asked if they were aware of the digital TV transition scheduled to occur in February, 2009. Nearly all (97%) were aware. All respondents were asked if they were aware of a low cost cable TV option, less than $20 per month. Just over half (56%) were aware of this option, primarily subscribers, both current (60%) and former (59%). Non subscribers were less likely to be aware (38%). People who dropped cable because of the cost were as likely as people who dropped for other reasons to be aware of the lower cost cable option.

Comparisons among demographic groups

Respondents who reported the greatest satisfaction with the customer service at the cable company tended to:

- *have less education* – one-third of those with a high school diploma or less education reported being "very satisfied" with the cable company customer service, compared with 18% of those with more education;
- *be older* – 39% of those 65 years and older reported being "very satisfied," compared with 18% of the younger respondents;
- *have less income* – 28% of those with an annual household income of less than $40,000 in 2008 reported being "very satisfied," compared with 19% of those with more income;
- *not be employed* – 28% of those who are not employed at paying jobs reported being "very satisfied," compared with 17% of their employed counterparts;
- *be women* – 26% of the women reported being "very satisfied," compared with 16% of the men.

Although nearly all respondents were aware of the transition to digital TV, those with less education were somewhat less likely to be aware (92% of those with no more than a high school diploma, compared with 97% of those with at least some college.

Certain demographic groups were more likely to be aware of the Cable Office and want to be contacted by the Cable Office. Specifically:

- Respondents who spoke a language at home other than English or Spanish were most likely to be aware of the Cable Office (44% vs. 25% of English and Spanish speakers), but Spanish speakers were more interested in being contacted by the Cable Office (36% vs. 16%);
- Respondents with post graduate education were less likely to be aware of the Cable Office than less educated respondents (20% vs. 29%), but those with less education were more interested in being contacted by the Cable Office (Less than a four year degree (23%) vs. BA/BS or more (12%));
- Respondents with income below $40,000 per year were more likely to be aware of the Cable Office (32% vs. 25%), and were more likely to want to be contacted by the office (31% vs. 11%);
- Those with a disability were more likely to want to be contacted by the Cable Office (47% vs. 13%);
- African American respondents were most likely to want to be contacted by the Cable Office (39%), followed by Hispanic/Latino respondents (29%). Caucasian respondents were among the least likely to want to be contacted (13%);
- Respondents with paying jobs were less likely to want to be contacted (12% vs. 27%);
- Women were more likely to want to be contacted (19% vs. 14%).

Summarizing, women, African Americans, Latinos, including those who speak Spanish at home, and people with a disability are more likely to want to be contacted by the Cable Office, as are people with less education, people without paying jobs, and people with less income.

Although 56% of the respondents overall are aware of the cable package costing less than $20 per month, certain subgroups were more or less likely to be aware, such as:

- Seniors 65 and older were less likely to be aware (39%)
- People with a disability were less likely to be aware (42%)
- People earning less than $40,000 per year (53%)
- People who were not working at a paying job (45%)
- Women (52%).

Cell Phones

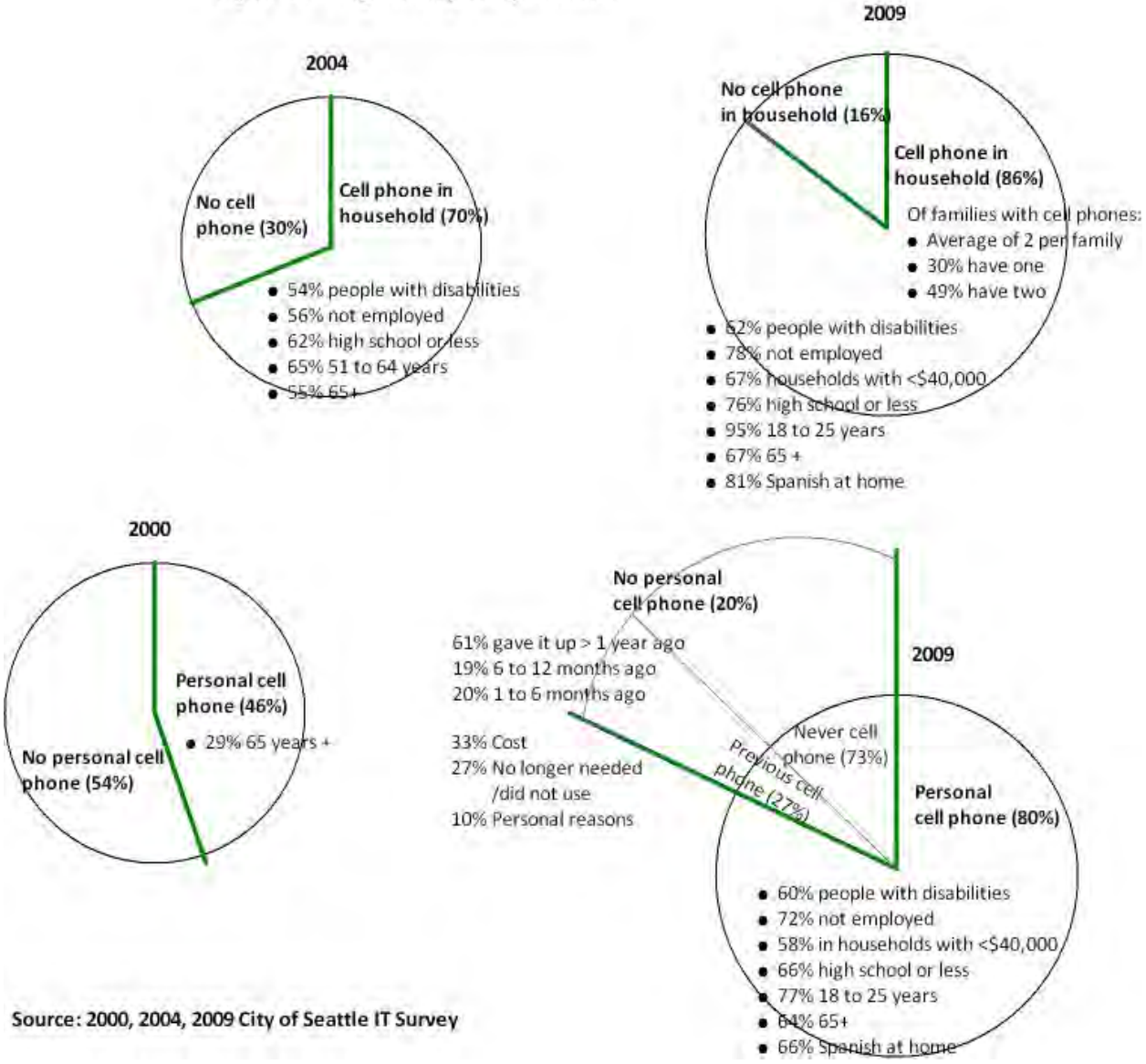
Summary: The percentage of Seattle households with cell phones has increased from 70% in 2004 to 86% in 2009. Access to a personal cell phone increased from 47% in 2000 to 80% in 2009. Households with cell phones have an average of two per household. Overall, the number of cell phones per household very closely tracks the number of adults per household. About a quarter of the non cell phone users have had a cell phone in the past and about one-third of these cited the high cost of service as the reason for dropping it.

Certain demographic groups or less likely to have cell phones, including people with disabilities, seniors 65 and older, people who do not work at a paying job, people with household incomes of less than $40,000, people with no more than a high school education, and people living in Spanish-speaking households.

With few exceptions, those who use only a cell phone and do not have a landline were similar to those with a landline in terms of their technology access, though they may differ in their technology use. They are equally likely to have cable TV, be computer, Internet, and email users, and have a computer and Internet access at home and Internet access on a mobile device. They are equally likely to indicate using computers for most of the tasks listed, and they are as varied as others in where they use computers. Some differences suggest they may be more technology oriented on their interactions with others, being more likely to contribute to a blog or wiki, more likely to use a social networking site, more likely to want to make contact with the government on the web or via email and less likely to make contact by telephone, in person, or in a letter. *Cell phone only users prefer a web or email survey for communicating their opinions to the City*.

Figure 13 shows that the number of household with a cell phone has increased significantly since 2004 when 697 respondents (70%) said they have a cell phone in their household, up to 906 (86%) in 2009. Eight in ten telephone survey respondents – 846 – reported that they also have a personal cell phone, up from 467 or fewer than half in 2000.

Figure 13. Change in cell phone prevalence



Source: 2000, 2004, 2009 City of Seattle IT Survey

Certain demographics groups are less likely to have a personal cell phone or one for any member of their household, including:

- people with disabilities (25% less likely to have a cell phone);
- seniors 65 years and older (37% less likely to have a personal cell phone in 2000, closing the gap to 20% less likely in 2009);
- people who are not employed (20% less likely to have a cell phone in the household in 2004, down to 9% less likely in 2009);

- households with less than $40,000 income in 2008 (22% less likely to have a cell phone in the household)
    - the respondent in these households were 28% less likely to have a cell phone for personal use;
- people with no more than a high school education remain about 11% less likely to have a cell phone in the household
    - the respondent him/herself is 18% less likely to have a cell phone for personal use;
- Spanish-speaking households are only about 6% less likely to have a cell phone in the household,
    - the respondent in the Spanish-speaking households is 18% less likely to have a cell phone for personal use.

Just over one-fourth (27%) of respondents without cell phones reported that they had a cell phone in the past. Most of these (61%) dropped it more than a year ago, with about one-third citing the high cost, 27% saying that it was no longer needed or used, and 10% indicating personal reasons.

Households with cell phones have an average of two per household. Statistical analysis of the number of cell phones per household and the number of adults per household shows a very close relationship between the two numbers (r=0.71). Table 1 shows that 657 (74%) of the households with cell phones have the same number of phones as adults in the household.

Table 1. Number of cell phones by household size

Number cell phones	Number of adults in household							Total
	1	2	3	4	5	6	7	
No cell phones	103	42	2	0	0	0	0	147
1	**180**	68	11	0	1	0	0	260
2	14	**381**	25	17	1	0	1	439
3	0	39	**71**	10	1	0	0	121
4	0	8	15	**19**	2	2	0	46
5	0	3	1	4	**5**	0	0	13
6	0	1	1	1	4	**1**	2	10
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	1	1
12	0	1	0	0	0	0	0	1
	297	543	126	51	14	3	4	1038

Because these surveys included only landline telephone numbers, it is difficult to be confident that the results are representative of cell phone only households. This may be of particular concern when the purpose of the survey relates to adoption of technology. A brief survey administered to focus group participants allowed a glimpse of similarities and differences

between cell phone only users and those with landlines. Forty-three percent of focus group participants overall (and 77% of the public policy graduate students) indicated that they have cell phones, but no landlines. Cell phone only participants were similar to those with landlines in their responses to questions about how and where they use computers, the Internet, email, or email attachments; type of Internet access; how they want to give their opinion to the City; and how they want to get information from the City. The areas of difference were having a cell phone (85% of the focus group participants with a landline also have a cell phone) and having DSL Internet access (10% of cell phone only participants and 34% of those with a landline). Cell phone only users were more likely to indicate that they contribute to a blog or wiki and participate in social networking sites; they are more likely to want to make contact with the government on the web or email (71% vs. 50%), and less likely to prefer to visit the government office in person (13% vs. 32%), or make a call (24% vs. 39%). *Most cell phone only users (65%) prefer to give their opinion to the City via email or an online survey compared with those with a landline (40%),* and they are less likely to say they want to get information from the City via the TV news (38% vs. 56%) or from the Seattle Channel (10% vs. 24%).

Computers and the Internet

Summary: The percentage of Seattleites who are computer users, and the percentage with email addresses have remained stable at about 86% since 2000; however, the percentage with home computer access, home Internet access, and especially high speed home Internet access has increased significantly over the years, and the increase in high-speed access since 2000 has been steep. In 2009, three-fourths of computer users use computers daily, especially if home is where they do most of their computing. Eight in ten with email check their email daily. Daily use of both computers and email is higher among Caucasian respondents and lower among Latino respondents who speak Spanish at home, even if they have home access.

Responses reflected tension between the affordability of Internet service, and a desire for faster Internet service that can be seen across the spectrum of current access speed. Three-fourths of respondents said that significantly faster Internet access would be somewhat or very valuable. At the same time, about half said that improving the cost of their Internet service is the one thing that would improve it the most, and 40% of those who have had home computer or Internet access in the past but not currently identified cost as the barrier.

Even though the percentage of computer users in Seattle has remained stable since 2000, the level of experience with computers has increased. In 2009, nearly all computer users have installed new software and three-fourths have used social networking sites, such as Facebook, MySpace, or LinkedIn. More computer users are "very comfortable" searching the Internet than sending and receiving email attachments, or opening and saving a file, suggesting that the most common use of computers today is as a way to access the Internet. This finding was consistent across many subgroups with the following exceptions:

- Latino respondents showed a decrease in computer experience, probably due to the relatively high number of respondents in this group without access to computers or the Internet. *Computer users* in this group increased in experience similarly to other groups;

- Computer-using seniors, with the most room for improvement across the age groups, improved the most in their computer experience. This could be due to learning in the senior subgroups, or may be due to the higher level of experience added to the "senior" group by computer-experienced individuals newly "recruited" into that group by aging;
- People with less than a high school education seem to be losing ground with computer experience. Although this demographic group is far likelier to be computer users than their counterparts nationwide (61% vs. 18%)9, they are far less likely to be computer users than Seattle's most educated respondents (96%). This may point to a need for outreach efforts with reduced literacy demands to high schools, community college adult basic education/GED classes, and out of school youth.

"Home" is the place where 70% of those naming one location and 96% of those naming two locations do "most of their computing." It is not clear how frequently this reflects optimal home access or limited access in other locations. People with more education were more likely to name more than one place where they do "most of their computing," especially "work." As income increases, the percentage who name home as a primary computing location decreases in an almost mirror image of the increase in the percentage who name work as a primary location. Daily computer and email use increases with both education and income.

Public libraries were mentioned in focus groups as a trusted place for accessing computers, and in this survey, though not named as a *primary* location for many, library computers were primary for more people in certain subgroups, including people who do not work at a paying job, people with disabilities, and African American computer users and computer users of "other" ethnicities. A quarter of those who go to the public library for "most of their computing" do so daily.

Of respondents without home computer or Internet access, one-fourth of those who speak English at home say it's because they don't want or need it, compared with only 5% of respondents who speak Spanish at home and 13% of those who speak other languages at home. Correspondingly, a participant in one of the English-speaking focus groups commented that anyone who wants a computer at home has one. It is possible that the accuracy of this remark may depend, at least in part, on English proficiency. Latino respondents, respondents with less education, and younger respondents were more likely to mention a cost barrier.

Review of the adoption of high-speed access over time shows a delayed adoption of high-speed Internet access by age so that the younger groups adopted high-speed access first; the oldest group adopted it last. Interestingly, younger people in the sample, more likely than older to mention cost as a barrier to home computer or Internet access, may be returning to dial-up access, especially if they have a mobile Internet device.

[9] http://www.usatoday.com/tech/news/2009-06-03-internet-use-broadband_N.htm

No home Internet access

One fourth of those without home Internet access in 2009 said they have had it in the past. About four in ten (42%) discontinued their Internet service more than a year earlier, and 30% discontinued it between six months and a year earlier. All respondents without home Internet access were asked for all the reasons they could think of for not having a computer and/or the Internet at home. The most commonly volunteered reasons are:

- Cost/too expensive (39%), unchanged since 2004 and up from 2000 (27%)
    - 32% specified the cost of the computer
    - 18% specified the cost of Internet access
- Don't want one/ don't need one (24%), down from 2000 (40%)
- No Internet device at home/ don't know how to choose Internet device (17%)
- Computer safety or privacy (7%)

Respondents who mentioned the cost of a computer as a barrier to using a computer or the Internet were asked how much, if anything, they would be willing to pay for a computer; and if they mentioned the cost of Internet access as a barrier, they were asked how much, if anything, they would be willing to pay per month for Internet access.

Most of the respondents (58%) who mentioned computer cost as a barrier said they would be willing to pay something for a computer. The median amount named by those willing to pay anything was $300. When the 42% who are unwilling (perhaps because they are unable) to pay anything for a computer are included in the computation, the median amount that those with a cost barrier are willing to pay is $50.

Most respondents (62%) who mentioned the cost of Internet access as a barrier said they would be willing to pay between $5 per month and $99 per month. The average monthly amount named by those willing to pay anything was $23 per month, with a median of $20 per month. When the 38% who are unwilling to pay anything for Internet access are included in the computation, the average amount drops to $14 per month, with a median of $10.

Hispanic/Latinos: Three-fourths of the Latino respondents mentioned the cost of computers and the Internet as a barrier, compared with 31% of the other ethnic groups, and only 5% said that they don't need one or don't want one, compared with 29% of the other groups. Latino respondents were more likely to say they'd be willing to pay something for a home computer (76% vs. 44% of other respondents).

Gender: Fewer women than men were willing to pay anything for home Internet access (24% vs. 52%).

Employment: More of the employed respondents mentioned cost as a barrier to computer or Internet access (46% vs. 32%), whereas more of the respondents who were not working mentioned not wanting or needing computer/Internet access (32% vs. 12%).

Income: Respondents in households with income of $40,000 or more were more likely to mention they had other access or free WiFi than those with less income (14% vs. 1%).

Education: The percentage of respondents mentioning cost as a barrier to computer and/or Internet access decreases from 61% to 31% as education increases. Those most likely to say they don't know how to use it have less than a high school education.

Age: Younger respondents are more likely to mention cost as a barrier to computer and Internet access (52% of the youngest group, decreasing steadily to 15% of the oldest group). Younger respondents are also less likely to mention that they don't want or don't need computer/ Internet access (14% of the respondents younger than 35, up to 51% of the oldest group).

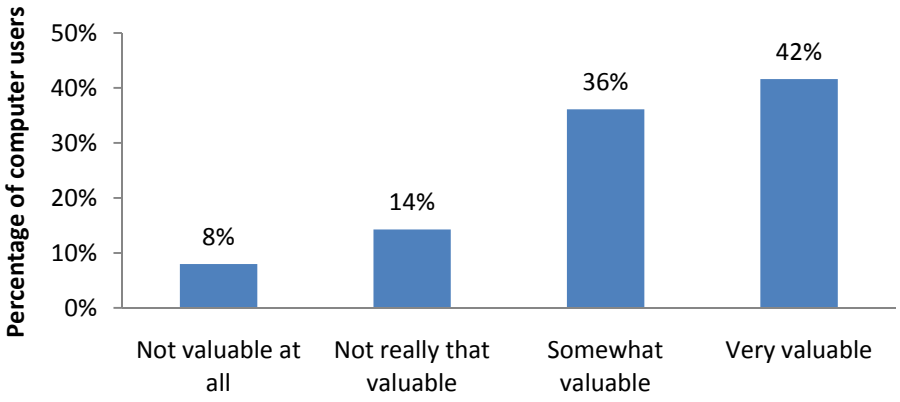
Language spoken at home: One-fourth of the English-speaking respondents without home computer or Internet access said they don't want or need it, more than Spanish-speakers (5%) or speakers of other languages (13%). This may suggest that a higher percentage of English speakers who want home computers or the Internet have found a way to get it that may not be as easily accessed by residents who do not speak English as comfortably.

Home Internet access

Computer users were asked how valuable it would be to have significantly faster Internet service. Figure 14 illustrates the responses.

This figure shows that about three-fourths of Seattle's computer users would find it "somewhat valuable" or "very valuable" to have significantly faster Internet access.

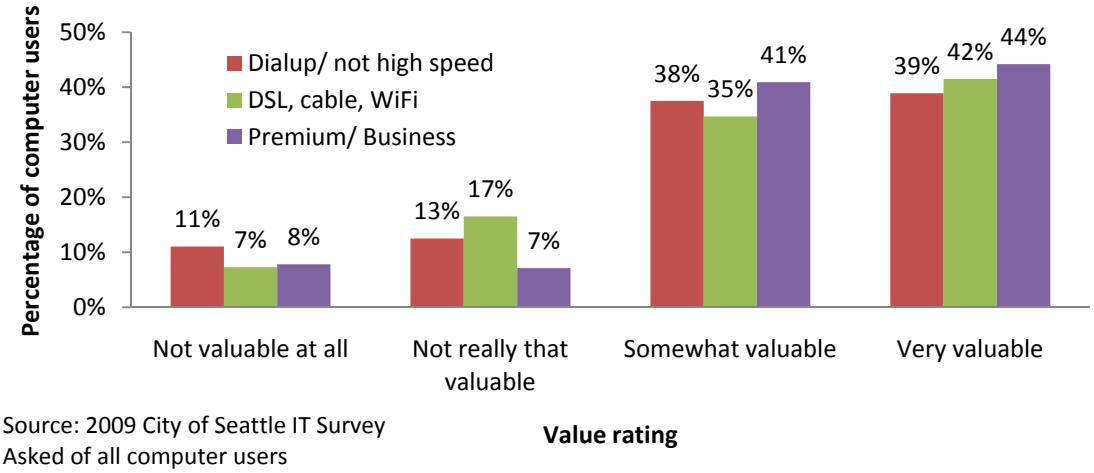
Figure 14. How valuable would it be to have significantly faster Internet service?



Source: 2009 City of Seattle IT Survey
Asked of all computer users

Figure 15 summarizes the same information for computer users with different speed of access currently. This figure shows that although some differences in value rating can be observed depending on the respondent's current speed of access, the over-riding pattern is that faster access is perceived by most computer users to be "somewhat" or "very" valuable, regardless of the speed of their current access. Eighty-eight percent of respondents with premium or business class access currently say that faster access would be "somewhat" or "very valuable," compared with 77% of other users, whether they have high speed access or not.

Figure 15. The perceived value of significantly faster Internet service is largely independent of current speed



Source: 2009 City of Seattle IT Survey
Asked of all computer users

Home Internet users who have not had high speed access were asked how much, if anything, they would be willing to pay for high speed access. About half (52%) did not want to pay anything. The other half (48%) said they would pay between $1 per month and $90, with an average of $21.97, and a median of $15.57.

Gender: In 2000 and 2004, men have been more likely than women to have high speed Internet access, but this trend equalized by 2009 when men and women are equally likely to have dial up, high speed, or premium class access.

Race/Ethnicity: In 2000, Caucasian respondents were more likely than African American or Hispanic/Latino respondents to have high speed access. This trend diminished for Hispanic/Latino respondents in 2004, but was exaggerated in the 2009 sample which indicated a greatly reduced likelihood of having high speed access among the Latino respondents. Significantly, these respondents (followed by Asian/Pacific Islander and African American respondents) also rated faster internet service as more valuable than did Caucasians and other groups. This apparent decline in adoption of high speed Internet access since 2004 could reflect changes in the Latino community, or it could be that as a result of this survey's more concerted effort to obtain a larger sample of Latino survey participants, a different part of Seattle's Latino population was reached.

Disability: People with disabilities were less likely to have high speed Internet access in 2004 and in 2009, including premium or business class access.

Age: In 2000, the younger respondents were more likely to have high speed access. The inflection point occurred before the 51 to 64 year old group so that this group and the group of 65+ respondents were less likely to have it. In 2004, the younger groups remained more likely to have high speed access, but the inflection point shifted so that only the oldest group (65+) was

less likely. By 2009, the youngest group showed a partial return to dial up access, a trend more pronounced among those with a mobile device, and the oldest group, though still significantly overrepresented among the dialup respondents, are beginning to appear with increasing frequency in the faster access groups. Respondents' ratings of the value of a significantly faster Internet service were congruent with these findings in that the rating of value decreased with age so that the youngest group rated the faster speed as more valuable than did the other groups, and the oldest group rated it as less valuable.

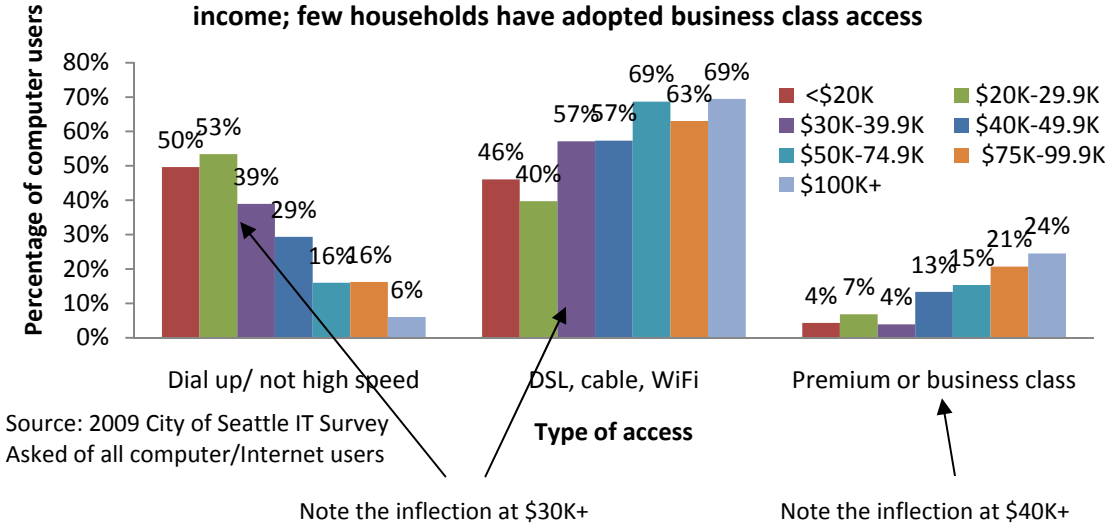
Overall, older respondents (older than 50, and even more strongly, 65 years and older) seemed more contented with their Internet service as these groups were more likely to say that nothing would improve it. Respondents between 26 and 50 were the most likely to mention price and seniors were least likely.

Education: In 2004, respondents with a four-year college degree or more were more likely to have high speed access than respondents with less education; by 2009, respondents with no more than a high school education remained less likely to have high speed (or premium class) access, and those with a four-year degree or more continued to be more likely to have high speed access. However, those with a four-year degree seem to be migrating to premium class access ahead of any of the other education groups, including those with a post graduate education.

Language spoken at home: In 2004, those who spoke English or Spanish at home were equally likely to have high speed access, and together were more likely to have high speed access than respondents who speak a different language at home. In the 2009 sample, respondents who speak Spanish at home were dramatically less likely than other respondents to have high speed access, including premium class service, and dramatically more likely to have dial up access. However, respondents who speak a language other than English at home rated the value of faster Internet service more highly did respondents who speak English at home.

Household income: Households with income below $30,000 per year were much more likely to have dial up access only. Households with income between $30,000 and $40,000 were also more likely than other groups to have dial up access, while still being more likely to have high speed access than dial up, though not premium class. Figure 16 illustrates the relationship between income and type of access in 2009.

Figure 16. Dial up access decreases steadily with income; high speed access is the most prevalent type of access, though increasing significantly with income; few households have adopted business class access



The inflection point – the point at which access begins to increase or decrease with income is at $30,000 for dial up and standard high speed access. It moves up to $40,000 for premium class access.

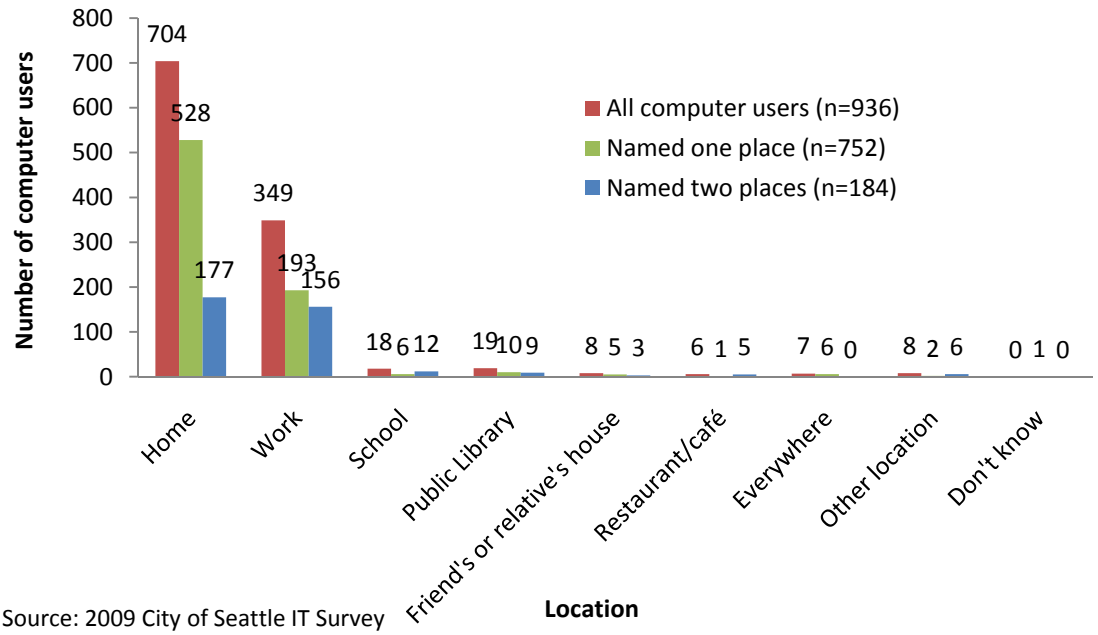
Employment: Employed respondents were significantly more likely to have high speed access in both 2004 and 2009.

Computing practices

Computer users were asked where they do most of their computing, with the first two responses recorded. Three-fourths of computer users named "home," followed by 37% who named "work." Most (80%) computer users gave just one answer, and 70% of these said "home," as did nearly all (96%) of those who gave two answers.

Figure 17 illustrates the number of respondents indicating each location. The first bar in each set shows the number of computer users naming that location as one of the one or two places where they do most of their computing; the second bar represents the number of people who identified that location as the single place that they do most of their computing, and the third bar shows the number of people who named that location as one of the two places where they do most of their computing.

Figure 17. One or two places that Seattleites do "most of their computing"



Source: 2009 City of Seattle IT Survey
Asked of all computer users

Respondents who named two places where they do most of their computing were very likely to include "home" as one of them (96% of those with two places and 70% of those with one). They were also very likely to include "work" as one (85% of those with two places and 26% of those with one). Those who named two places were also more likely to name the public library (5% vs. 1%), a restaurant or café (3% vs. 0.1%).

Overall, 151, or 82% of the people naming two places named work and home. Another 25 people named home and some other place (the other place being school (11), the public library (6), a restaurant or café (5), a friend's or relative's (1), or some other place (2)), and 5 named work and some other place, namely the library (1) or some other location (3). Three people who named two places named neither work nor home.

Those who named only one place, not work or home, named the public library (10), "Everywhere/anywhere" (6), school (6), a friend's or relatives (5), a restaurant or café (1), or some other location (2).

Three-fourths of the computer users say they use their computer seven days a week. People who named home as one of their most common locations were more likely to say they compute daily (76% vs. 65%), and people who named the public library were less likely to say they compute daily (24% vs. 74%).

People who work at a paying job were less likely than people who don't to name "home" (70% vs. 90%). It is not surprising that this group is more likely to name "work" as a location where they do most of their computing, but it may be surprising that *only half* of the people who work at a paying job named mentioned work as one of the places they do most of their computing. People who don't work at a paying job were also more likely to mention the public library (5% vs. 1%).

People who are employed reported using the computer more days per week than people who were not employed (6.4 days vs. 6.0 days). About 15% of the sample indicated that they are a computer professional or that they work in the technology field. This group uses computers more frequently (6.8 days per week) and is more likely to say they use the computer daily (84% indicated daily use, compared with 73% of respondents employed in other fields and 69% of respondents who are not employed).

Overall, 86% of the respondents (and 98% of computer users) have an email address. Of those with an email address, 79% said they use it at least daily and another 17% said they use it at least weekly. People who are employed tend to use email more frequently than those who are not (84% of employed people use email at least daily, compared with 69% of people who are not employed).

Gender: Although men and women both said "home" more than any other place, this was a bit more pronounced for women than men (79% vs. 71%) and men were more likely than women to name work (42% vs. 33%). Men were also a bit more likely to say they use a computer on a daily basis (74% vs. 72%).

Race/Ethnicity: Latino and African American computer users are least likely to name work as a place where they use a computer the most (16% and 20%), while Asian/Pacific Islander and computer users of "other" ethnicities are the most likely (47% and 43%). African American and computer users of "other" ethnicities are most likely to name the library (7%), and Asian/Pacific Islander computer users are the least likely (0%). Caucasian computer users are the most likely to use computers daily (77%, followed by 70% of Asian/Pacific Islander computer users, 62% of African American and 53% of Latino computer users.) A similar pattern follows for daily email use.

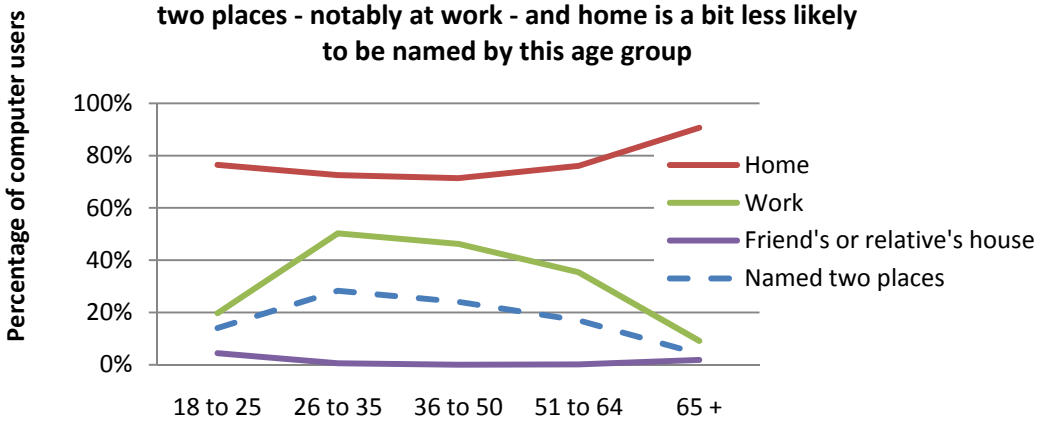
Disability: Computer users without disabilities were more likely to name two places where they do most of their computing (21% vs. 8%). Computer users *with* disabilities are more likely to say they do most of their computing at home (87% vs. 74%) or at the library (5% vs. 2%), and computer users *without* disabilities are more likely to name work as the location (40% vs. 8%), say they compute on a daily basis (75% vs. 59%) and that they use email on a daily basis (81% vs. 54%).

Age: Computer users in the middle age ranges – between 26 and 50 – are most likely to say they do most of their computing in two places (29% and 39%), and naming work as one of the places

is elevated for this age group, while "home" as a primary location is somewhat depressed. Figure 18 illustrates these trends across the different age groups. The curve for daily email use follows the curve for work as a primary computing location. While it is possible that a heavy reliance on home computing indicates good computer access at home, this figure suggests a different interpretation – that some groups that rely heavily on home computer access may not have access to other sources.

Interestingly, only two-thirds of the youngest group says they use computers daily, compared with three-fourths of each of the other age groups.

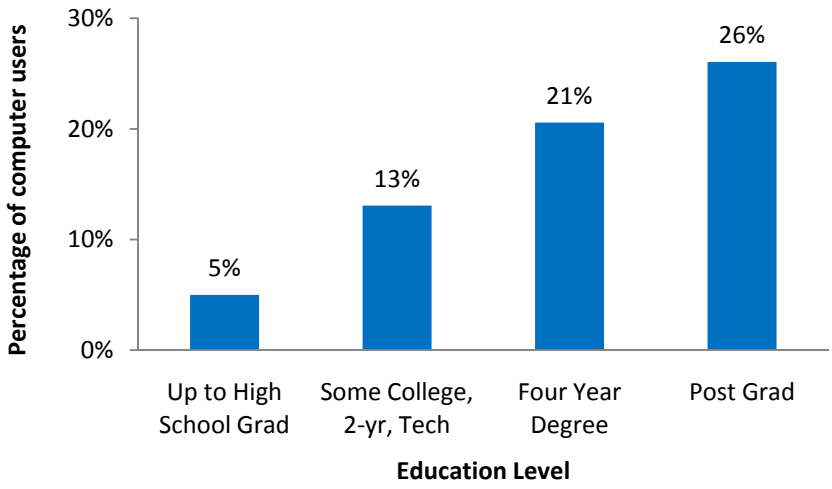
Figure 18. 26 to 50 year olds are more likely to compute "most" in two places - notably at work - and home is a bit less likely to be named by this age group



Source: 2009 City of Seattle IT Survey
Asked of all computer users

Education: The percentage of computer users identifying two primary computing places increases linearly with education, so that 5% of those with no more than a high school diploma named two primary places, up to 26% of those with post graduate education. Figure 19 illustrates this trend.

Figure 19. Identification of two primary computing places increases linearly with education



Source: 2009 City of Seattle IT Survey
Asked of all computer users

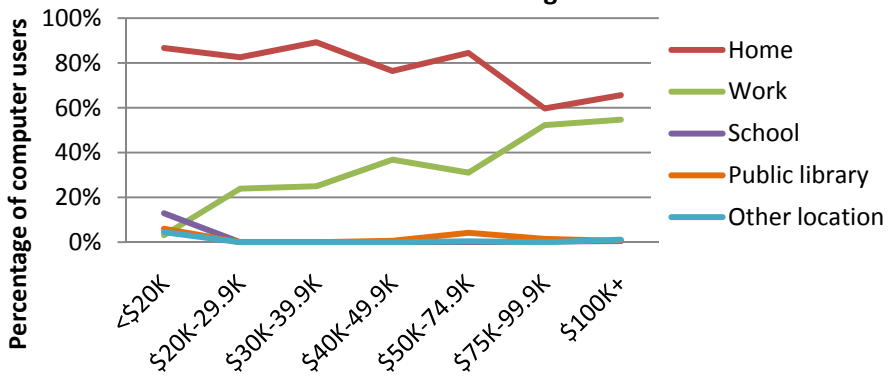
Other indicators of computer use also increase with education, including naming work as a primary place for using a computer (from 15% among

those with up to a high school diploma, increasing to 45% of those with a four year degree or more), daily use of a computer, (from 59% of those with up to a high school diploma, increasing linearly to 79% of those with a four year degree or more), or daily email use (from 53% of those with up to a high school education increasing to 85% of those with a four year degree or more). As education increases, the percentage identifying a friend's or relative's as a primary computing place decreases. None of the computer users with a four year college degree or more mentioned this location, up to 5% of those with up to a high school diploma.

Language spoken at home: Computer users who speak Spanish at home are as likely to name home as a primary place for using computers, but they are much less likely to name work (6% vs. 38% of others), and more likely to name a friend's or relative's house (9% vs. 1% of others). Spanish speakers are also much less likely to use computers daily (33% vs. 74%) despite the home access. They are also less likely to use email daily (24% vs. 61% of speakers of other non English languages vs. 81% of English speakers).

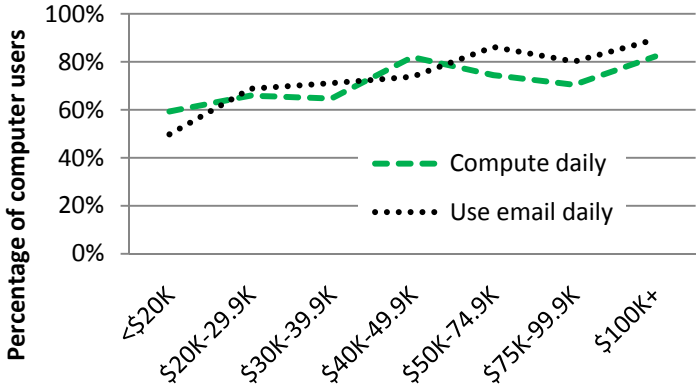
Household income: As income increases, the percentage of computer users who identify home as a primary computing location decreases, though home remains the most common primary computing location across all incomes. As home decreased in its prevalence as a primary computing location, work increased in almost a mirror image pattern. Figure 21 shows that computer users at the higher income levels continue to be more likely to be daily computer and email users.

Figure 20. The trends of home and work as primary places for using computers form mirror images across the income categories



Source: 2009 City of Seattle IT Survey
Asked of all computer users

Figure 21. Daily use of computers and email increase with income



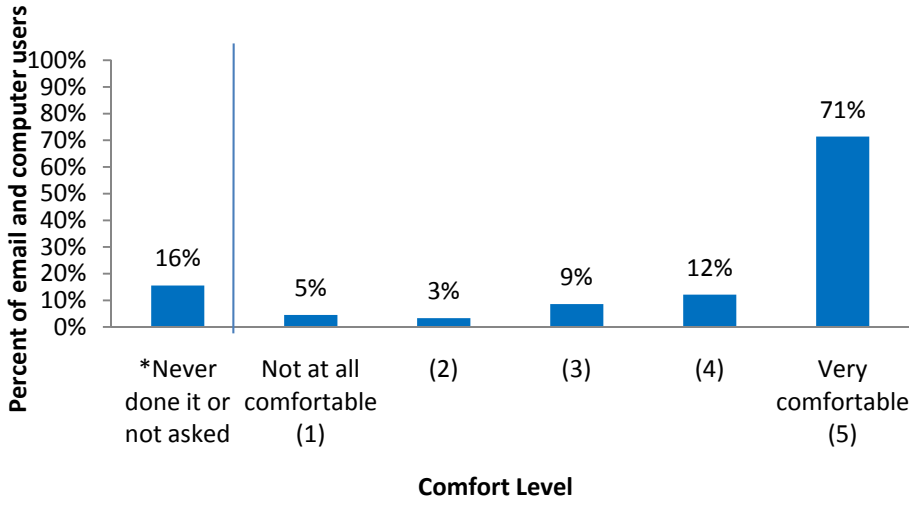
Source: 2009 City of Seattle IT Survey
Asked of all computer users

Experience with Computers and Computer Use

Computer users were asked how comfortable they are doing a series of skill-related questions to gauge their level of computer experience. Nearly all of the 937 email users have sent and opened attachments in email (98% of email users - 84% of all respondents). Nearly all of the 936 computer users have opened and saved a file (98% of computer users – 86% of all respondents), and searched the web (100% of computer users and 88% of all). Two more questions were asked of the 923 computer users who have done the previous two tasks with at least some degree of comfort. (This requirement eliminated 13 respondents.) Nearly all of these respondents (95% of "comfortable" computer users, and 82% of the entire sample) have installed new software, and 75% of the "comfortable" computer users have used social networking sites, such as Facebook, MySpace, or LinkedIn (or 65% of the entire sample).

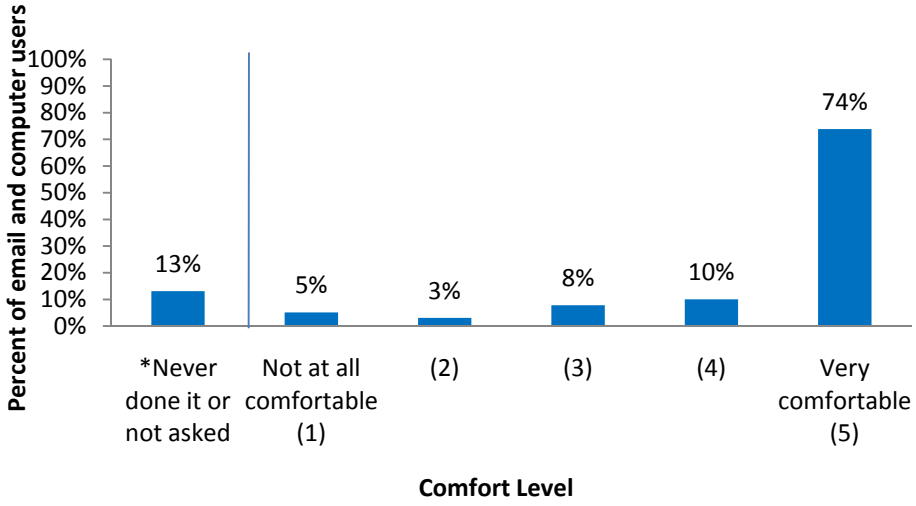
Respondents were asked how comfortable they were doing each of these tasks. Figures 22 through 26 show that most frequently, respondents are "very comfortable" with the tasks, especially the more basic tasks, such as sending and receiving email attachments, opening and saving a file, and searching on the web.

Figure 22. Sending and Receiving Attachments in Email



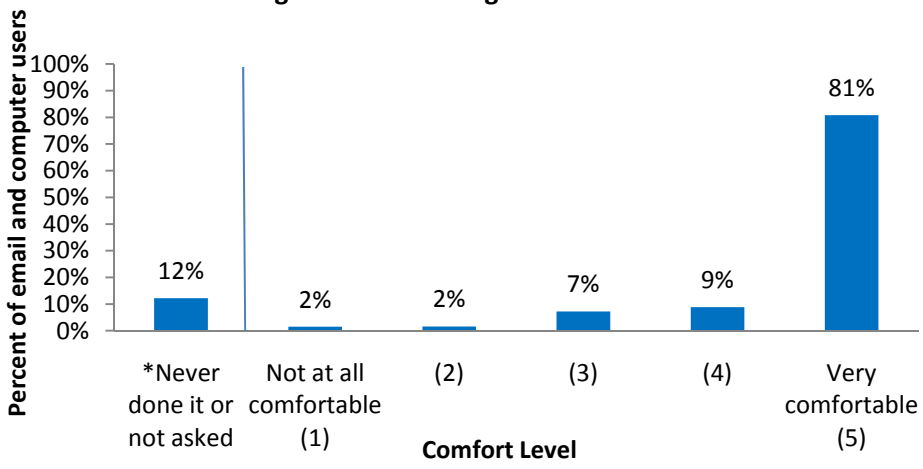
Source: 2009 City of Seattle IT Survey
*First bar based on all respondents
Later bars based on all who use computer and email

Figure 23. Opening and Saving a File



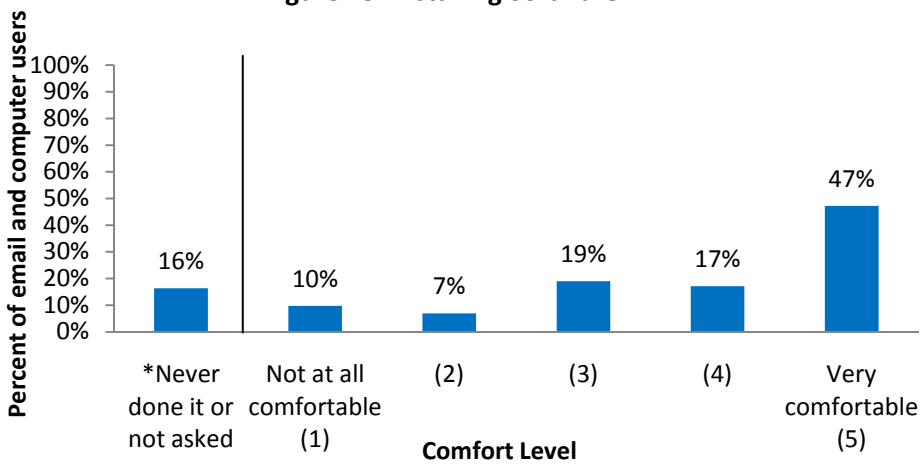
Source: 2009 City of Seattle IT Survey
*First bar based on all respondents
Later bars based on all computer users

Figure 24. Searching on the Web



Source: 2009 City of Seattle IT Survey
*First bar based on all respondents
Later bars based on all computer users

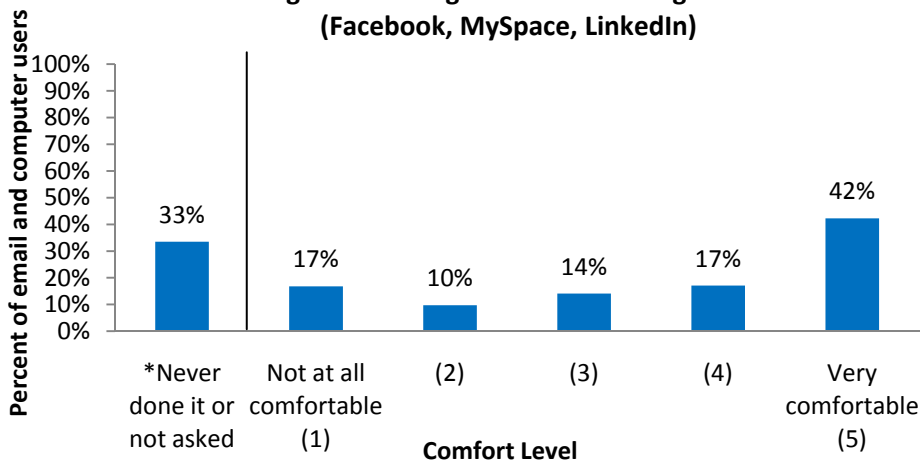
Figure 25. Installing Software



Source: 2009 City of Seattle IT Survey
*First bar based on all respondents
Later bars based on all with at least some comfort in basic tasks

Figure 24 shows that computer users are particularly comfortable searching on the web, with 81% of computer users saying they are "Very comfortable" searching on the web, compared with 71% and 74% saying they were "very comfortable" working with email attachments or opening and closing a file. This may indicate that the most common use of computers today is as a way to access the Internet. Figures 25 and 26 illustrate comfort with a more advanced task focused on the local machine (installing software), and another focused on using an Internet application (social networking). Note that although most respondents still express a great deal of comfort with both tasks, it is to a much lesser degree than the basic tasks.

Figure 26. Using Social Networking Sites (Facebook, MySpace, LinkedIn)



Source: 2009 City of Seattle IT Survey
*First bar based on all respondents
Later bars based on all with at least some comfort in basic tasks

In earlier sections of this report, findings indicated that technology becomes accepted in Seattle gradually and thoroughly. This section suggests a similar pattern for applications[10].

Three analyses were conducted to assess change over time. First, changes in the population's use of the different applications were examined. In this analysis, those who gave some comfort rating were assigned to the category of respondents who have used the application, and those who weren't asked because of not qualifying for

Table 2. Change in computer experience over time

	% of entire sample[11]			% of "qualified"[12]		
	2000	2004	2009	2000	2004	2009
Sending and receiving an email attachment	80%	81%	85%	93%	99%	98%
Opening and saving a file	86%	84%	87%	98%	99%	99%
Searching on the web	85%	84%	88%	96%	99%	100%
*Installing software	78%	79%	84%	92%	95%	96%

*Increase in % of respondents giving ratings over survey implementations

[10] Similar questions were asked in the previous two surveys. Not every respondent was asked the questions in this survey, therefore adjustments were required to all three samples to ensure that comparisons are appropriate.

[11] These three columns use all respondents except those who refused to answer or said "Don't know." Participants who were not asked because of not being qualified (i.e., not computer users, not email users, not at all comfortable with basic computer tasks) were included in the computations. Thus this is percentage of Seattle residents who have done these tasks.

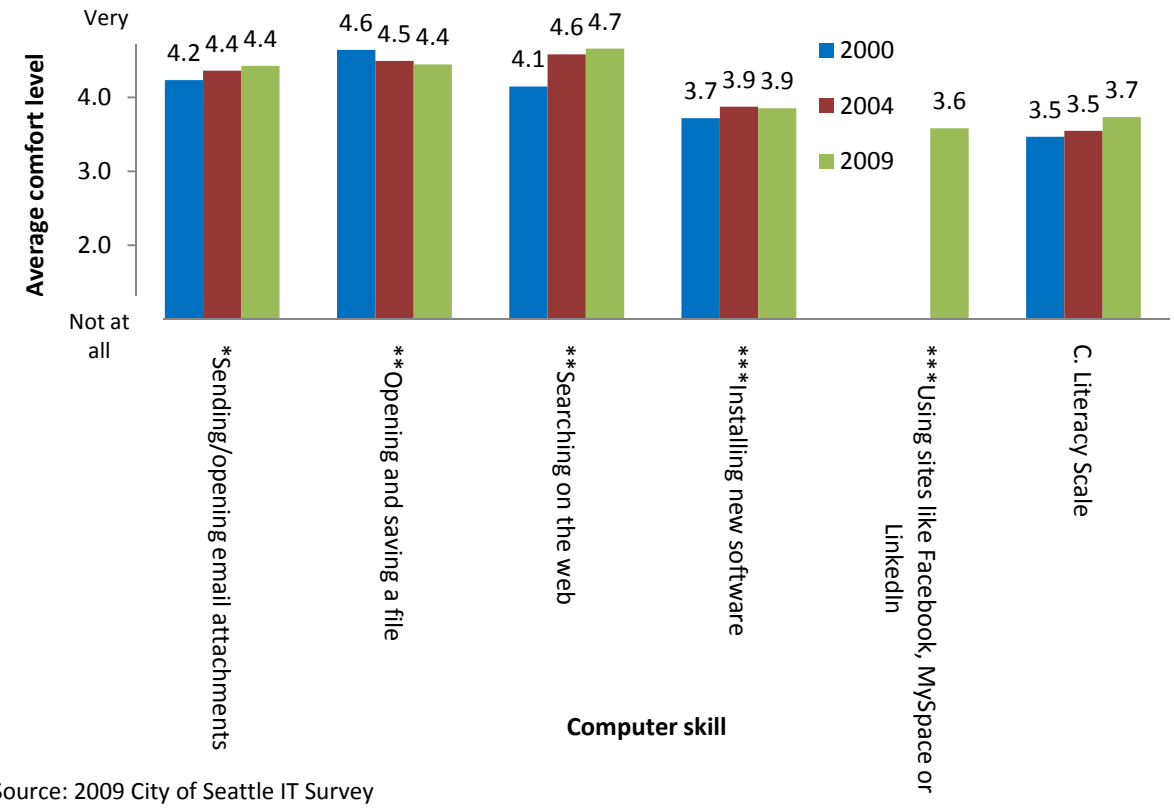
[12] These three columns include only those respondents who were asked their comfort level. Non computer users were not asked any of these questions. Non email users were not asked about attachments. Respondents who said they are not at all comfortable with or have not done the basic tasks were not asked the advanced tasks. Data from previous surveys were adjusted to be comparable.

the question (not computer users, not email users, not comfortable with the basic tasks so not asked the more advanced tasks) or who said they had never done the task were assigned to the category of non users. These rates appear in Table 2. Changes in these rates were analyzed over time and showed no significant increase except in installing software, which did not increase between 2000 and 2004, but did increase by 2009.

The second analysis considered only those who were asked the question about the computer task. This analysis shows that among "qualified" respondents, an increase in experience with the task appeared between 2000 and 2004, but the 2004 level was so high it would not be possible to see a significant increase.

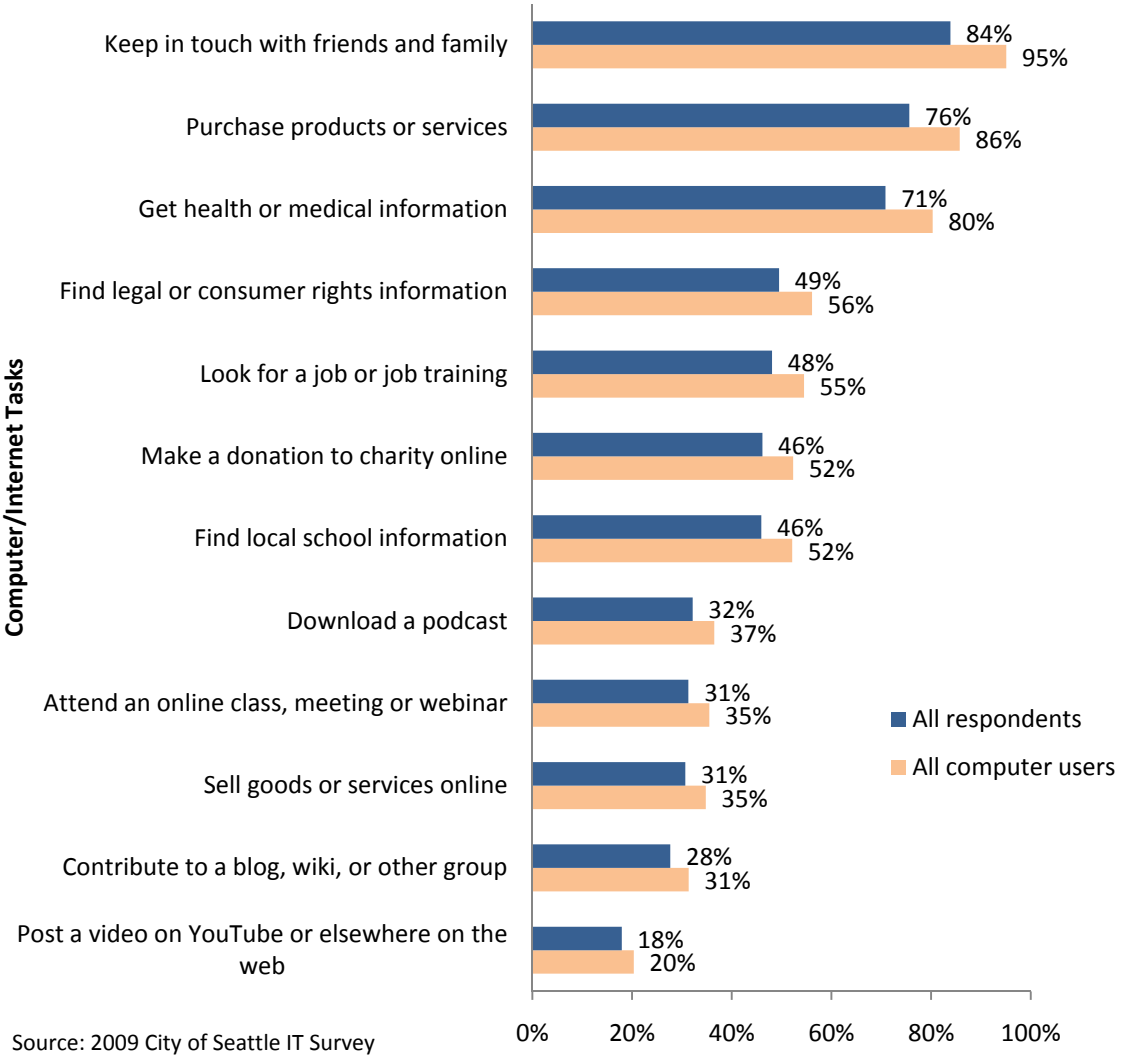
The third analysis examined the change in the actual comfort ratings over time for the individual tasks and for a scale that was computed as the average of the four items that were included in each survey. Figure 27 shows that 2009 respondents gave higher comfort ratings in working with email attachments, searching on the web, and in the overall experience scale. No significant difference was found in installing new software – discomfort with this task may reflect less about confidence in the respondent's skill and more about confidence in the software being installed, and respondents in 2000 expressed more comfort with opening and saving a file than did respondents in later surveys.

Figure 27. Already high in previous surveys, comfort with computer tasks continued to increase in several areas



Source: 2009 City of Seattle IT Survey
* Asked of email and computer users
**Asked of all computer users
***Asked of those who search on web or open/save a file with at least some comfort

Figure 28. Tasks residents use computers and the Internet for



Source: 2009 City of Seattle IT Survey
Top bar (orange): Based on all respondents
Bottom bar (blue): Based on all computer/Internet users

Prior to the questions about comfort with five representative tasks, computer/Internet users read a list of other tasks were asked to identify which they used a computer or the Internet for. The top bar in each pair (blue) in Figure 28 displays the percentage of survey respondents overall who do these tasks (including non computer users as people who do not use the computer or Internet in this way). The bottom bar in each pair (orange) represents the percentage of computer users who said they use the computer or Internet in this way. Note that this figure does not include the tasks discussed above[13].

[13] The rationale for excluding the experience question items from this figure is that respondents who said they are not comfortable with the literacy tasks may not have endorsed them as a way they use the computer or Internet. Selecting a cut-off on the 1 (not at all comfortable) to 5 (very comfortable) scale would not be reliable enough.

Five of these items were included in the 2004 survey: Keep in touch with friends and family (increased from 92% to 95%); Get health or medical information (increased from 69% to 80%); Look for a job or job training (stayed steady at 55%); Purchase products or services (increased from 82% to 86%); and Find legal or consumer rights information (increased from 52% to 56%).

A scale of computer experience was calculated for the years 2009 and 2004 using these five "yes/no" question items, and four question items originally on a scale from 1 (not at all comfortable) to 5 (very comfortable): sending/ receiving email attachments, opening/ saving a file, searching on the web, and installing new software. These items were re-scaled so that the values were compressed to the same scale as the yes/no items, where 0 indicates that the respondent does not use the computer in that way to 1, indicating that the respondent does use it in that way. Intermediate values indicate levels of comfort for those items with that level of resolution. These nine items were summed for a total experience score ranging from 0 (no use of computers) to 9 (performs all the tasks, with a great deal of comfort).

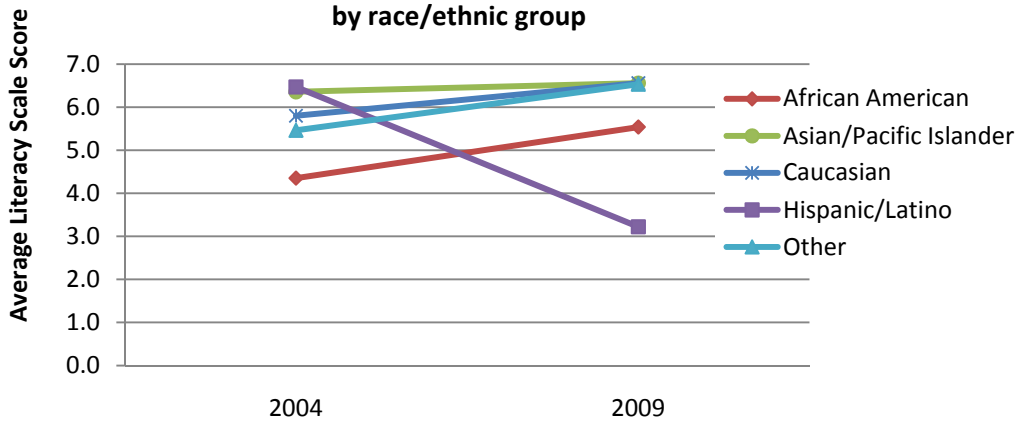
Change over time

Analysis shows a significant increase in overall computer experience of Seattle residents from 2004 (5.8) to 2009 (6.3). When the analysis is confined to computer users alone, the increase is about the same, but average experience level is higher in both years: from 6.8 in 2004 to 7.1 on 2009.

Two additional sets of analyses were conducted to investigate the possibility that different subgroups in Seattle are changing in computer experience at different rates. Analysis showed that men and women had comparable gains, as did people with disabilities, and people who were employed as compared with those who were not. The pattern of change over time was different for different race/ ethnicities (Figure 29), for the different age groups (Figure 30a), for people of different education levels (Figure 31), and for people who speak different languages at home (Figure 32).

The most striking finding from this figure is the dramatic decrease in computer experience among the Latino respondents in 2009. Also significant is that the African American respondents continue to have less computer experience in both years.

Figure 29. Change in computer experience scale over time, by race/ethnic group

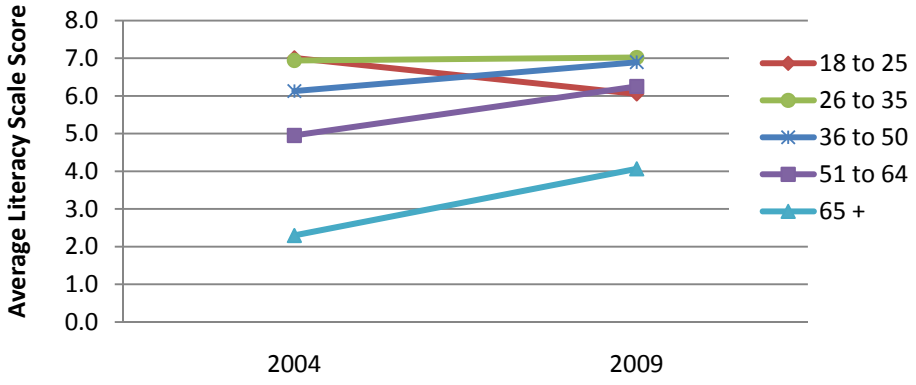


Source: 2004 and 2009 City of Seattle IT Surveys
Averages based on all respondents

A follow up analysis was conducted looking at the experience of computer users only, which revealed that most of these differences in pattern of change between 2004 and 2009 do not hold when considering only computer users. This would mean that the effects of these demographic items on computer experience are probably secondary to the rate of computer use by a subgroup.

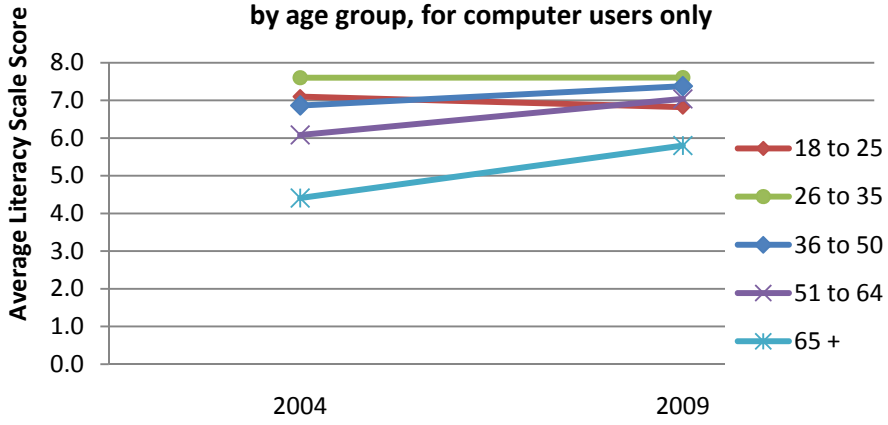
The one demographic that continued to show different patterns of growth in computer experience when including computer users only in the analysis is age group (Figure 30b). When considering only computer users, the seniors, with more room for improvement, are still gaining ground faster than other groups, especially in searching the web, opening and saving files, and getting health or medical information (which increased about 10% among the 26 to 64 year olds, *and about 70% from 48% to 81%*

Figure 30a. Change in computer experience scale over time, by age group



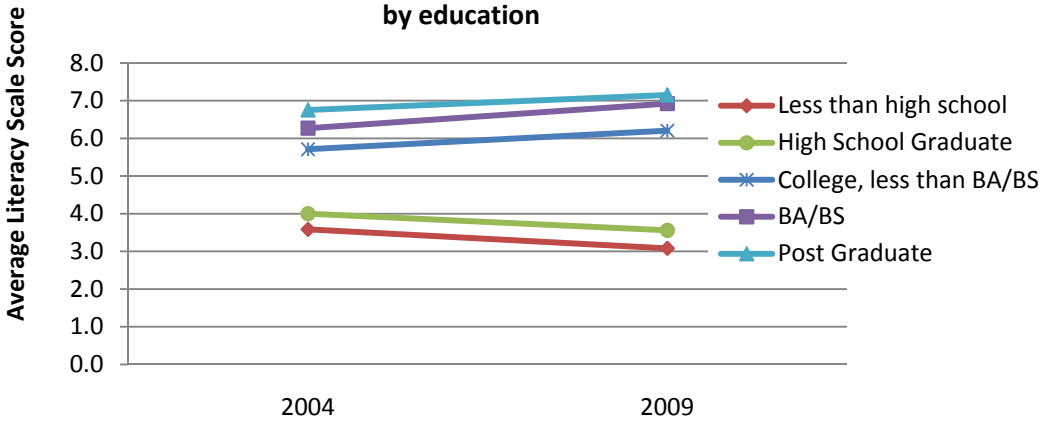
Source: 2004 and 2009 Seattle IT Surveys
Averages based on all respondents

Figure 30b. Change in computer experience scale over time, by age group, for computer users only



Source: 2004 and 2009 Seattle IT Surveys
Averages based on all respondents

Figure 31. Change in computer experience scale over time, by education



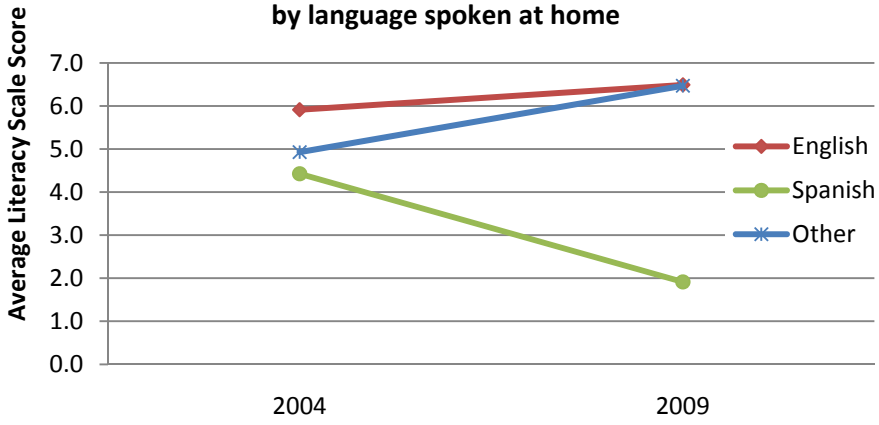
Source: 2004 and 2009 Seattle IT Surveys
Averages based on all respondents

among the oldest respondents); those younger than 50 are largely remaining stable in experience level. One age-related finding that may call for more investigation is the apparent decrease in computer experience or use by the youngest group since 2004. One of the items contributing to this scale is "Keeping in touch with family and friends," which remained at about 97% among the 26 to 35 year olds and increased 4%, 10%, and 23% in the next three age groups, but *decreased* 5% among the youngest group of respondents, perhaps related to the increased use of social networking sites among this group.

Figure 31 shows that those with less education (high school or less) tend to have lower computer experience overall, and may be losing ground, compared with people with more education (some college or more) who have more computer experience overall, and seem to be increasing. This may point to a need for more outreach to high schools, community college developmental education departments, or youth who have left school prior to graduation. This finding may also point to a need for alternate web information that does not depend as heavily on reading skill. Such an enhancement could also benefit non native speakers who are not literate in English.

Figure 32 shows an effect similar to Figure 29 above – respondents who speak Spanish at home are showing a decrease in computer experience since 2004.

Figure 32. Change in computer experience scale over time, by language spoken at home



Source: 2004 and 2009 Seattle IT Surveys
Averages based on all respondents

The explanation for this finding is not clear. It is possible that with more intensive efforts to reach Hispanic/Latino households in 2009, a different population was interviewed, revealing a gap in connection that is not new, merely previously undetected. Alternatively, if the population of Spanish-speaking immigrants has increased rapidly since 2004, the sample in 2009 could contain more recent immigrants who might not have the resources to get online. One Latina co-facilitator indicated that residents who emigrated from the smaller villages in Mexico may not "have a clue," meaning they may not yet understand the importance of online access in this culture.

Computer experience in different subgroups

The following analyses of the effect of demographic variables on computer use and computer experience included only those who were asked the question. For example, non computer users were not asked whether they used individual applications and are not included in these analyses.

Gender: Although men and women indicated that they used about the same number of computer applications (men: 6.4; women: 6.3), men had higher computer experience scores (6.4 vs. 6.1), reporting significantly more comfort in installing new software (4.1 vs. 3.6), and being more likely to post a video online (25% vs. 16%) or download a podcast (39% vs. 34%).

Race/Ethnicity: Overall, African American computer users and Hispanic/Latino computer users reported using the computer for fewer things, and less computer experience overall.

- African American computer users are least likely to **download a podcast** (18%), while Asian/Pacific Islander, Caucasian and "Other"[14] computer users are most likely (37%, 38% and 53%, respectively); African American computer users are also least likely to **post a video** online (5%), followed by Caucasians (18%), while Asian/Pacific Islanders are most likely (37%).
- African American, Hispanic/Latino, and Asian/Pacific Islander computer users are less likely to **make a donation to a charity online** (30% to 37%), while Caucasian and "Other" computer users are most likely (57% and 60%).
- African American computer users are least likely to **sell goods or services online** (13%) compared with the other groups (32% to 43%); Hispanic/Latino and African American computer users are least likely to **purchase products and services online** (70% and 73% respectively), compared with other Asian/Pacific Islander and Caucasian computer users (89%).
- Caucasian and African American computer users are least likely to **look for a job or job training online** (49% and 55%), compared with other groups (64% to 71%).
- Asian/Pacific Islander and African American computer users were less likely to use the computer to **get health or medical information** (68% and 75%), compared with the other groups (82% or more).
- African American computer users are also least likely to use the computer to **keep in touch with friends and family** (78%) compared with at least 93% of the other groups. Hispanic/Latino computer users, however, were less likely to use **email attachments** (86% vs. at least 93% of the other groups), something that African American and Asian/Pacific Islander computer users expressed less comfort in doing.

Disability: Computer users with disabilities identified fewer uses than their non-disabled counterparts (5.3 vs. 6.4), and expressed less comfort with a several tasks, including sending and receiving email attachments (41% are "very comfortable" compared with 74% of computer users without disabilities), opening and closing a file (44% "very comfortable" compared with 77% of other computer users), and searching on the web (58% "very comfortable" compared with 83% of other computer users).

[14] Other here includes Native American/ American Indian (2), Mixed (18) and Refused to specify (12)

Figure 33 illustrates differences in the use of computers to perform specific tasks by computer users with and without disabilities.

Figure 33. Computer users with disabilities are less likely to use computers for a number of specific tasks

Source: 2009 City of Seattle IT Survey
Based on all computer/Internet users

Age: *Inverted U* – The most common pattern of use of computers or comfort using computer for certain task follows an inverted U shape, with lower values for the youngest and oldest age groups (usually much lower for the seniors) and higher values for the two age groups between 26 and 50 years. The 50 to 64 year age group was slightly depressed for some of these items, but not as much as the oldest group. Items following this pattern were: the overall scale for computer experience; the summary number of tasks the computer is used for; comfort working with email attachments, opening and closing files, or searching on the web; selling goods or services online; making a donation to a charity online; and contributing to a blog, wiki, or other group. Percentage purchasing products or services online, attending a webinar or online class, and finding legal or consumer rights information followed a similar pattern, without the early depression in the next-to-oldest age group. Ever having searched the web also followed a similar pattern – lower at the age extremes and fairly uniformly higher across the middle age

groups. When interpreting this pattern recall that Latino respondents are overrepresented in the youngest age group, which could partially account for the lower participation in that age group.

Early jump –The youngest group was least likely to get health or medical information online. Older computer users were much more likely to endorse this use of computers.

Downward trend – Another common pattern followed a downward trend, so that the youngest group reported the highest values or was most likely to use the computers for that task, with diminishing values or percentages as age increased. This pattern was observed for comfort with installing new software and comfort using social networking sites, and every having used one of those sites, as well as likelihood of getting school information, posting a video online, and looking for a job or job training.

Late drop – Three computer experience question items followed a "late drop" pattern characterized by consistent values in the first four age groups, dropping significantly in the senior group. Having ever opened and closed a file, installed new software, or and downloading a podcast followed this pattern.

Education: *Upward trend* - Overall, as education increases, so does computer experience level. The five-point computer experience scale increased from 3.1 and 3.6 in the first two education categories, up to 6.2 and 6.9 for computer users who have attended some college or have a four-year degree, and 7.2 for those with post graduate work. Similarly, the number of applications the computer users said they use increased from about 5 in the lowest education groups to 6.7 among the post grads. Comfort working with attachments in email, opening and closing files, and searching the web increased steadily with education, starting at 3.8, 3.4, and 4.1 among the computer users who have not finished high school, up to about 4.6 among the post grads.

The percentage of computer users who have ever used attachments in email (from 77% to 99%), used the computer to find health or medication information (55% to 85%), to attend an online class, meeting, or webinar (17% to 41%), to make a donation to charity online (13% to 64%), to purchase products or services (38% to 92%), or to sell goods or services online (17% to 40%) increased from the group with the least education to the group with the most information.

Step – A few of the items (comfort installing new software, ever having installed new software, and ever having searched the web) had low scores or low participation at the lowest education levels, but uniformly higher comfort or participation with high school graduation or with just some college. Ever having installed new software stepped from 84% to 98% with any college; comfort with this task stepped from 2.4 to 3.5-4, with high school graduation, and ever having searched the web stepped from 94% to 100% with high school graduation.

Wave – The prevalence of three types of tasks created a similar surprising pattern across three items. Having ever used a social networking site, having looked for a job or job training online, and contributing to a blog, wiki or other group share the pattern of relatively high participation

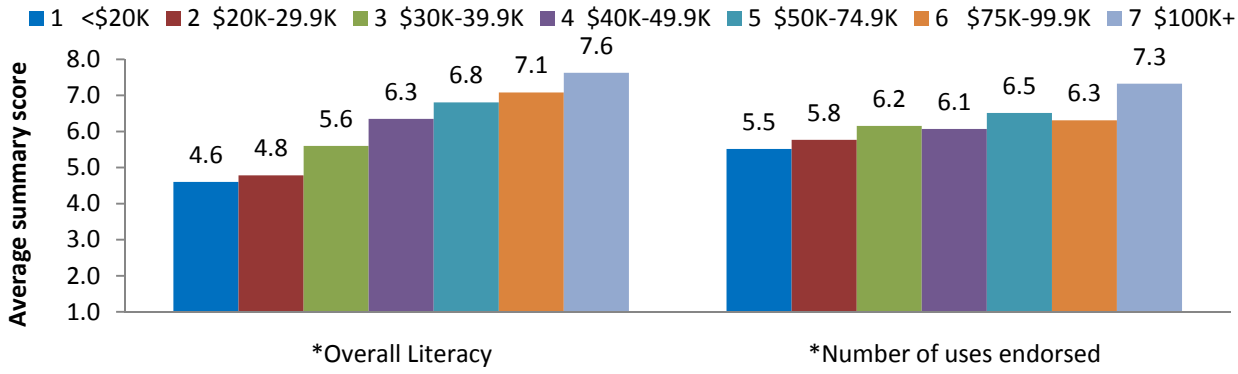
in the lowest education group, dropping to low participation among the high school graduates, increasing with education to an endpoint usually below that of the group with the least education. For example, 92% of the computer users who have not graduated from high school indicated that they have used a social networking site, as did 74% of high school graduates, about 80% of those with some college or with a four-year degree, decreasing again to 71% of post grads. Similarly, 82% of those who have not graduated from high school indicated using the computer to look for a job or job training, dropping down to 38% of the high school graduates, up to about 55% of those with at least some college. Finally, about one-third of all the education groups except for the high school graduates (15%) indicated that they have contributed to a blog, wiki, or other group.

A different wave pattern describes downloading a podcast. It starts low with 10% of those with less than a high school education saying they do this, jumping up to 37% of high school graduates, then dropping back down to 26% of those with some college and back up to 40% of those with a four—year degree or more.

Language spoken at home: Most of the effects of language spoken at home could be predicted from earlier findings – computer users living in Spanish-speaking households had lower overall computer experience scores (1.9 vs. 6.5), were less likely to have sent or opened an email attachment (73% vs. 96%), search on the web (91% vs. 100%) or installed new software (88% vs. 97%). Spanish-speaking computer users were less likely to purchase products or services online (51% vs. 70% of other language speakers vs. 88% of English speakers). With computer users who speak other non-English languages at home, the Spanish speakers were less likely than computer users who speak English at home to make a donation to charity online (27% vs. 55%). In a different pattern, computers users in Spanish-speaking households were *more* likely to use computers to get health or medical information than computer users living in other non-English speaking households (87% vs. 60%). Half of the computer users who speak English at home use computers to find local school information, compared with 58% of the Spanish speakers and 78% of the speakers of other languages.

Household income: Figure 34 shows that overall, computer experience and the number of different uses of computers, increases with income.

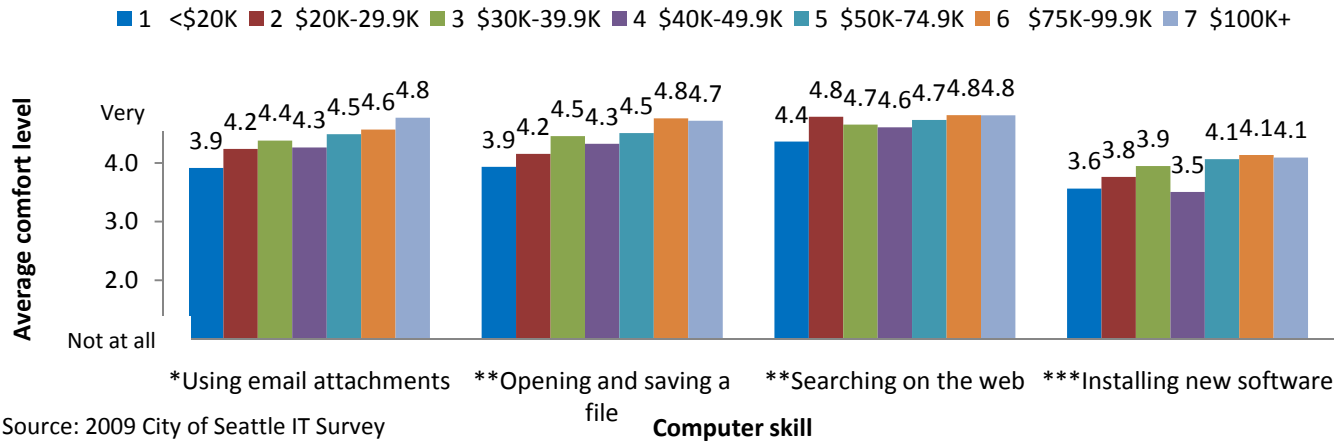
Figure 34. Summary scores of computer literacy and computer use increase with income



Source: 2009 City of Seattle IT Survey
*Computed from responses of all computer users

Figure 35 shows that comfort with four of the five computer tasks increases with income, some more linearly than others.

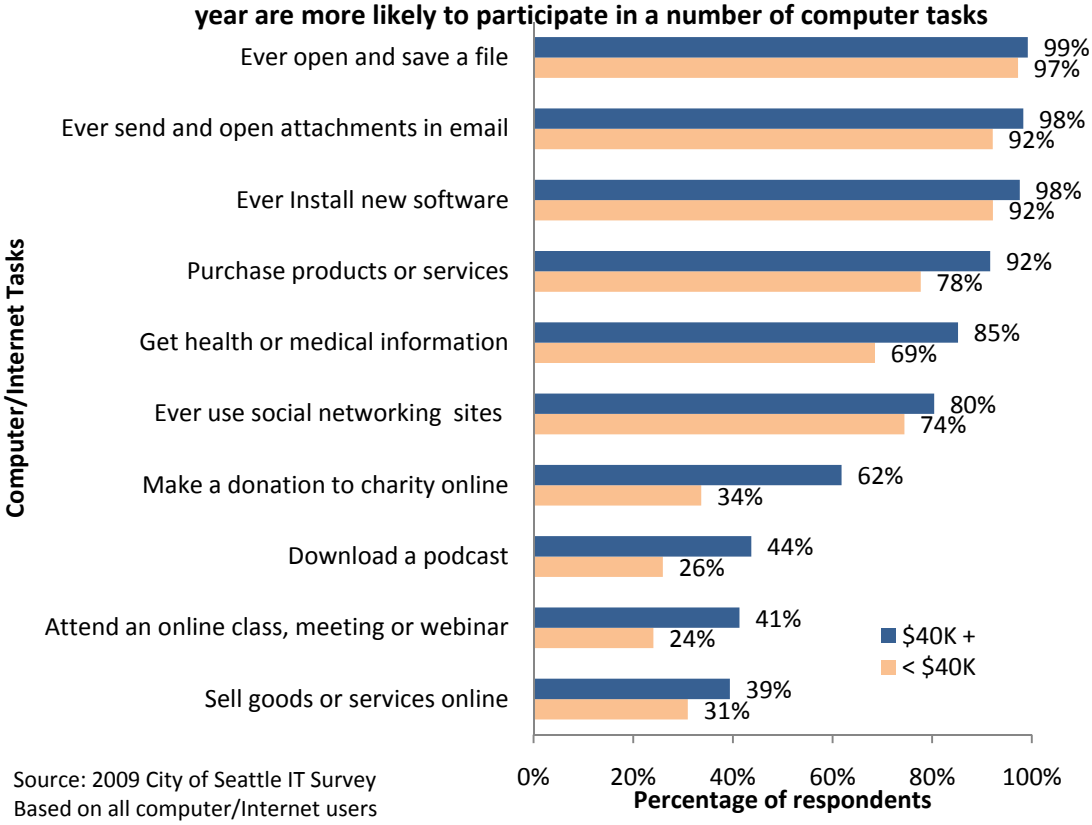
Figure 35. Comfort with basic and more advanced computer tasks increased with income



Source: 2009 City of Seattle IT Survey
* Asked of email users
**Asked of all computer users
***Asked of those who search on web or open/save a file with at least some comfort

Figure 36 illustrates the percentage of computer users with household income of $40,000 or more (top, dark bar) or less than $40,000 (bottom, light bar) using the computer for each of the applications that increased with income.

Figure 36. Computer users in households with more than $40,000 per year are more likely to participate in a number of computer tasks



Source: 2009 City of Seattle IT Survey
Based on all computer/Internet users

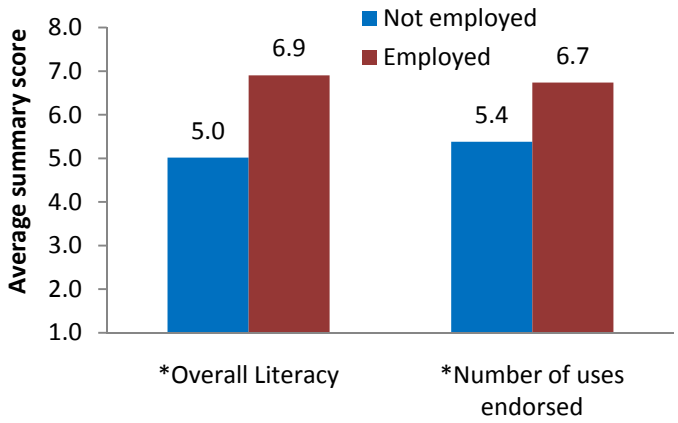
This figure shows that those with more income are more likely to have used email attachments, to have opened and saved a file, and to have installed new software. Computer users with more income are more likely to have purchased products or services online, found health or medical information, used social networking sites, made a donation to a charity online, downloaded a podcast, attended an online class, and sold goods and services online.

Employed: Figure 37 shows that computer users who work at paying jobs had higher summary scores of computer experience and computer use than other computer users.

Figure 38 provides some detail as it illustrates the average comfort level of computer users in the two groups performing basic and advanced computer tasks.

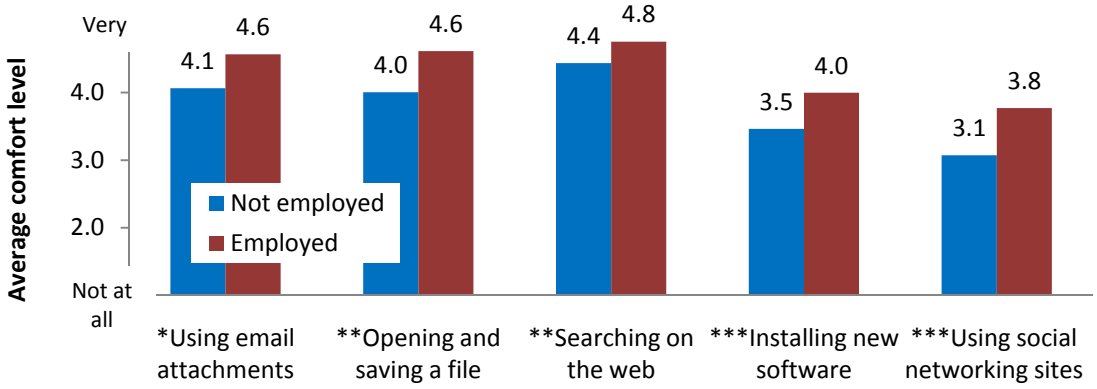
Figure 39 summarized the higher level of participation in nearly all the computer tasks included in this survey by computer users who work at paying jobs, as compared with those who do not have paying jobs. Some of these differences were smaller than a few percentage points and so were excluded from the figure.

Figure 37. Summary scores of computer literacy and computer use higher for computer users employed at paying jobs



Source: 2009 City of Seattle IT Survey
*Computed from responses of all computer users

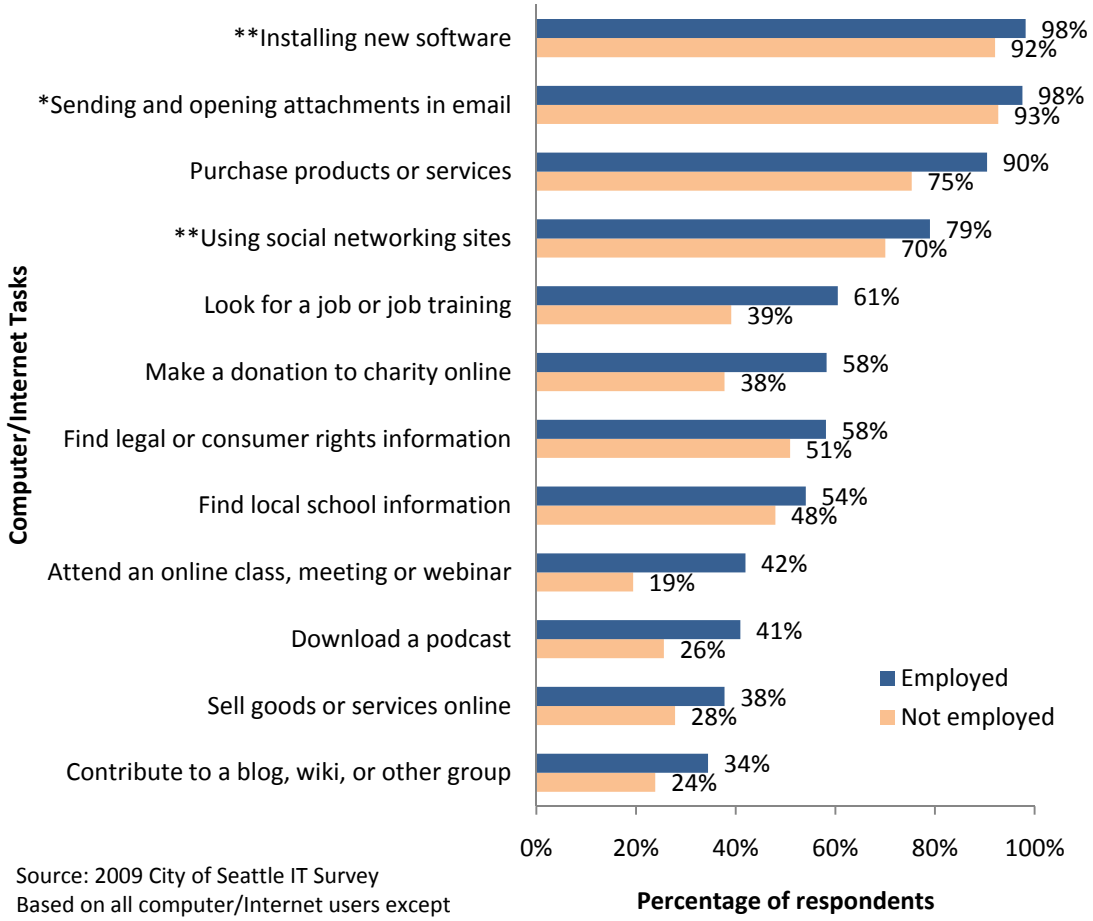
Figure 38.
Computer users who work at paying jobs have more comfort with basic and advance computer tasks than counterparts who are not employed



Source: 2009 Seattle IT Survey
* Asked of email users
**Asked of all computer users
***Asked of those who search on web oropen/save a file with at least some comfort

Getting health or medical information was the single task that did not follow this pattern – computer users were equally likely to use computers to find health or medical information, regardless of employment status.

Figure 39. Computer users with paying jobs were more likely to use the computer to perform a number of computer tasks



Source: 2009 City of Seattle IT Survey
Based on all computer/Internet users except
* Based on all email users
**Based on computer users with at least some comfort with basic tasks

Figure 39 shows the consistent pattern of more participation in various tasks among computer users who are employed at paying jobs.

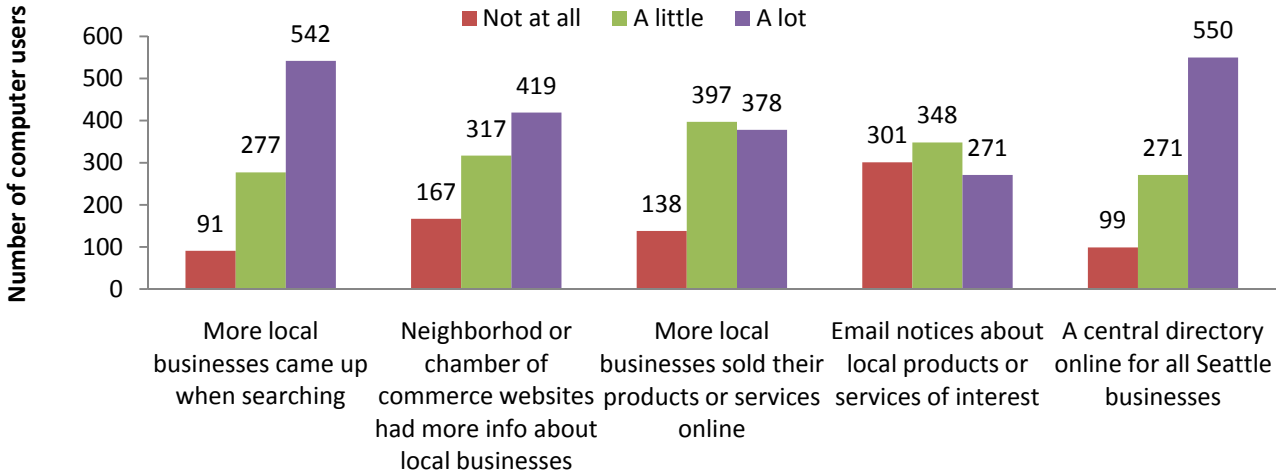
Business and Economic Development

Summary: Computer users were asked questions about using the computer and Internet to do business locally. Most (80%) of the computer users said that they had used the Internet in the past year to find information about local businesses, up from 2000 (61%) and 2004 (71%). More than half (55%) said they had purchased goods or services from local businesses over the Internet in the past year.

Respondents were most favorable about the ideas of a central directory online for all Seattle businesses, and more local businesses coming up when searching the Internet as ways of making it easier for them to find or purchase from local businesses on the Internet, and least positive about the idea of receiving email notices about local products or services of interest. Respondents seem to want convenient access to information about local businesses, but are not as eager to have those businesses contact *them*.

Computer users were asked to indicate the potential helpfulness of each of several ideas for making it easier to find or purchase from local businesses on the Internet. Six in ten respondents said that having a central directory online for all Seattle businesses would help them "a lot," and about as many said that having more local businesses come up when searching with Google or some other search engine would help "a lot." Not as many were positive about being able to sign up for email notices about local products or services that they are interested in (one-third said it would not help at all, and 30% said it would help "a lot." Respondents were somewhat more positive about the suggestion that their neighborhood or Chamber of Commerce website should include more information about local businesses, including links to the businesses (46% said it would help "a lot" and only 19% said "not at all"). Most respondents thought it would help "a little" (44%) or "a lot" (41%) if more local businesses sold their products or services online.

Figure 40. Respondents favor more local businesses coming up when searching and a central online directory for all Seattle businesses

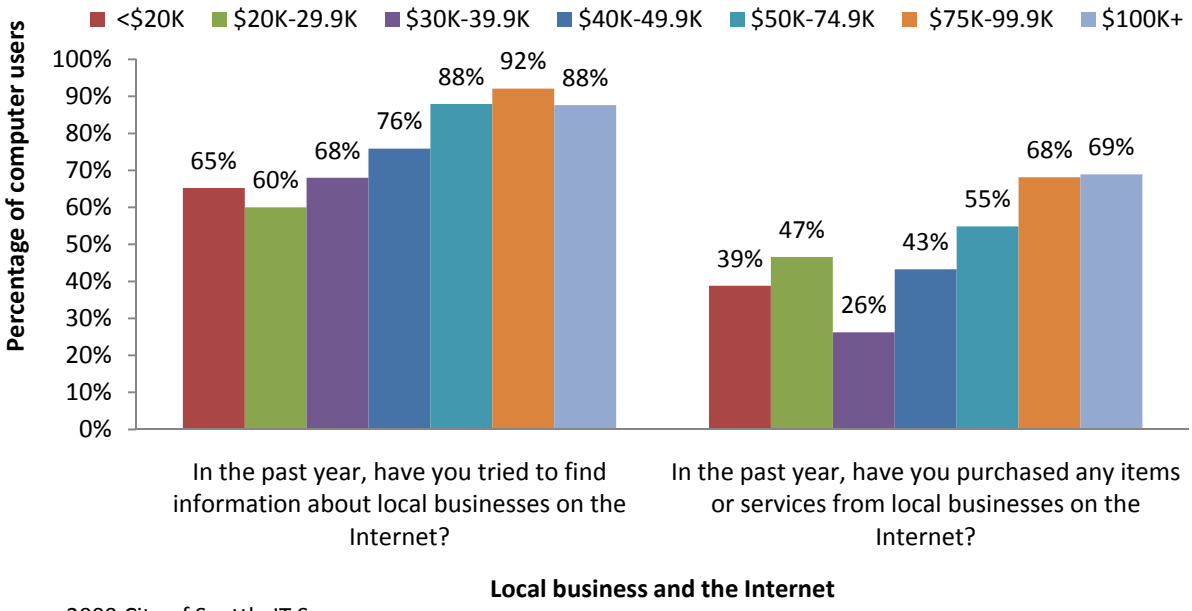


Source: 2009 City of Seattle IT Survey
Asked of all computer users

These findings suggest that respondents want to be able to find local businesses online, but are less eager to have those businesses contact *them* with offers.

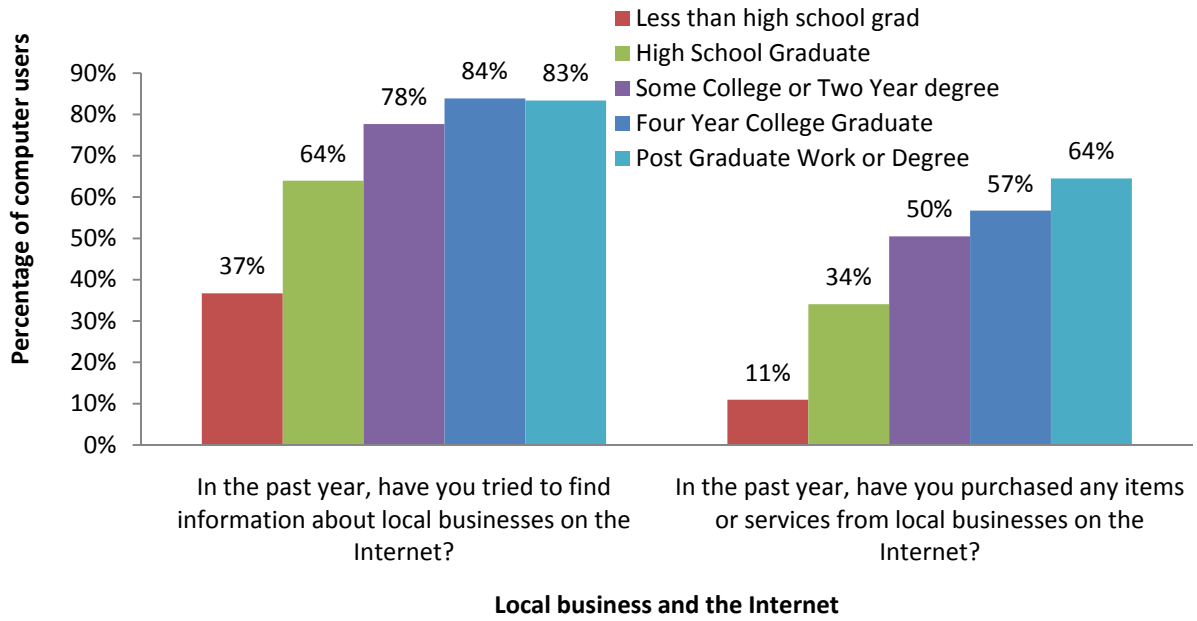
Earlier sections in the report show that the use of the Internet increases with income and education, and Figures 41 and 42 follow the same pattern: the use of the Internet to find information about local businesses or to purchase goods or services from local businesses increases with income and education. The relationship between income or education and having purchased from a local business may indicate a more pronounced effect of income or education.

Figure 41. Use of the Internet in the past year to find information about or to purchase from local businesses increases with income



Source: 2009 City of Seattle IT Survey
Asked of all computer users

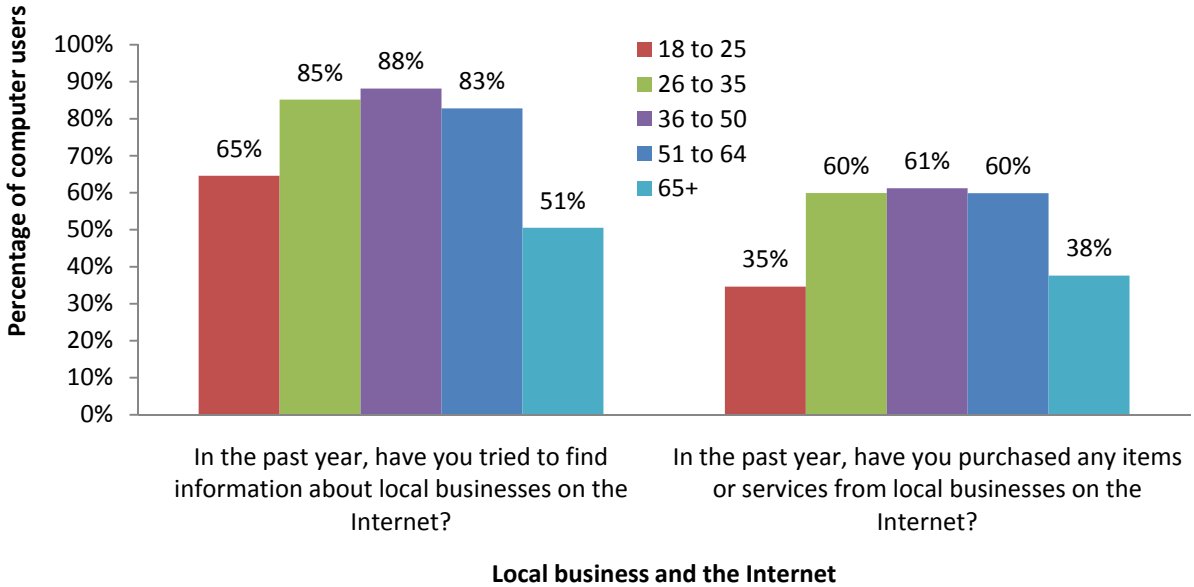
Figure 42. Use of the Internet to find information about or to purchase from local businesses increases with education



Source: 2009 City of Seattle IT Survey
Asked of all computer users

Figure 43 also shows a pattern that has appeared before – the inverted U, indicating participation that increases with age up to middle age when it begins to decline back to the lower levels of the youngest group, or even lower.

Figure 43. Use of the Internet to find information about or to purchase from local businesses increases to middle age and then declines

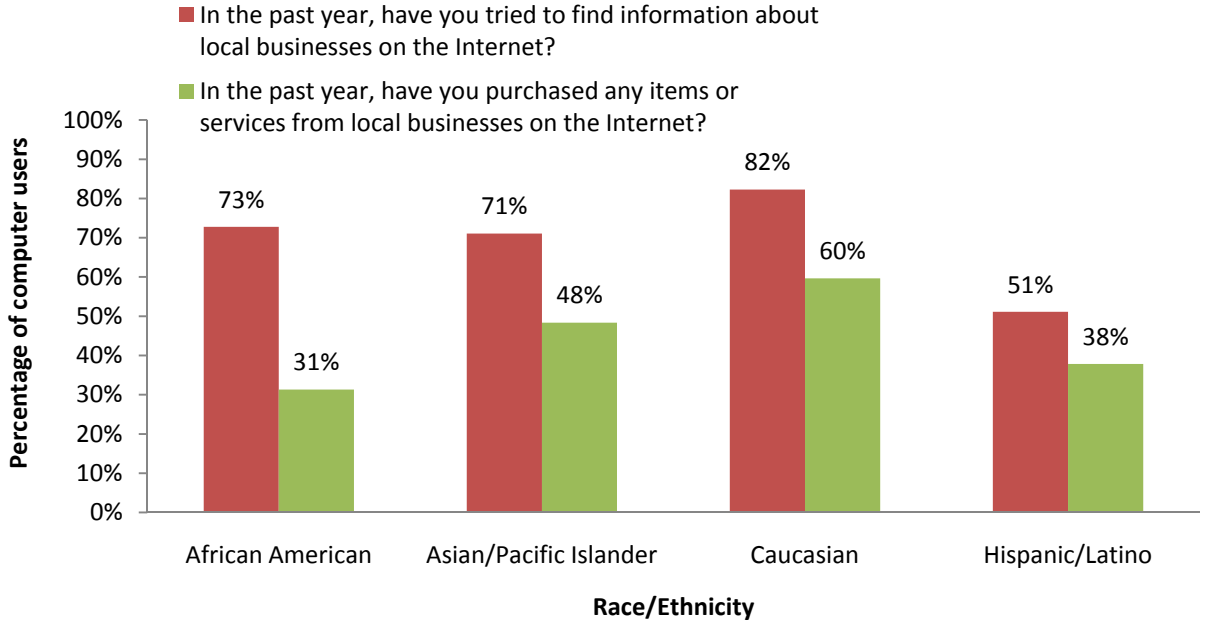


Source: 2009 City of Seattle IT Survey
Asked of all computer users

Individuals with disabilities were less likely to use the Internet to find information about local businesses (75% vs. 80%) or to purchase from them (37% vs. 56%), as were people who are not employed at a paying job. 64% of the respondents who were not working at a paying job said they use the Internet to find information about local businesses, compared with 86% of employed respondents, and 38% of respondents who are not employed used the Internet to make a purchase from a local business, compared with 62% of employed respondents.

Figure 44 illustrates the relationship between race and the use of the Internet to find information about or purchase from local businesses. This figure shows that a similar percentage (70% to 80%) of African American, Asian/Pacific Islander, and Caucasian respondents use the Internet to find information about local businesses, half again as likely as the Latino respondents (51%), but these groups are not equally likely to *purchase* from these businesses online. Caucasian respondents are about twice as likely as African American respondents to use the Internet to *purchase* from local businesses.

Figure 44. More respondents use the Internet to find information about local businesses than to purchase from them online; these gaps are greater for some ethnic groups. Latino computer users are least likely to use the Internet this way

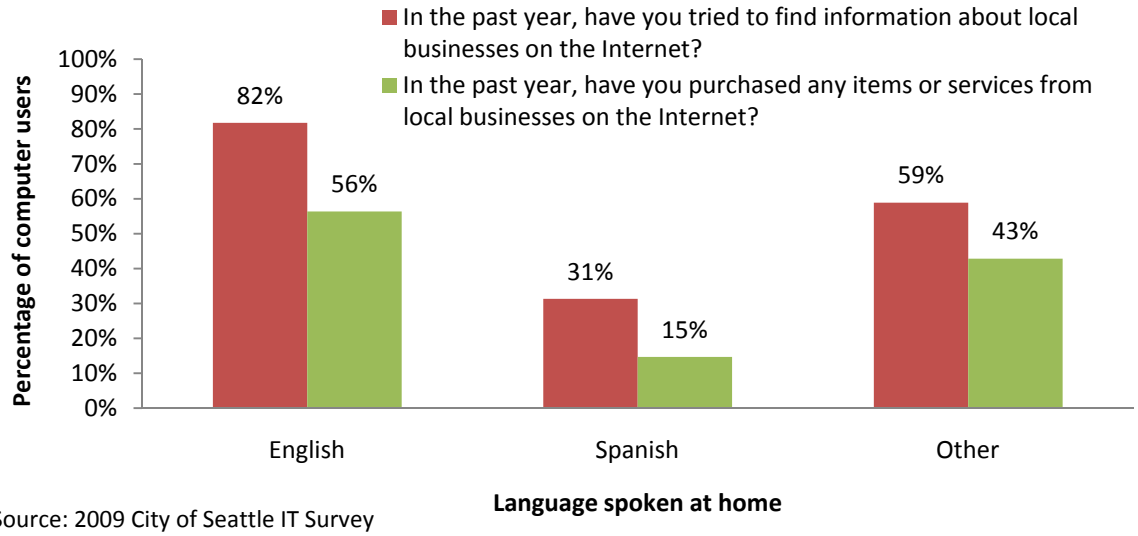


Source: 2009 City of Seattle IT Survey
Asked of all computer users

Figure 45 shows that respondents who live in Spanish-speaking households may have contributed strongly to the reduced use of the Internet to find information about or purchase from local businesses. This figure shows that only about one-third of respondents who speak

Spanish at home use the Internet to find information about local businesses, and only about half that many used it to buy from these businesses.

Figure 45. Respondents who speak English at home are more likely to use the Internet to find information about and purchase from local businesses; Spanish-speaking respondents are least likely to use the Internet this way

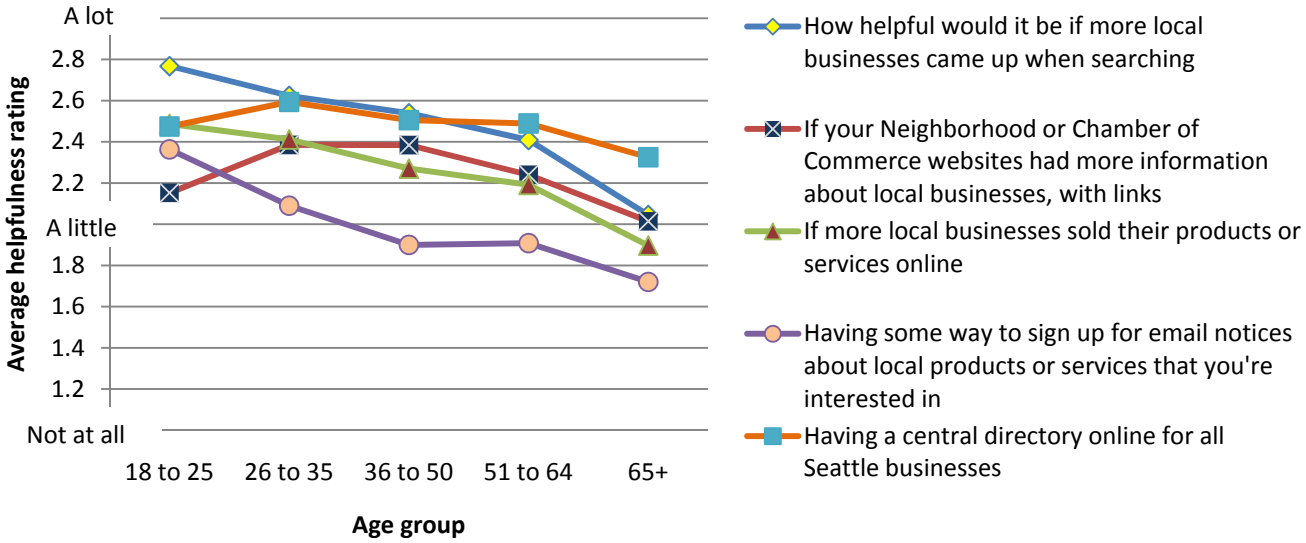


Source: 2009 City of Seattle IT Survey
Asked of all computer users

Respondents were asked in previous surveys whether they had used the Internet to find information about local businesses. Each survey saw about a 10-point gain, from 61% of computer users in 2000, up to 71% in 2004 and 80% in the current survey. This pattern is similar for all groups except for Latino respondents and younger respondents. In both cases, the increase between 2000 and 2004 followed the pattern of the other groups, but in 2009, both groups decreased their use of the Internet this way, while other groups continued to increase.

Figure 46 shows a fairly consistent pattern of the response across age groups to the five ideas for making it easier to find and purchase from local businesses online. Overall, younger respondents were more positive about the ideas, with the helpfulness rating declining over age. The two exceptions followed the inverted U shape described earlier in which lower ratings are given by the younger respondents, as well as the older respondents. This pattern emerged in response to the second suggestion (that the neighborhood or Chamber of Commerce websites would have more information about local businesses), and the fifth suggestion (having a central directory online for all Seattle businesses), the two ideas that would require the user to access an intermediate site to locate the business of interest. Computer users with disabilities were more positive about the idea of a central online business directory (2.7 vs. 2.5).

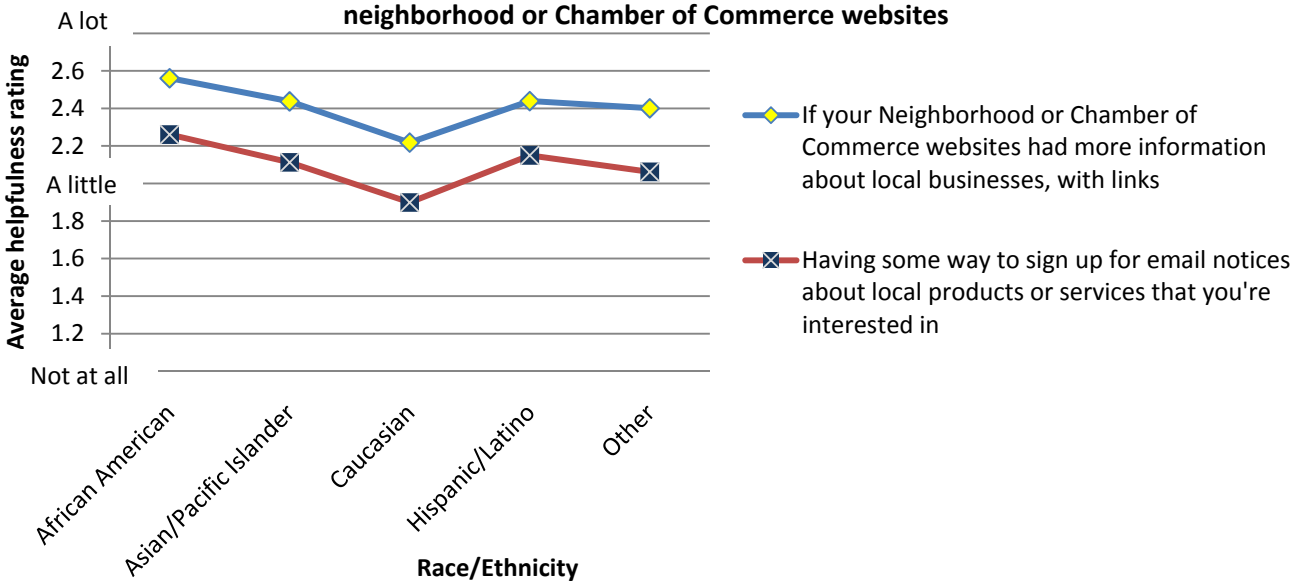
Figure 46. Most of the ideas for making it easier to find or purchase from local businesses online are more positively regarded at younger ages



Source: 2009 City of Seattle IT Survey
Asked of all computer users

Figure 47 illustrates the response to two suggestions that were received differently by respondents of different ethnicities. Caucasian respondents were less positive about both receiving email messages about local products or services of interest, and having more information about local businesses on the neighborhood or Chamber of Commerce websites. People living in Spanish-speaking households were the most positive about receiving email messages about local products or services of interest (2.3 vs. 2.0 in other households).

Figure 47. Caucasian respondents are less positive about receiving email notices about local products or services, and about having information about local businesses on neighborhood or Chamber of Commerce websites



Source: 2009 City of Seattle IT Survey
Based on all computer users

Telecommuting

Summary: Two-thirds (66%) of the computer users who work at a paying job reported that they use the Internet to work from home. This could include working from home for an employer, or using the Internet to operate a business from home. Telecommuting increases with income and education, and is less common among African American and Latino respondents, who are also less likely to name "work" as a location where they do "most of their computing" and who are less likely to have home computer or Internet access. About a quarter of telecommuters (compared to 16% of other respondents) have premium or business class Internet access and 85% say that significantly faster Internet access would be valuable (compared to 70% of other respondents). Reasons given by respondents for not working from home, or for not working from home more often, had more to do with work or person constraints (needing to work with a team, type of job does not permit telecommuting, too distracting at home) than technology issues.

About four in ten of the computer users said that the Internet saves them "a lot of driving." This response was more common among telecommuters and people with disabilities, and less common

among seniors, perhaps pointing to a way to help seniors retain some independence after they give up driving.

The use of the Internet to work from home was not consistent across all demographic groups. Telecommuting increased with income (Figure 48) and education (Figure 49).

Figure 48. Using the Internet to work from home increases with income

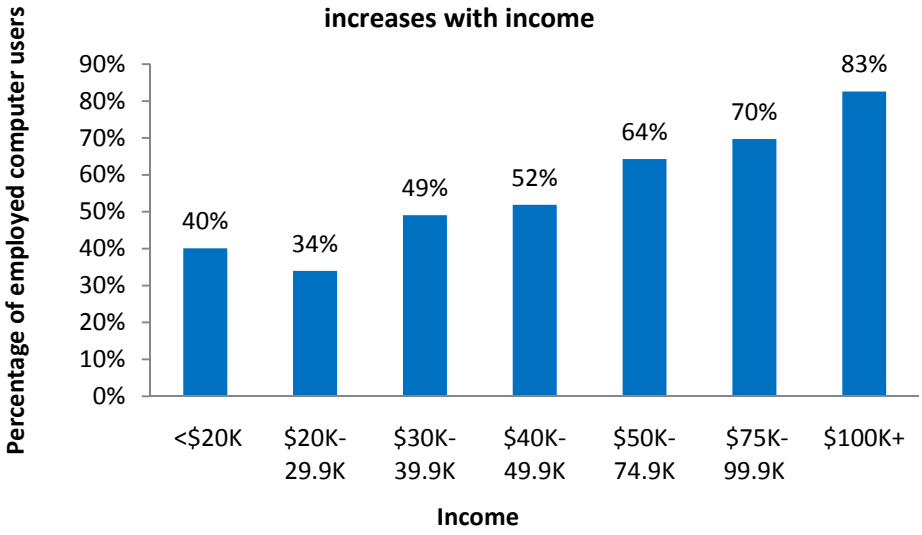
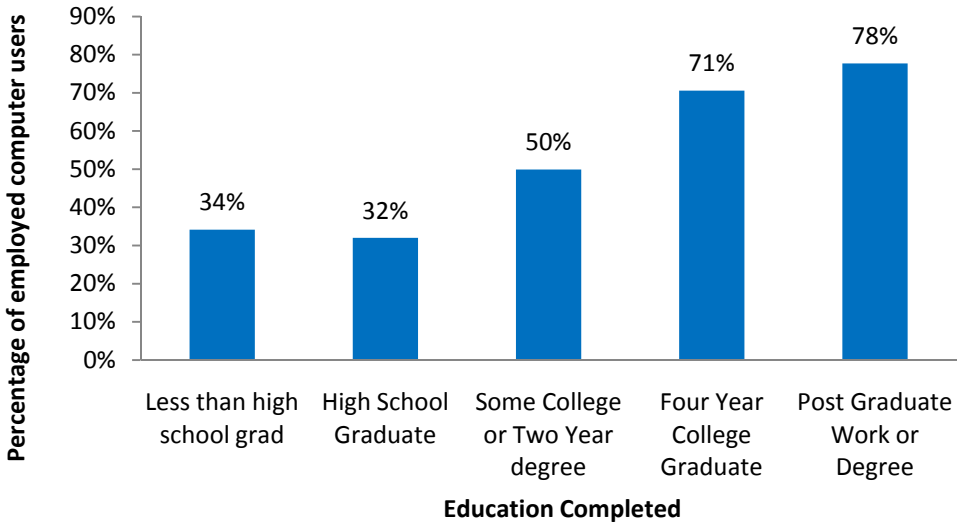


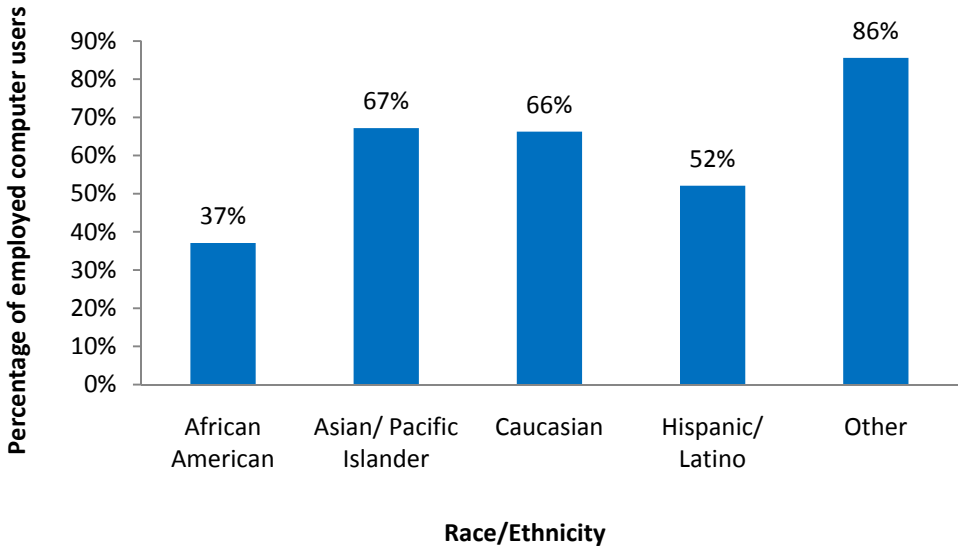
Figure 49. Using the Internet to work from home increases with education



Source: 2009 City of Seattle IT Survey
Based on all employed computer/Internet users

Figure 50 shows that African American and Latino respondents are less likely to use the Internet to work from home. Recall that these groups are also less likely to have a computer or the Internet at home and are less likely to name "work" as where they do most of their computing. However, African American respondents are as likely as Caucasian or Asian/ Pacific Islander respondents to be computer users and to have been computer users for at least a year.

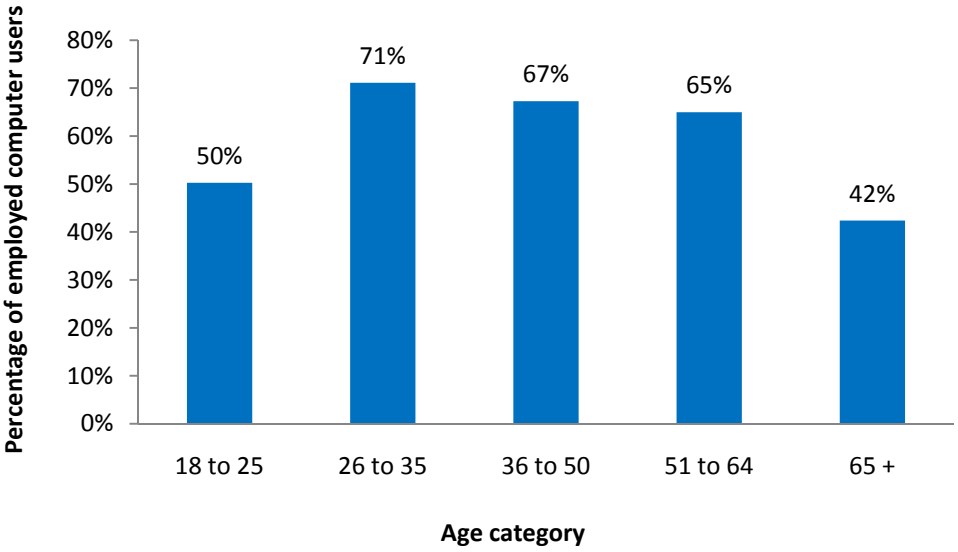
Figure 50. African American and Latino respondents are less likely to use the Internet to work from home



Source: 2009 City of Seattle IT Survey
Based on all employed computer/Internet users

Figure 51 shows a familiar inverted U-shaped pattern where the middle age groups are more likely to report using the Internet to work from home, while the youngest and the oldest age groups are less likely. This pattern holds across the different ethnic groups.

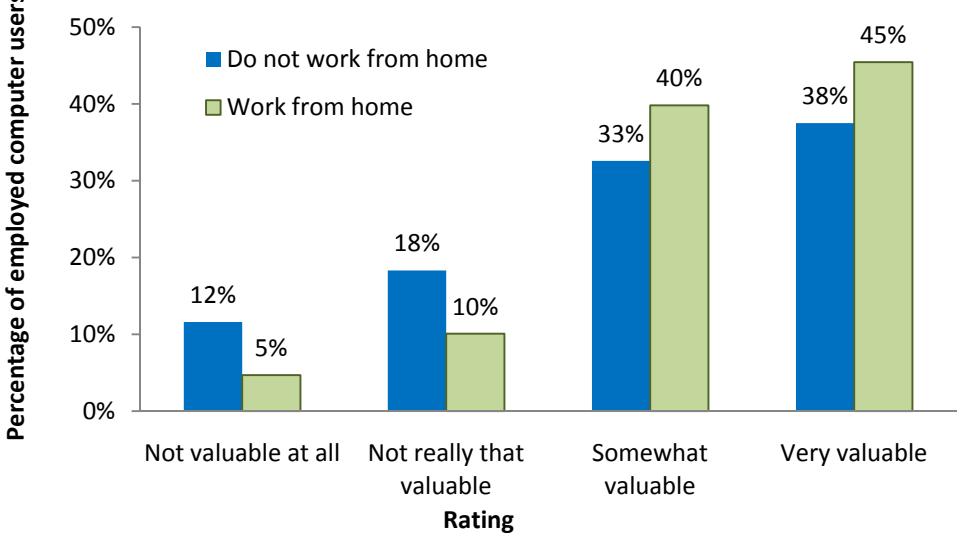
Figure 51. Using the Internet to work from home decreases with age, except for the youngest age group



Source: 2009 City of Seattle IT Survey
Based on all employed computer/Internet users

About 26% of the telecommuters have premium or business class computer access, somewhat, but not significantly more than people who do not use the Internet to work from home (16%). However, Figure 52 shows that significantly more telecommuters say it would be valuable to have significantly faster Internet service (85% vs. 70%).

Figure 52. Most respondents favor having a faster Internet connection at home; telecommuters assign it greater value

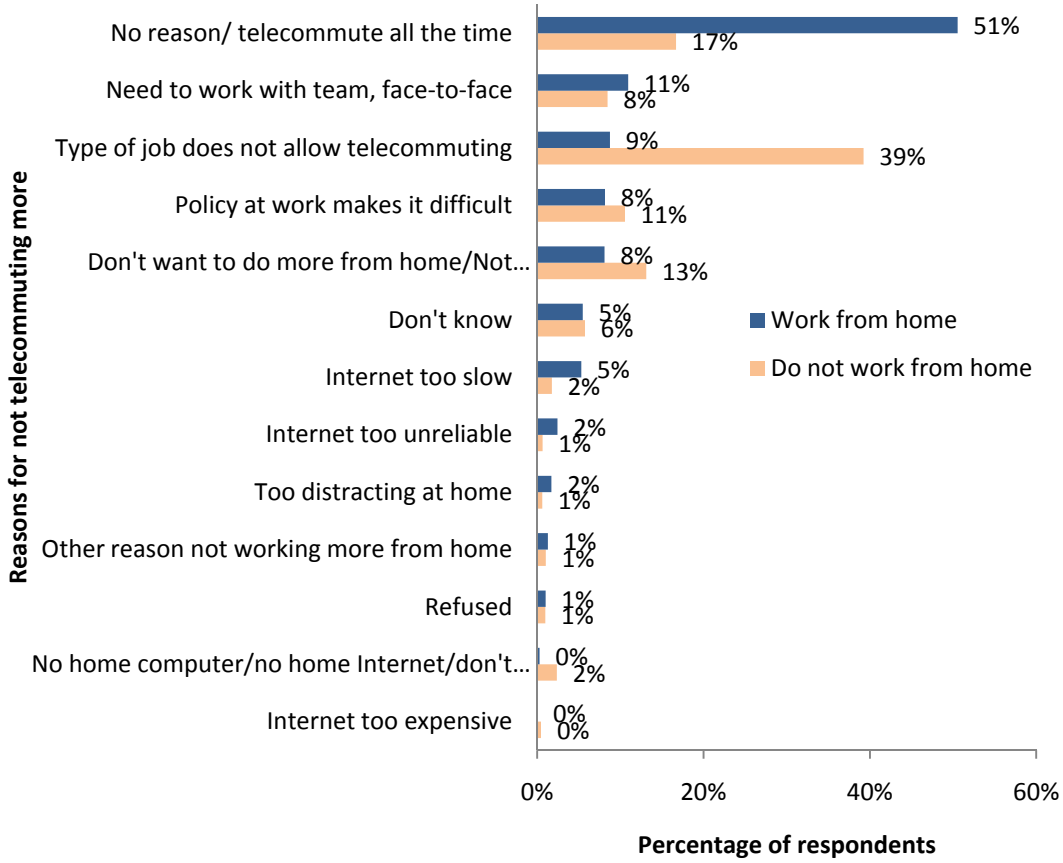


Source: 2009 City of Seattle IT Survey
Based on all employed computer/Internet users

Respondents were asked if there was any reason they don't work from home or work from home more than they do. Figure 53 shows that among the telecommuters, half said that there is no reason or that they work from home all they want. Most of the reasons given for not working from home (or for not working from home *more often*) were either work-related (type of job does not allow telecommuting, need to work with a team, or policy at work makes it difficult) or personal (don't want to do more from home, prefer or default to the office, too distracting at home). Only a few said it is because the Internet is too slow (4%), too unreliable (2%), or too expensive (less than 1%).

No substantial differences were found among demographic groups in reasons given.

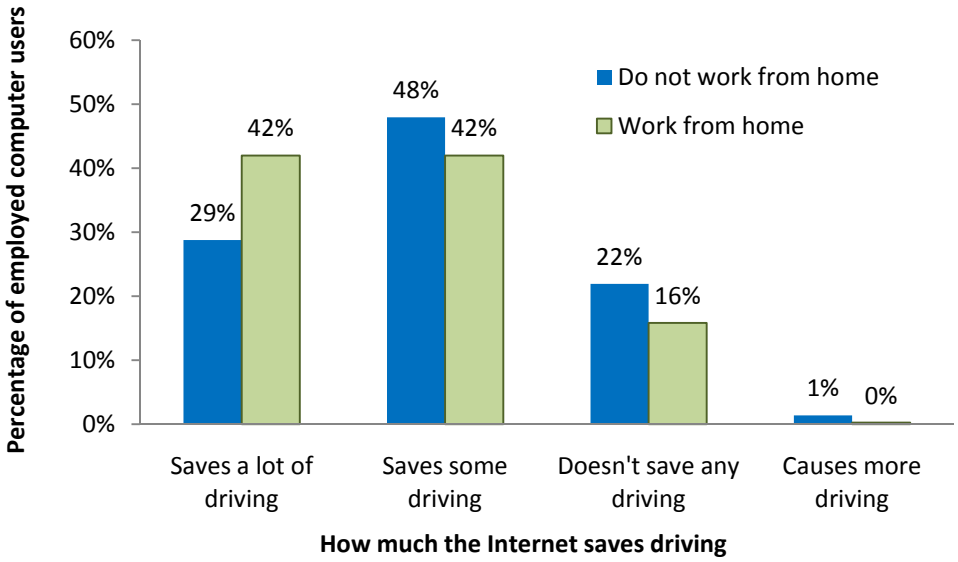
Figure 53. Computer users who do not work from home most often say it's because their type of job does not allow it; half of those who do say they do so all the time



Source: 2009 City of Seattle IT Survey
Based on all employed computer/Internet users

Overall, 38% of the computer users said that the Internet saves them "a lot of driving." Another 42% said it saves them "some driving" and 19% said it doesn't save any driving. Figure 54 shows that telecommuters were more likely to note that the Internet saves them "a lot of driving."

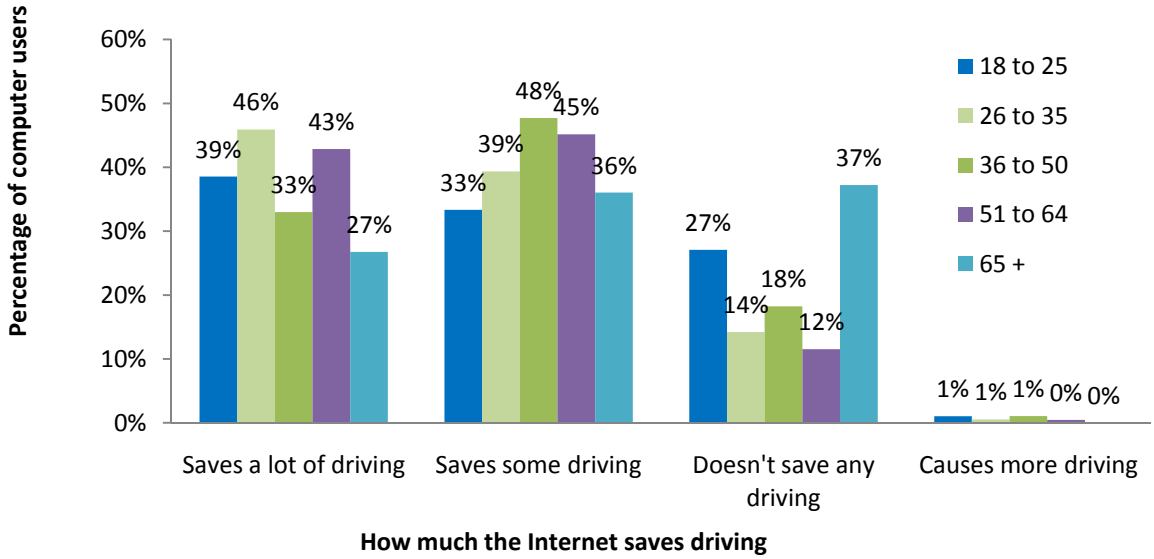
Figure 54. The Internet saves "a lot" of driving, especially for telecommuters



Source: 2009 City of Seattle IT Survey
Based on all employed computer/Internet users

Analysis revealed a different pattern for saving driving by different demographic groups. Figure 55 shows that the Internet saves driving sporadically across the age groups. A summary view suggests that the Internet saves driving more for the middle age categories, and that the savings is least for seniors aged 65 and older. This finding may be important to consider as it may point to a way to help seniors retain some independence as they become less able to drive.

Figure 55. The Internet saves driving less for seniors



Source: 2009 City of Seattle IT Survey
Based on all computer/Internet users

People with disabilities were more likely to note that the Internet saves them driving (59% said it saves "a lot of driving," compared with 36% of people without disabilities).

Communication With Government

Seattle.gov

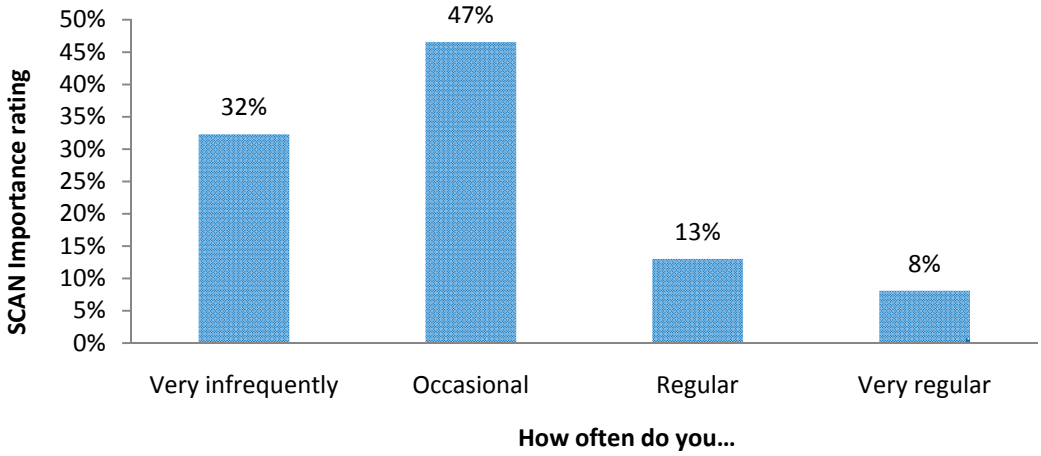
Summary: The percentage of respondents using the City's website, Seattle.gov has increased steeply since 2000 when about one-third said they had visited the website. This increased to 56% in 2004 and again to 78% in 2009. About two-thirds of the visitors say they use the website at least occasionally. The most common reason given for not using the website more often is because of having no need for it. Demographic subgroups more likely to use the website and/or likely to use it more often, including employed respondents; those with more education; those with more income; those who speak English at home; and those in the middle age groups. Groups that are less likely to use the website include people with disabilities; African American or Latino respondents; and seniors. Seniors have been slow to come to the website, with 19% of seniors visiting the website in 2000, increasing to 24% in 2004 and rising to 35% in 2009. As with other changes among seniors, this increase could be due to growing acceptance and comfort with computers among this demographic group, or a changing composition of this demographic group as "new" seniors, perhaps more comfortable with technology, are "aged in."

Nearly two-thirds of respondents offered some ideas for information that they would like to get from the City. Some suggestions included activities, interests, and events around the city; information to enable them to monitor City business, both in terms of tracking the progress of public projects, and in terms of budget transparency; information about how the City is improving its functioning and its preparedness for events such as the snowstorm that hit the City around the time of the telephone interviews; services provided by the City; information specific to local neighborhoods or communities; information about transportation, such as road closures, traffic accidents, and realtime transit tracking.

About three fourths (78%) of respondents have visited the Seattle.gov website. Figure 56 shows that about two-thirds said that they were at least an "occasional" visitor.

Some demographic differences were

Figure 56. Most Seattle.gov visitors use the website at least occasionally

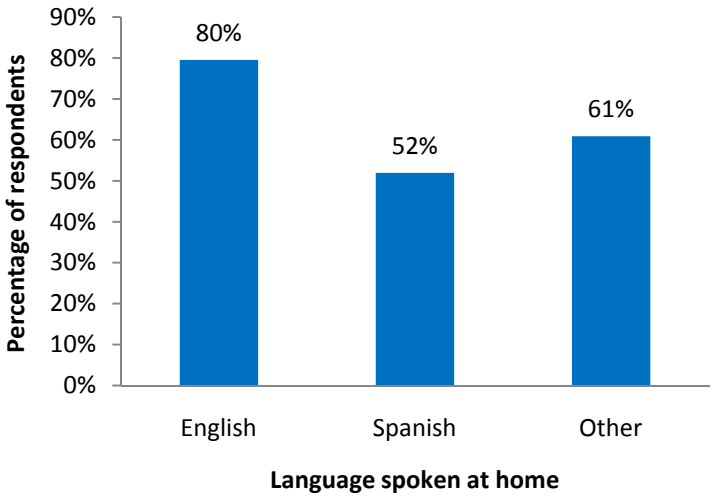


Source: 2009 City of Seattle IT Surveys
Based on respondents who said they have ever visited the website

found in visiting the website.

- **Education:** As education increases so does the likelihood of visiting the Seattle.gov website
- **Employed:** People who work at a paying job are more likely to visit the Seattle.gov website (83% vs. 66%), and they tend to visit Seattle.gov more frequently
- **Disability:** People with a disability are *less* likely to have visited the Seattle.gov website (72% vs. 78%), and those who have visited it, visit it less often than people without disabilities.
- **Ethnicity:** African American and Latino respondents were less likely to have visited the Seattle.gov website (66% vs. 79%)
- **Age:** The pattern formed by the age groups in response to the question about visiting the Seattle.gov website followed the inverted U shape described earlier, with the youngest and oldest groups less likely to have visited the website (62% and 51%), and the middle age groups more likely (82% or more). Frequency **of visits** at Seattle.gov followed the same inverted U pattern across age.
- **Income:** The percentage of respondents who have visited the Seattle.gov website increased steadily across the income categories, from 60%of the less than $20,000 age group to 86% of the $100,**000** or more income group.
- **Language spoken at home:** Figure 57 illustrates the relationship between language spoken at home and the likelihood of accessing Seattle.gov. People who speak English at home are between a third and a half again as likely to have visited Seattle.gov. In interpreting these findings, it is important to remember that although some of the surveys were conducted in Spanish, the bulk of them were conducted in English. This means that some of the Spanish speakers and all of the respondents who speak some language other than Spanish or English at home were comfortable enough in English to complete a 20 minute telephone interview. When considering how to address this disproportionality, therefore, it may be important to examine possible barriers beyond language. However, focus group results indicate that members of language communities that did not participate in the telephone survey because of language barriers find language to be a signficant barrier in their use of Seattle.gov.

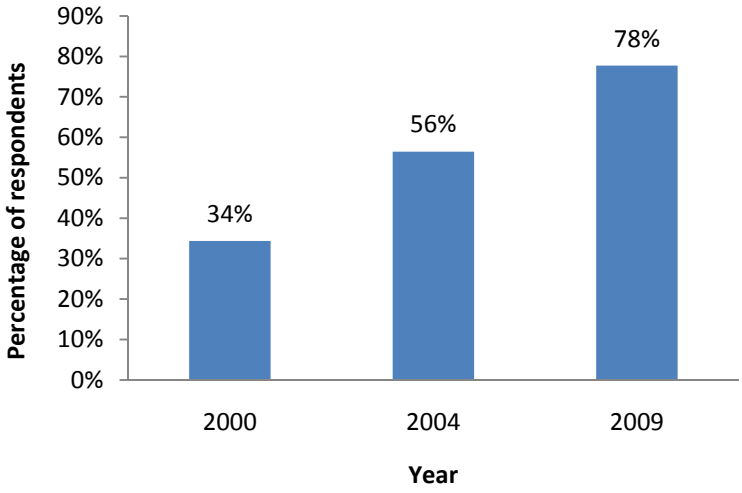
Figure 57. People who speak English at home are more likely to visit the City's website



Source: 2009 City of Seattle IT Surveys
Based on all computer/Internet users

Similar questions were asked of the City's IT survey respondents in 2000 and 2004. An increasing number of the City's residents are visiting the City's website. In 2000, only about one-third of respondents said they had visited the website, increasing to more than half (56%) in 2004, and increasing again to three-fourths (78%) in 2009.

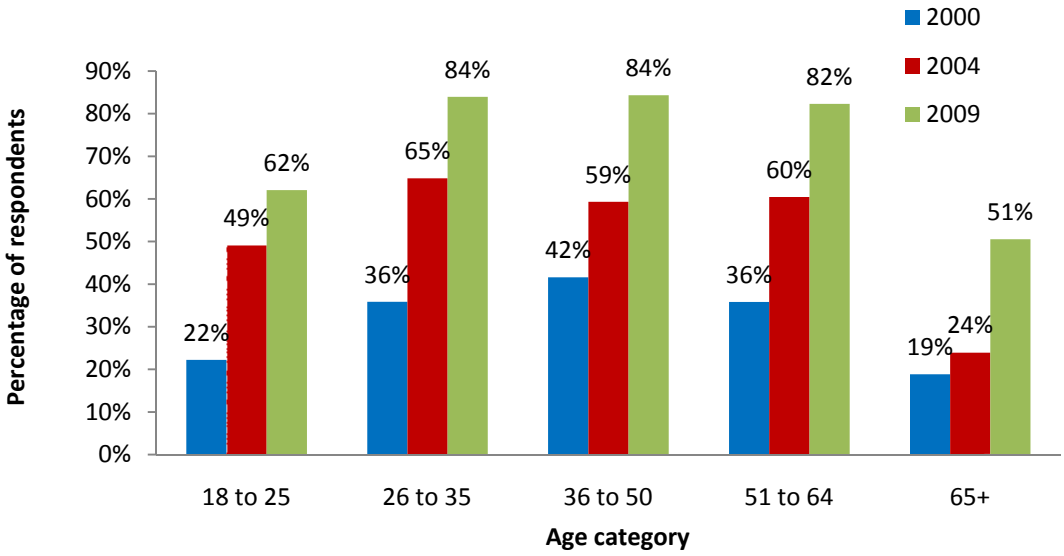
Figure 58. Use of Seattle.gov has increased steadily



Source: 2000, 2004, 2009 City of Seattle IT Survey
Asked only of computer users in 2009; filtered out 2000 and 2004 non computer users for comparability

Most of the changes in percentages who have visited Seattle.gov were similar across demographic groups. Figure 59 illustrates the pattern of change across the three years in likelihood of visiting the Seattle.gov website for respondents in the different age groups. In the first four age groups, a fairly linear increase can be seen in the percentage of respondents who have visited the Seattle.gov website. However, seniors 65 and older seemed slow to visit the website (19% in 2000 up to only 24% in 2004), but are now twice as likely to visit as in 2004, making a 27-point gain, more than in any of the other age groups during the same period.

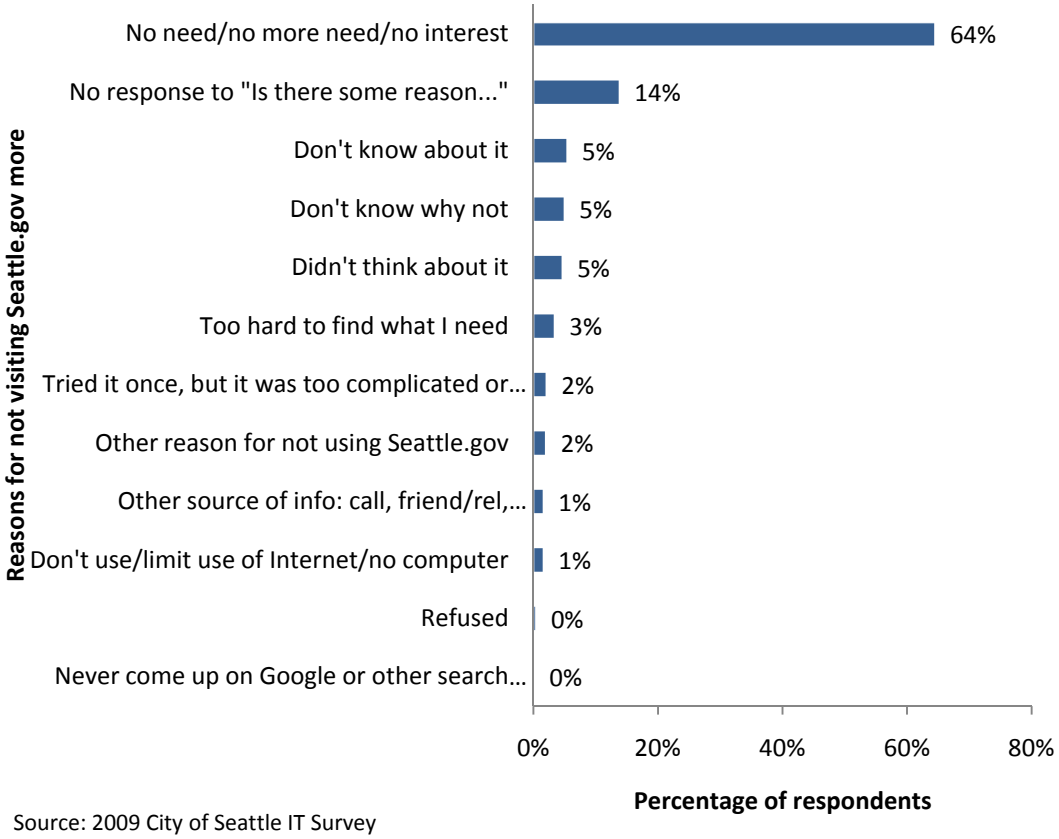
Figure 59. All age groups are increasingly likely to visit Seattle.gov; the increase is greatest among the seniors 65 and older



Source: 2000, 2004, 2009 City of Seattle IT Surveys
Based on all computer/Internet users

Respondents who have not visited Seattle.gov, or who visit it occasionally or infrequently, were asked why. Figure 60 summarizes the responses. For most respondents, it was simply because they had no need or special interest. Only a few found it too hard to find what they need, and even fewer commented that it doesn't come up on a Google search.

Figure 60. Most who have not visited Seattle.gov or who don't visit often simply have no need to do so



Source: 2009 City of Seattle IT Survey
Based on all respondents who have not visited Seattle.gov or who do not visit often

Seattle Channel

Over half of Seattle residents (58%) have seen the Seattle Channel. The Seattle Channel is available on cable and is not available as a broadcast station so understandably, cable subscribers were significantly more likely to have seen the Seattle Channel than non-subscribers in both 2004 (69% vs. 33%) and 2009 (58% vs. 22%). Among the cable subscribers:

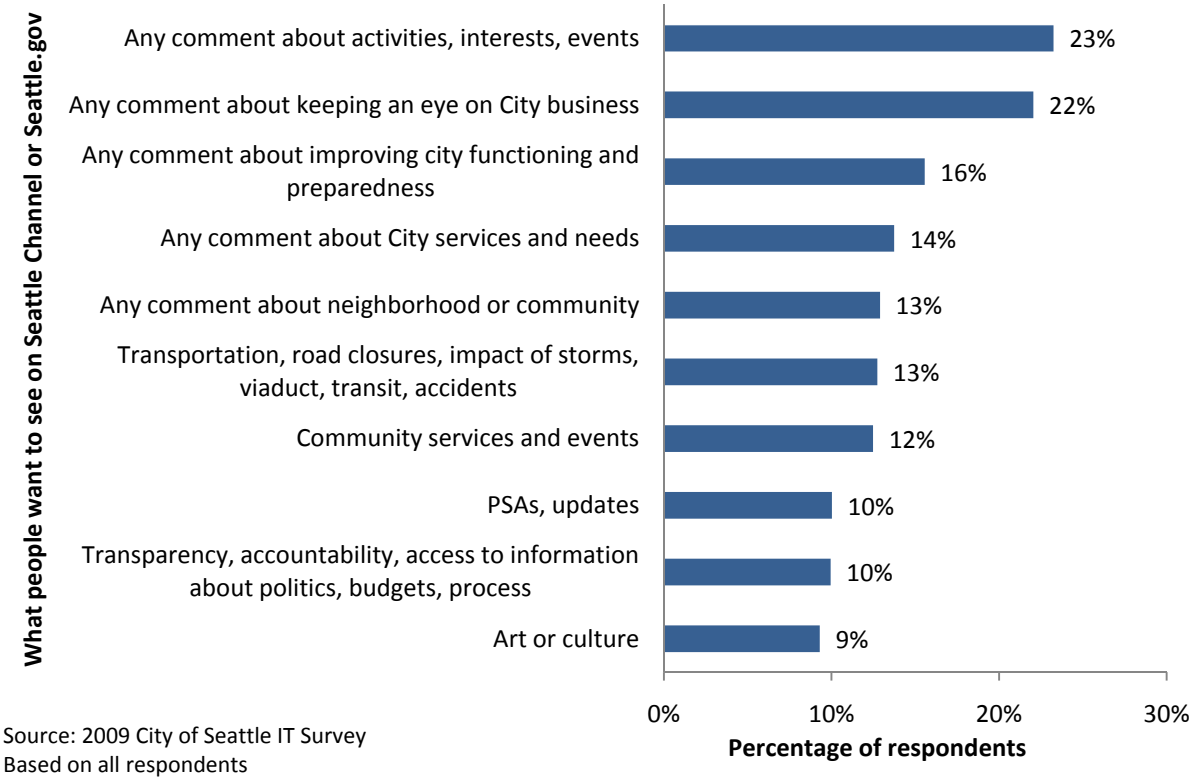
- No differences in viewing were found for different income levels or by employment status.
- In unweighted analysis in both years, people with disabilities were as likely as others to have seen the Seattle Channel.
- In 2009, men were slightly more likely to have seen the Seattle Channel than women (63% vs. 52%).15 This slight trend was also found in 2004 (74% vs. 65%)
- In 2009 only, Latino and Asian/Pacific Islander respondents were less likely than African American and Caucasian respondents to have seen the Seattle Channel (35% and 46% respectively vs. 67% and 61%);
- In 2009, older respondents were significantly more likely to have seen the Seattle Channel (65+: 66%; 51-64: 62%; 26-35: 46%; 18-25: 48%); In 2004, the same trend was found except the oldest group were not the most likely viewers (65+: 68%; 51-64: 82%; 26-35: 65%; 18-25: 54%). 16
- In 2009 only, respondents who speak Spanish at home were significantly less likely than other respondents to have seen the Seattle Channel (26% vs. 58% of English speakers and 63% of respondents who speak some other language at home);
- In 2009 only, respondents with less education were less likely to have seen the Seattle Channel;

What Residents Want to Know More About on Seattle.gov and Seattle Channel

Respondents were asked,"What would you like to know more about in your community that the city could share on its website or cable channel? [Prompt if needed] This could be anything of interest to Seattle residents – how-to information, things about the city, government, cultural events, people, our homes, businesses, or community services." Nearly two-thirds (63%) of the respondents gave a suggestion. The "Top Ten" are listed in Figure 61. Table 8 contains all categories, but not the summary categories that appear in Figure 61.

[15] This difference reached statistical significance with the weighted analysis and as Fisher's Exact Text when unweighted. The p-value for Pearson's Chi-Square was p<.06 unweighted.
[16] Exclusion in the survey of a younger, cell only demographic could have influenced this figure.

Figure 61. Top Ten Topic Summary



Source: 2009 City of Seattle IT Survey
Based on all respondents

Nearly one-fourth of the respondents indicated wanting the Seattle.gov website or the Seattle Channel to be a resource to help them find out about activities, or to advance an interest. Another important issue for respondents, mentioned by 22% of the survey participants, was the ability to "keep an eye on" City business, from being able to track the progress of public projects to budget transparency. Another area of importance to residents is city functioning and preparedness for unexpected events or emergencies. This survey was conducted in January, and many residents had comments about being able to find out procedures during snow storms for example, with many mentioning garbage pick-up schedules. Another frequently mentioned area of interest had to do with the respondent's local community. People want to know more about their own communities and neighborhoods.

Table 8. Topics respondents look to Seattle.gov or the Seattle Channel to learn more about

Topic area	Percentage of Respondents
Transportation, road closures, impact of storms, viaduct, transit, accidents	13%
Community services and events	12%
PSAs, updates	10%
Transparency, accountability, access to information about politics, budgets, process	10%
Art or culture	9%
Local neighborhood information	7%
City business and decisions	6%
Changes in policies/ fees/ processes/ decisions/ planning	6%
Any comment about sustainability, at household or City level	5%
Any comment about jobs, business or economic development	5%
News/Local news	4%
Crime reports and safety information	4%
Weather updates, weather effect (incl schools)	4%
Politics, promises, people	4%
Meetings - neighborhood or city	4%
Schools and education, what's happening, closures, improvements	4%
Government services and resources	4%
Special groups: Latinos, Native Americans, children, parents, elderly	3%
City maintenance status	3%
Utilities, esp garbage and recycling	3%
Human services, children, elderly, teens, homeless people...	3%
Jobs, businesses, economic development	3%
Taxes and spending	3%
Park info, pool info	3%
Environment/energy	3%
Weather disaster/other emergencies	2%
Housing and home, homelessness	2%
How to... conserve, reduce, prepare, parent...	2%
Ways to save money - utilities, taxes	2%
Development - condos, strip malls	2%

Topic area	Percentage of Respondents
Who, what, how	2%
How to contact city employees or city officials	2%
Local interest	2%
Health and safety	2%
Friends, connections, strengthening community	1%
Going Green	1%
Volunteer opportunities, serve or get involved with community	1%
City history	1%
Satisfied with website as is	1%
Licenses, permits, zoning	1%
Ideas for site improvement	1%
Training opportunities	1%
Way to give opinion	1%
Positive news	0%
Sports	0%
Religion	0%
Free/low cost Internet access	0%
Find local producers	0%
City statistics	0%
Animal control and pets	0%

(Note that figures are rounded, so 0% is less than .5%)

Although all demographic subgroups are represented here, some expressed a greater interest in specific topic areas. When considering how to modify the information offered, it might be useful to consider not only overall demand, but also the differential demand of subgroups.

The group differences noted here should not be over-interpreted. For example, a greater percentage of the women (15%) made a comment summarized as "Any comment about neighborhood or community." However, it should not be concluded that men are not interested in this topic area, as 11% of the men made comments also summarized in that code. The purpose of this analysis is to alert the City as to stronger interests in certain subgroups; these finding do not imply an absence of interest in the other groups.

- **Gender:** Women were more likely to mention an interest in crime; health; local interest; volunteer opportunities; information about human services, including children, elderly,

teens, homelessness; special groups such as Latinos, Native Americans, children, parents, elderly; issues pertaining to neighborhood or community; issues pertaining to improving how the city functions and preparedness; issues pertaining to city services and needs. Men were more likely to mention an interest in city taxes and spending; tracking politics, promises and people in the public eye; sports; transparency, accountability, access to information about politics, budgets, and the City process; and issues pertaining to keeping an eye on City business.

- **Ethnicity/Race:**
  - *African American respondents* were more likely to mention an interest in local neighborhood information; issues pertaining to home, housing, and homelessness; training opportunities; City statistics; finding a way to *give* opinions; and issues pertaining to jobs, business, or economic development.
  - *Latino respondents* were more likely to give any response to this open-ended question, and some of the specific areas of interest included news, especially local news; crime reports and safety information; health and safety information; local interest; jobs, business, and economic development; human services for children, elderly, teens, homeless people; information pertaining to special subpopulations, such as Latinos, Native Americans, children, parents, and seniors; and issues pertaining to City services and needs.
  - *Asian/Pacific Islander respondents* were more interest in news, especially local news; community services and events; and religion.
  - *Caucasian respondents* were less likely to mention any particular interest, but those in which the Caucasian respondents expressed more interest than the other ethnic/ racial groups overall include: transportation information including road closures, the impact of storms, progress on the viaduct, transit, and accidents; issues pertaining to the environment or energy use; weather updates or the effect of weather on Seattle life; and Caucasian respondents were more likely to remark that they were satisfied with the information available or the website or cable channel as it is.
- **People with disabilities** expressed more interest than others in issues related to housing, homes, and homelessness; and sports.
- **Age:** Interest in **s**ome topic areas increased with age (with a possible drop off among the seniors aged 65 and older) including sports, contact information for City employees or officials; issues pertaining to transparency, accountability, and access to information about politics, budgets and City processes; and any comment about keeping an eye on City business. Interest in other topic areas *decreased* with age (with a possible drop off in the youngest group), including information about community services and events, information about schools, education, what's happening with Seattle schools, closures, or improvements; jobs, businesses, economic development; city statistics; and any comments about activities, interests or events.
- **Education:** Interest in some topics increased with education, including: interest in utilities, especially garbage and recycling; transportation topics, such as road closures, impact of storms, what's happening with the viaduct, transit news, and accidents;

changes in policies, fees, processes, decisions, and planning; development, such as condominiums and strip malls; licenses, permits, and zoning; City business and decisions; transparency, accountability, and access to information about politics, budgets, and the City process. Interest in other topics *decreased* with education including local interest; health and safety; housing, home, and homelessness; and jobs, businesses, and economic development.

- **Language spoken in the home:** Spanish speakers were the most likely to offer a response to this question. Spanish speakers were more likely to mention an interest in news, especially local news; crime reports and safety information; health and safety information; jobs, businesses, and economic development; training opportunities; City history; information pertaining to special groups, such as Latinos, Native Americans, children, parents, and seniors; City services and needs. Spanish speakers were less likely than the other groups to mention wanting information about transportation, road closures the impact of storms, the viaduct, transit news, and accidents; or any comment about keeping an eye on City business. Respondents living in English speaking households were more interested in transparency, accountability, and access to information about politics, budgets and the City process; and information about City business and decisions. Respondents in non English speaking households were more likely to mention information about local interests. Respondents who speak neither English nor Spanish in the home were more interested in information about preparedness, including weather disasters and other emergencies.
- **Income:** Respondents with a 2008 annual household income below $40,000 were more interested in health and safety information; housing, home, and homelessness; jobs, businesses, and economic development; City history; and information relevant to special groups such as Latinos, Native Americans, children, parents, and seniors. Respondents in households with more income were more interested in transportation, including road closures, impact of storms, the viaduct, transit information, and accidents; taxes and spending; development such as condos and strip malls; City business and decisions; public service announcements and updates; information about improving City functioning and preparedness; and keeping an eye on City business.
- **Employed:** Respondents who are working at a paying job were more interested in information about arts or culture; transportation, including road closures, the impact of storms, the viaduct, transit information, and accidents; and government services and resources.
- **Computer/Internet users:** Current computer or Internet users – that is, those who are more likely to see the City's website[17] – are more interested in utilities, especial lly garbage and recycling; transportation, including road closures, impact of storms, the viaduct; transit information, and accidents; changes in policies, fees, processes, decisions, and planning; development, including condos and strip malls; preparedness for weather disasters and other emergencies; improving City functioning and preparedness; City business and decisions; City maintenance; transparency,

[17] It is important to keep in mind that many non computer users were also interested in these topics.

accountability, and access to information about politics, budgets, and City process; and keeping an eye on City business. Respondents who are not current computer users, and who therefore may not see information on Seattle.gov, were more interested in news, especially local news; crime reports and safety information; health and safety; sports; community services and events; jobs, businesses, and economic development; religion; special groups, including Latinos, Native Americans, children, parents, seniors; and City services and needs.

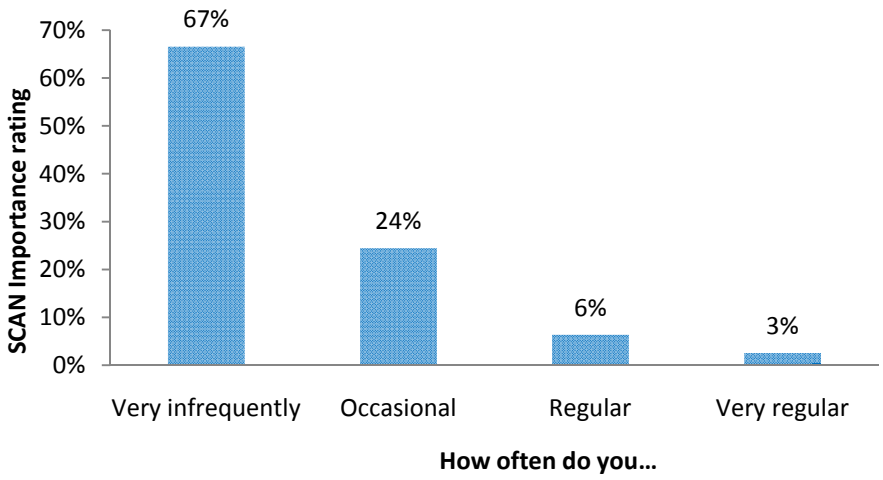
Seattle Community Access Network (SCAN)

Summary: Thirty-eight percent of respondents indicated that they have seen the Seattle Community Access Network (SCAN), a decrease from 49% in 2004. Figure 62 shows that most of the people who have seen SCAN tend to watch it infrequently. Despite this decrease in viewership, as many respondents as in 2004 (more than 80%) continue to think it is somewhat or very important for residents and community organizations to have the opportunity to create and show their own local programs.

Respondents who speak a language other than English at home are half as likely to have seen SCAN. Latino respondents who have seen the channel, along with African American respondents, tend to be more frequent SCAN viewers and rate it as more important. Men are more likely to have seen SCAN, and the percentage of people who have seen SCAN increases with income, though the importance rating of a public access channel decreases somewhat.

- **Gender:** Men are more likely to have seen SCAN (43% vs. 33%)
- **Employed:** People who work at a paying job are more likely to watch SCAN (40% vs. 32%)
- **Ethnicity:**
  - Latino respondents are less likely to have seen SCAN. Those who *have* seen it tend to watch it more regularly than Asian Pacific Islander or Caucasian respondents
  - African American and Latino respondents, and those with ethnicity coded as "other" tend to be more frequent SCAN viewers

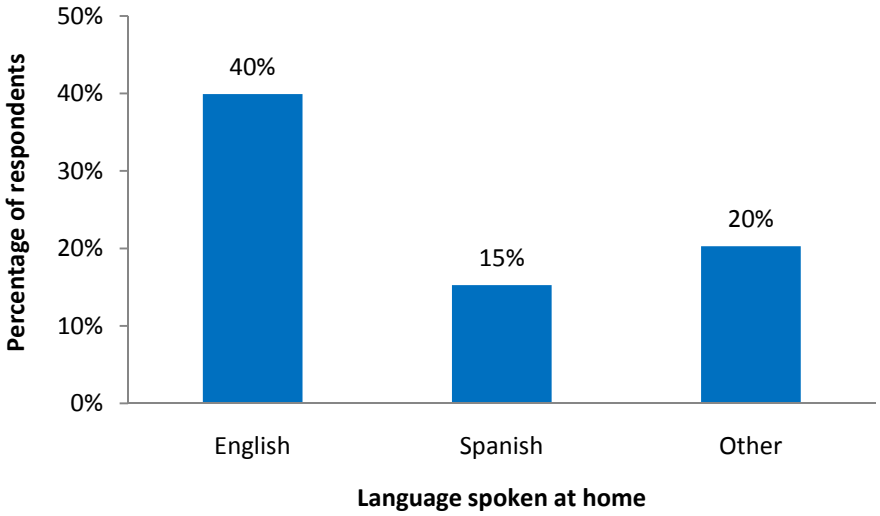
Figure 62. Most SCAN viewers watch infrequently



Source: 2009 City of Seattle IT Surveys
Based on respondents who said they have ever watched SCN

  - Those with "other" ethnicity are much more likely to have watched SCAN (61% vs. 40% or less)
- **Age:**
  - The pattern formed by the age groups in response to the question about watching SCAN followed the inverted U shape similar to that described earlier, except that the youngest group was *much* less likely to have watched it and the seniors were only slightly less likely.
- **Income:** The percentage of respondents who have watched SCAN increases with income.
- **Language spoken at home:** Figure 63 shows that people who speak English at home are twice as likely to have watched SCAN.

Figure 63. People who speak English at home are more likely to watch SCAN

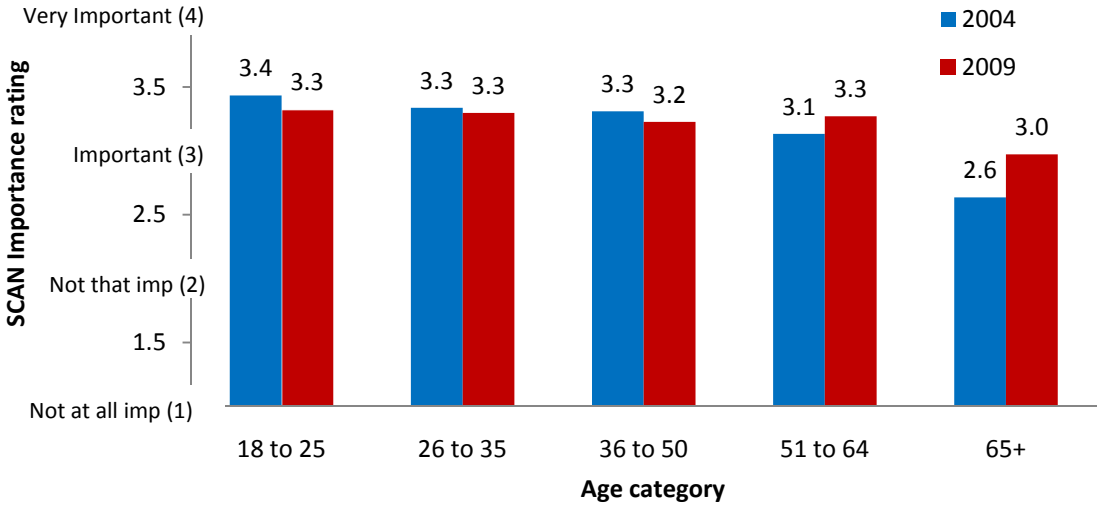


Source: 2009 City of Seattle IT Surveys
Based on all respondent

2004 survey respondents were also asked about their SCAN viewing in 2004. The percentage of SCAN viewers decreased from 49% in 2004 to 38% in 2009. However, residents still believe that it is important for residents and community organizations to have the opportunity to create and show their own local programs. Nearly half of the respondents in both years (47% in 2004 and 45% in 2009) said it is "very important," and more than one third in both years rated it as "(somewhat) important" (35% in 2004 and 37% in 2009).

The decrease in the percentage of people who have ever seen SCAN was similar across demographic groups. However, seniors gained relative to the other age groups in their rating of the importance of SCAN for the community. Figure 64 shows the pattern of change in this rating for the different age groups since 2004. Note that as age increases, the rating of importance decreases. In 2004, the decrease in the importance rating was sharpest with the seniors and in 2009, the decrease is significantly less steep.

Figure 64. Overall, residents believe that SCAN is important, decreasingly with age. Seniors in 2009 increased the importance rating.



Source: 2004, 2009 City of Seattle IT Surveys
Based on all respondents

Demographic groups differed somewhat on the importance ratings for SCAN, but overall, importance ratings were high. Observed differences include:

- On a four point scale, African American and Latino respondents rated the importance of SCAN more highly than did Asian Pacific Islander or Caucasian respondents (3.5 vs. 3.1)
- Respondents with the least education rated the importance of SCAN more highly (3.6 vs. 3.2)
- Importance rating declines slightly with income, from 3.4 in the lowest income group, to 3.1 in the highest income group.

Computer safety and security

Summary: Respondents are divided about the adequacy of precautions for children to access the web safely. About half do not believe they are adequate, and 16% don't know. Men are more confident than women in the precautions and younger respondents are more confident in them than older respondents.

Confidence in the privacy and security of online financial transactions has increased somewhat since 2000, but respondents are cautious with only 21% of respondents saying they are "very confident (5)" in the privacy and security of these transactions, up from 15% in 2004 and 12% in 2000. The average confidence rating in 2009 was just past the midpoint of the scale in the positive direction. However, concerns about Internet safety and security were voiced in nearly all of the focus groups, indicating it is a significant issue for at least some residents.

Correspondingly, demographic subgroups have different opinions about this issue. Groups with less confidence include African American and Latino respondents, people with disabilities, seniors, respondents with less education, those not employed at paying jobs, and those with less income. Along with Asian/Pacific Islander respondents, these are the same groups that are more interested in receiving information from the City about protecting themselves and their computer against unsolicited ads, viruses, and other computer threats.

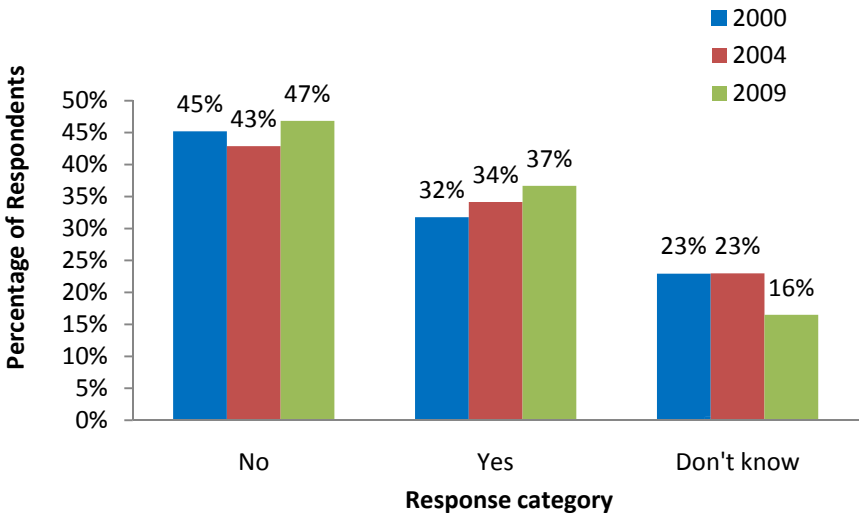
In 2000, women's confidence in this aspect of Internet use was lower than men's, but it has increased since then to nearly equivalent levels. However, women are more interested in getting information from the City on how to protect themselves and their computer against unsolicited ads, viruses, and other computer threats.

For the third year, respondents were asked whether they believe that there are adequate precautions for children to access the web safely and how confident they are that financial transactions on the internet are secure and private. Figure 65 shows that residents have become more certain of their opinions about safety precautions for children, but no closer to a consensus. The percentage of respondents saying they don't know has decreased while the percentage of respondents saying the precautions for children are adequate has increased, as has the percentage of respondents saying precautions are not adequate[18].

Demographic subgroups gave different responses to these items.

- **Gender:** Men were more likely than women to say that precautions are adequate so that children can access the web safely (47% vs. 40%);
- **Employed:** People working at a paying job were also more likely to say "yes" (46% vs. 39%)
- **Age:** Confidence in the adequacy of the precautions decreased with age. 60% of the under 25s said "yes," as did 47% of the 26 to 35s. This figure declined steadily to 34% of the seniors 65 and older.

Figure 65. Respondents are divided about the adequacy of precautions for children to access the web safely



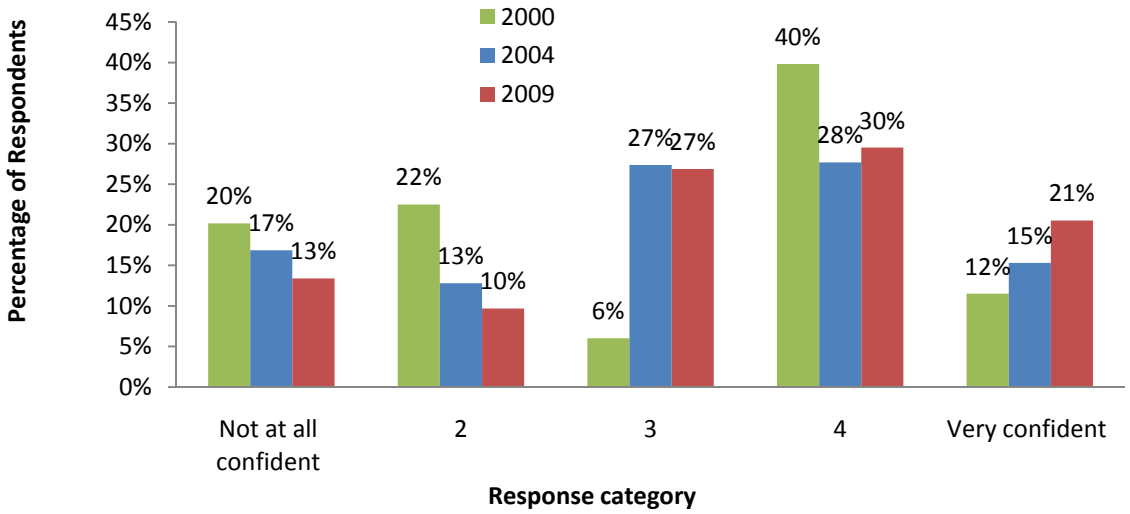
Source: 2000, 2004, 2009 City of Seattle IT Surveys
Based on all respondents

Online Financial Transactions

Respondents were asked to use a five point scale where 1 means "Not at all confident that financial transactions on the Internet are secure and private" and 5 means "Very confident" to rate their confidence in the privacy and security of online financial transactions. Confidence has increased since 2000 from an average rating of 3.0 in 2000 – in the middle of the scale, to 3.1 in 2004, and 3.3 in 2009. About half of the respondents in 2009 are more confident than the scale's midpoint, but only 21% are "very confident," up from 15% in 2004 and 12% in 2000.

[18] This change could be due to other response options provided this year. Participants were allowed to equivocate somewhat by saying "For the most part," which was re-coded as "Yes" and "Not enough," which was re-coded as "No." It is possible that respondents who wanted to give more equivocal responses in the past simply settled for "Don't know."

Figure 66. Respondents are moderately confident that financial transactions on the Internet are secure and private



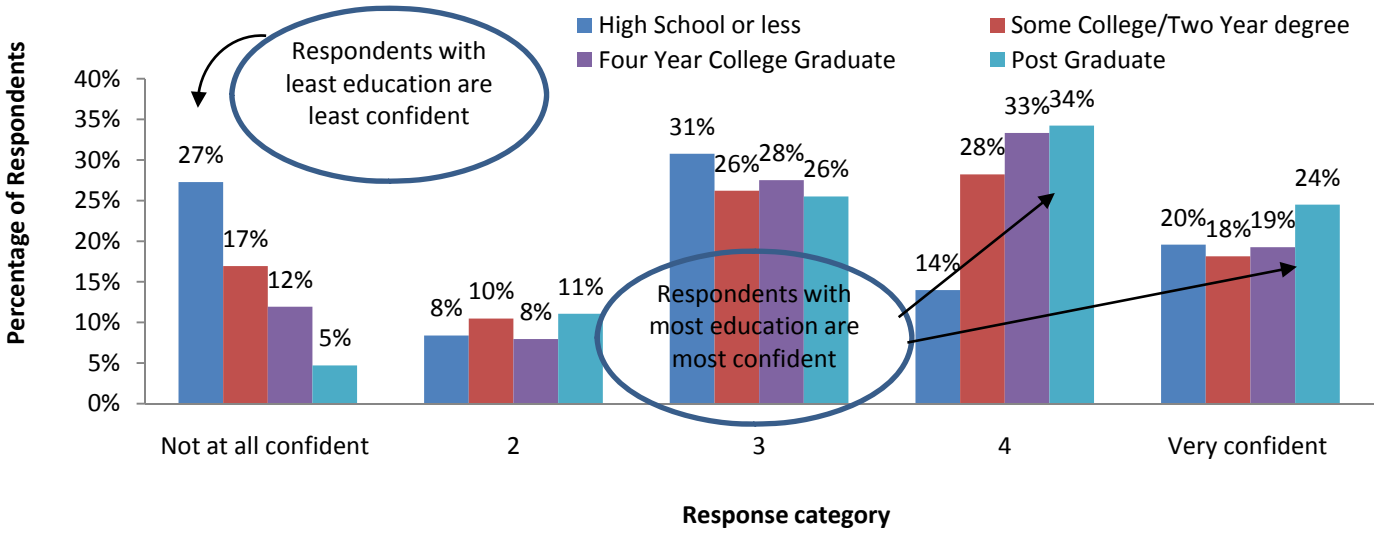
Source: 2000, 2004, 2009 City of Seattle IT Surveys
Based on all respondents

Many more subgroup differences emerged in response to the question about respondents' confidence in the security and privacy of financial transactions conducted on the Internet.

- **Ethnicity/Race:** African American and Latino respondents were less confident in the security and privacy of their online financial transactions. About half (49%) of African American respondents and 31% of Latino respondents rated their confidence as 1 or 2, compared with 20% of Asian/Pacific Islander or Caucasian respondents.
- **Disabilities:** People with a disability were less confident. 38% of respondents with disabilities are "not at all confident" that online financial transactions are secure and private, compared with 11% of respondents without disabilities. At the other end of the scale, 59% of the respondents without disabilities selected one of the two most positive codes, compared with 24% of the respondents with disabilities.
- **Age:** Except for the youngest group, confidence in the security and privacy of online financial transactions diminished with age. Eight percent of respondents between 26 and 50 were "not at all confident" that online financial transactions are secure and private, compared with 15% of the 51 to 64 year olds, and 31% of those 65 and older. At the other end of the scale, 68% of the 26 to 50 year olds either selected the option indicated the most confidence, or the next option, compared with 50% of the 51 to 64 year olds and 35% of seniors 65 and older.

- **Education:** Confidence increased with more education. Figure 67 illustrates the pattern of responses for the different education levels. Twenty-seven percent of those with a high school education or less indicated that they are "not at all confident" in the privacy and security of their online financial transactions, compared with 17% of those with some college, 12% of those with a four year college degree, and five percent of those with post graduate education.

Figure 67. Respondents' confidence in the privacy and security of online financial transactions is related to educational achievement

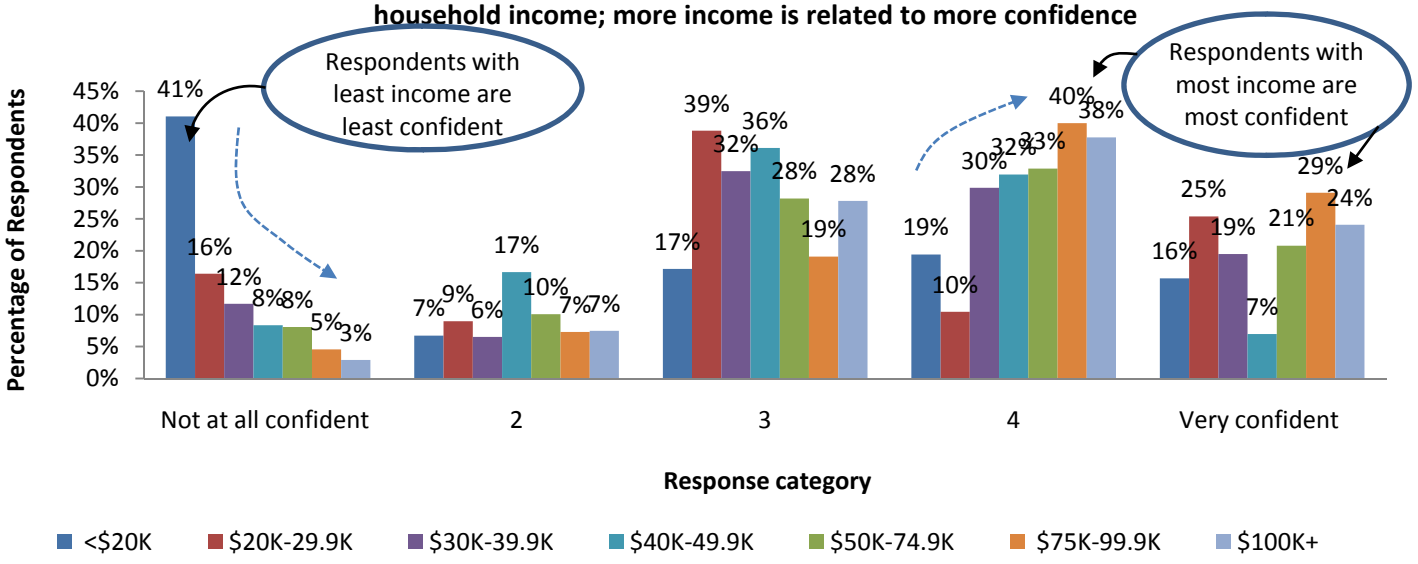


Source: 2009 City of Seattle IT Surveys
Based on all respondents

- **Employed:** Respondents employed at paying jobs were more confident in the security and privacy of their online financial transactions. About one-fourth (26%) of respondents who are not employed at paying jobs indicated that they are "not at all confident" in the privacy and security of online financial transactions, compared with 7% of their employed counterparts. At the other end of the scale, 55% of the employed respondents were "very confident" or next to "very confident" in their online financial transactions, compared with 40% of their counterparts without paying jobs.

- **Income:** Confidence increased with income. Figure 68 shows the pattern of confidence over income. [19] Overall, respondents seemed to treat this as a three-point scale: "not at all confident," "confident enough to follow through," and "reasonably confident."

Figure 68. Confidence in the privacy and security of online financial transactions is related to household income; more income is related to more confidence

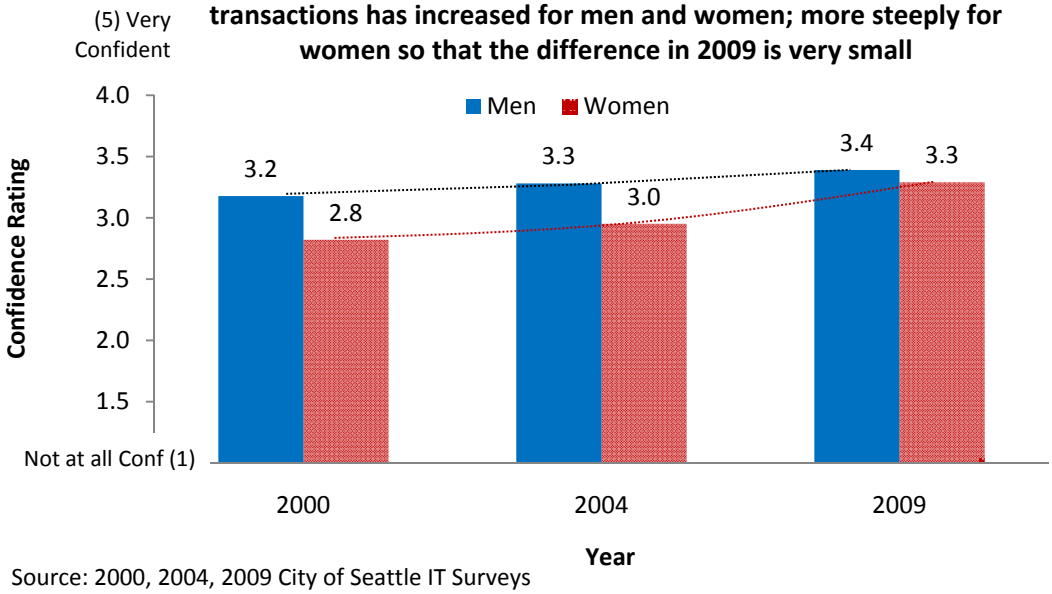


Source: 2009 City of Seattle IT Surveys
Based on all respondents

[19] It is interesting to note that the income patterns appear in some, but not all categories. The impact of income appears clearly in the category of least confidence and again in the "next to very confident" category, as if respondents who are confident are not quite confident enough to commit to the highest level of confidence. Similarly, at the negative end of the scale, it seems as if the concept of "not at all confident" is meaningful when it comes to financial security, but "somewhat unconfident" seemed not to resonate with respondents as an option. This may be a question that calls forth significant mistrust or cautious trust

Analysis showed only one difference in pattern of change in confidence since the 2000 survey. For most of the demographics, those groups that had less confidence in 2000 continue to have less confidence, even if confidence has increased for all groups overall. Figure 69 illustrates the exception. The confidence of women started below that of men in 2000, and remained lower than men's confidence in 2004. However, since 2004, women's confidence has increased more steeply so that by 2009, the confidence of men and women in the security and privacy of online financial transactions is nearly even. However, in 2009, women are more interested in getting information from the City about protecting themselves and their computers against unsolicited ads, viruses and other computer threats (34% vs. 23%).

Figure 69. Confidence in the security and privacy of online financial transactions has increased for men and women; more steeply for women so that the difference in 2009 is very small



Source: 2000, 2004, 2009 City of Seattle IT Surveys
Based on all respondents

Importance of Computer and Internet Access

Summary: Seattle residents value access to computers, high-speed access to the Internet, and the training to use them - not just for their own households, but for adults and Seattle households in general. About as many respondents in 2004 and 2009 think adults' access to computers and the Internet is important, but 2009 respondents think it is *more* important, with 78% giving it the highest importance rating in 2009, up from 64% in 2004. About the same percentage believe that Seattle residents need access to free or low cost training on how to use computers and the Internet. Nearly half say that it is "very important" for all Seattle households to have high-speed Internet access, and another 40% say it is "somewhat important." Those with high-speed access, and those with no access gave this item higher ratings.

Respondents were not as positive about the importance of computer and Internet access for children. Only about half of the respondents believe that children's access is very important, and these ratings have not changed since 2004.

The importance rating for adults' access increased more among the older respondents, perhaps because seniors are becoming more aware of the role of computers and the Internet or perhaps because "new" seniors who have been "aged in" to the senior category brought with them their firsthand understanding of the value of this access.

Younger respondents gave lower importance ratings to children's access, possibly because they may have been considering children young enough to be their children.

Latino respondents, with less access than other groups, gave lower importance ratings to adults' computer and Internet access, but with African American respondents were more likely to agree that free or low cost computer training should be available to Seattle residents, indicating some of the same groups identified in the focus groups as in need of affordable and accessible computer training. African American and Latino respondents also gave the highest importance ratings to high-speed access for Seattle households which, as a group, they were less likely to have. Caucasian respondents and those who speak English at home rated children's access as more important than others, suggesting a possible cultural divide in perceived importance with potential multigenerational consequences.

The importance ratings for children's and adults' computer and Internet access, and high-speed access for households increases with both income and education. The relationship with free or low cost training is not as clear, but may *decrease* with increased income or education. Other groups that rated computer and (high-speed) Internet access as important include employed respondents and current computer users.

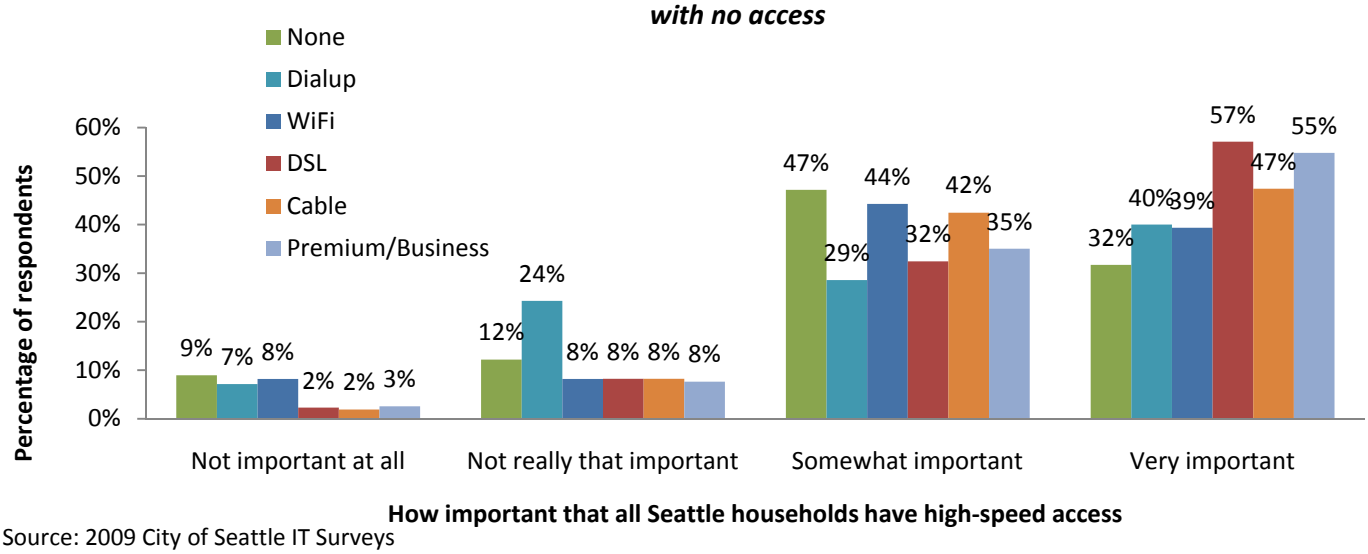
Non computer users are as likely as or more likely than computer users to agree that Seattle residents need access to free or low cost computer and Internet training.

Respondents were asked four questions relating to aspects of computer and Internet access: the importance of computer and Internet access for adults; the importance for children; the importance of high-speed Internet access for Seattle households; and the importance of low cost computer and Internet training available for all residents.

High-Speed Internet

Respondents were asked ""How important do you think it is for all Seattle households to have high speed Internet at least as fast as cable or DSL broadband?" Nearly half (47%) said that it is "very important," and another 39% said "somewhat important." Figure 70 shows that respondents who currently have high-speed access, or have had it in the past gave higher ratings to the importance of high-speed access for all Seattle households. Interestingly, those with no access also gave high importance ratings to this item, possibly raising the question of unmet need in this group.

Figure 70. Percentage agreeing that high-speed access is important for all Seattle households is higher among respondents with high-speed access *and among respondents with no access*



Source: 2009 City of Seattle IT Surveys
Based on all respondents

Training

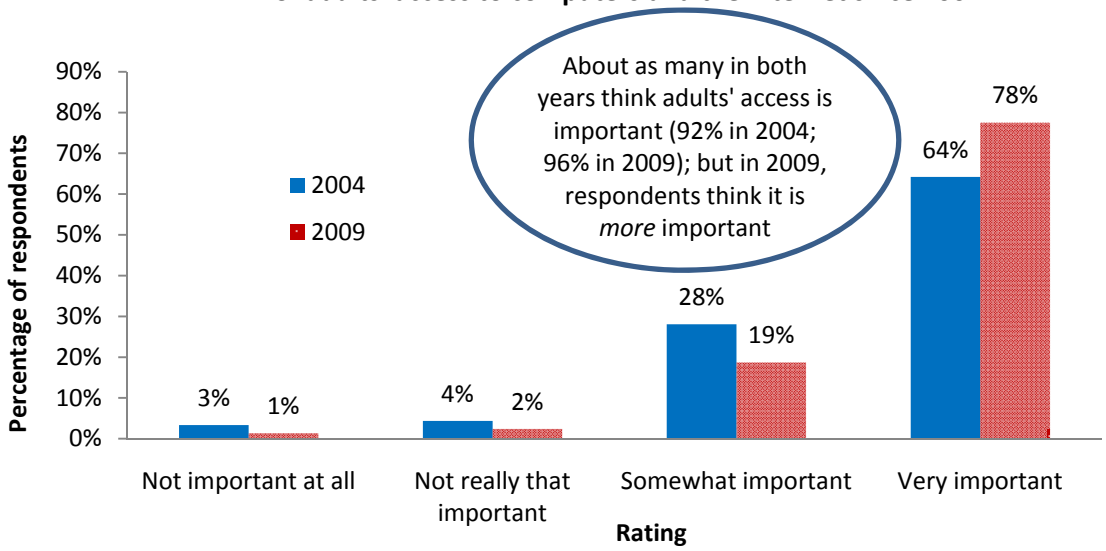
Three-fourths of the respondents believe that Seattle residents need access to free or low cost training on how to use computers or the Internet. The percentage of respondents agreeing with this statement was roughly similar across the different types of access. Slightly more (80%) of the premium/business class subscribers agreed, followed next by those in households without access (78%) or with dialup access (77%). DSL and cable subscribers dropped slightly more (76% and 75%, respectively). Those with WiFi were the least likely to agreed (62%).

Access for Adults and Children

Respondents were asked how important they think it is these days for adults to have access to computers and the Internet, and in a separate question, how important they think it is for children to have access. These questions were also asked in 2004. Overall, 78% of respondents

say it is "very important" for adults to have access to computers and the Internet, up significantly from 64% in 2004. Only 4% of the 2009 respondents said that adults' access to computers and the Internet is "not really that important" or "not at all important." This figure contrasts with 8% in 2004. These findings are illustrated in Figure 71.

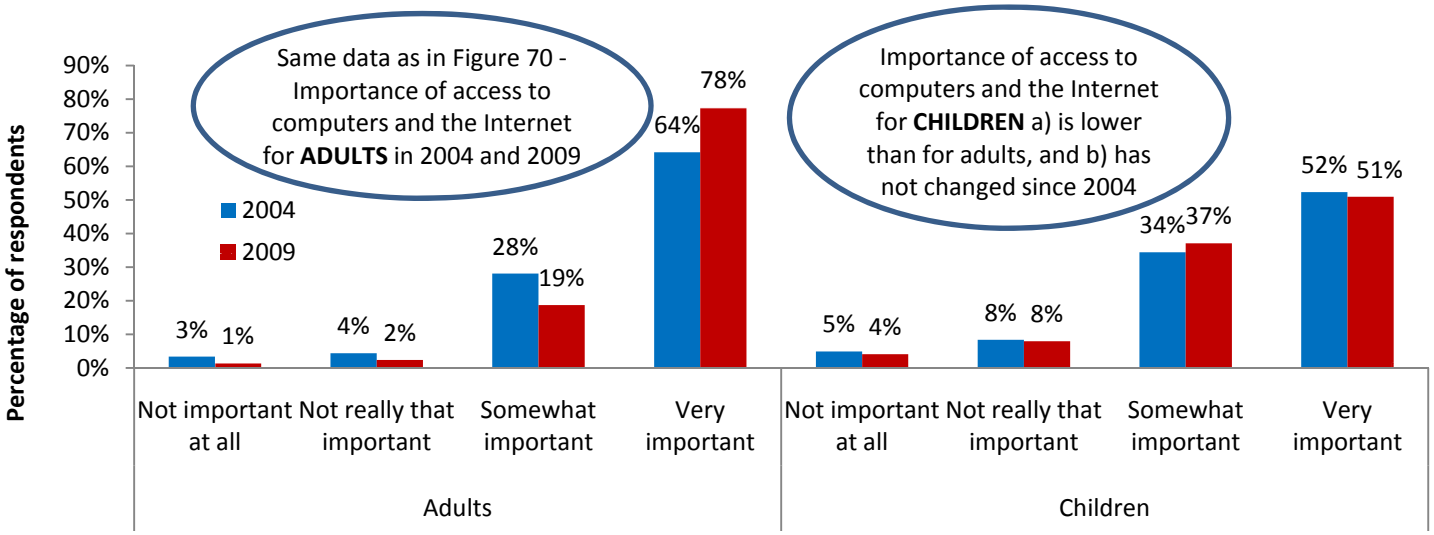
Figure 71. Residents have increased their assessment of the importance of adults' access to computers and the Internet since 2004.



Source: 2004, 2009 City of Seattle IT Surveys
Based on all respondents

Figure 72 repeats the importance ratings for adults' access, and contrasts it with the importance ratings for children. Note that while between about 64% and 78% of respondents perceive adults' access as "very important," only about half of the respondents give this rating to children's access. Further, the importance rating for adults increased between 2004 and 2009, while the importance rating for children remained the same, meaning that the gap in perceived importance between children's and adults' access grew between 2004 and 2009.

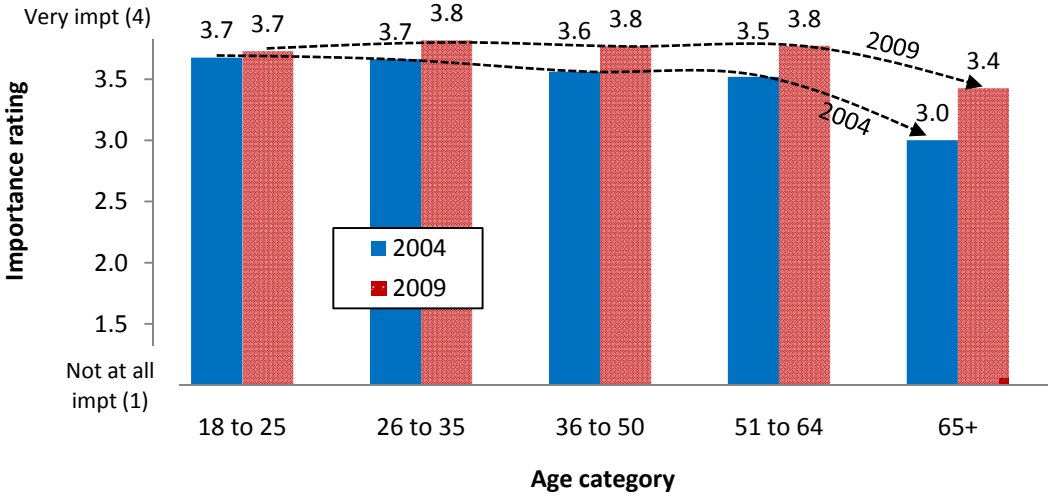
Figure 72. Respondents believe that access to computers and the Internet is important for children, but not as important as for adults - and that assessment has not changed since 2004



Source: 2004, 2009 City of Seattle IT Surveys
Based on all respondents

Analysis revealed that the importance ratings for adults' access increased similarly for most demographic groups. Figure 73 illustrates the exception – although the importance of adults' computer and Internet access received higher ratings in 2009 than in 2004 across all the age groups, the increase was greater in the older age groups so that the gap between the 2004 and 2009 ratings is larger for the older age groups than the younger age groups. Put another way, seniors may be joining their younger counterparts in their perception of the importance of computer and Internet access for adults. Alternatively, perhaps after five years, some of the younger counterparts have joined the senior group, bringing their experience with computers and their importance ratings of them with them into this older group. If this is the explanation for the

Figure 73. Perceived importance of computer and Internet access for adults stepped down with age in 2004; decrease was smaller and later in 2009

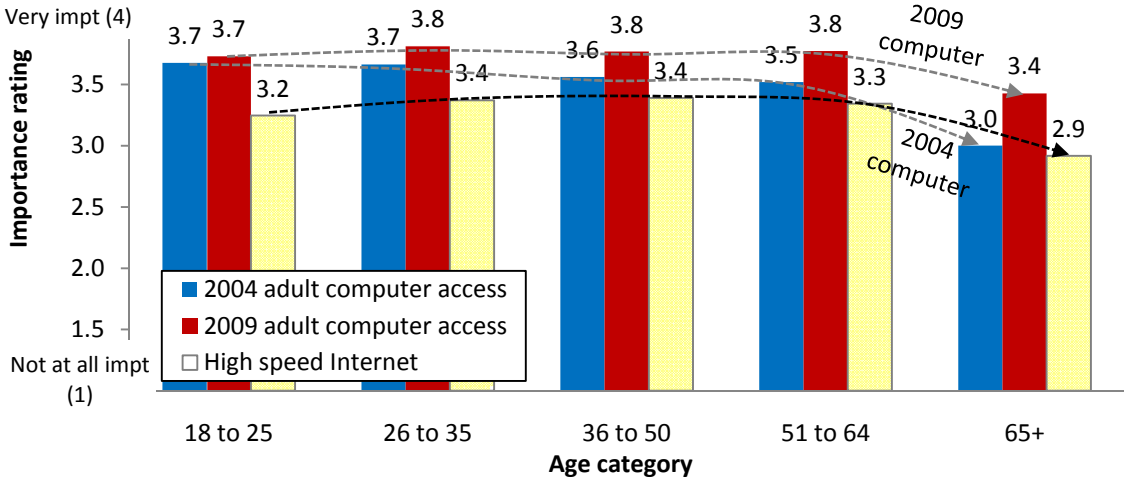


Source: 2004, 2009 City of Seattle IT Surveys
Based on all respondents

apparent movement in the most senior group, we would expect to see the same importance rating gap for technologies that might not have been as ubiquitous as computers five years ago, such as mobile devices or high speed Internet access. Figure 74 suggests that the "new seniors" bringing their familiarity with technology with them into their new demographic group probably does not account for the increase in importance ratings among this group.

Figure 74 repeats the data in Figure 73, adding the responses to the question "How important do you think it is for all Seattle households to have high speed Internet at least as fast as cable or DSL broadband?" This figure shows a high importance rating overall, though not as high as the rating of the importance of computer and Internet access in 2009 or 2004 and importantly, *the pattern of the importance rating of high speed access follows the same pattern in the older groups as the 2009 rating for computer and Internet access.* This suggests that seniors might be adopting the more technology-friendly perspective of their younger counterparts, and not just that new members of that age group remember the importance of technology they had used when younger.

Figure 74. In 2009, seniors' rating of importance of adults' computer and Internet access became more like younger groups'; seniors' 2009 rating of high speed access for all Seattle households follows suit

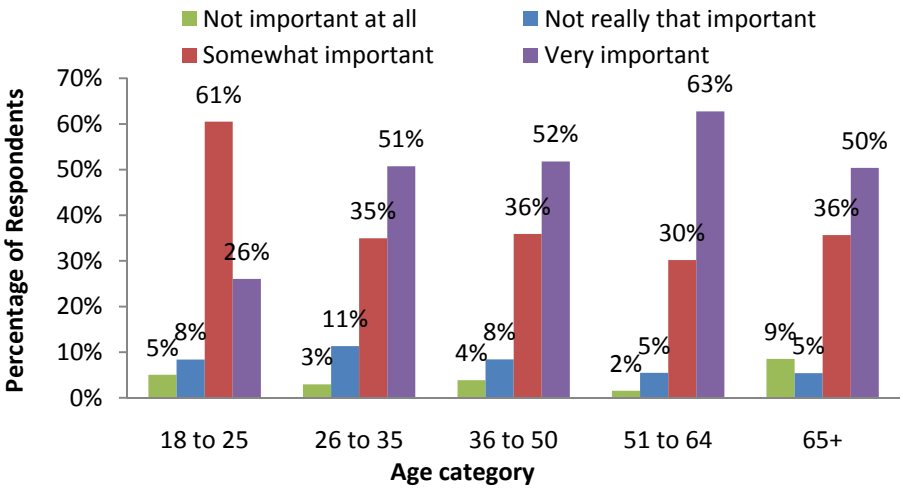


Source: 2004, 2009 City of Seattle IT Surveys
Based on all respondents

The perceived importance of access for adults increased similarly for most demographic groups between 2004 and 2009, although not all demographic groups gave the same importance ratings for different aspects of computer and Internet access. In 2009:

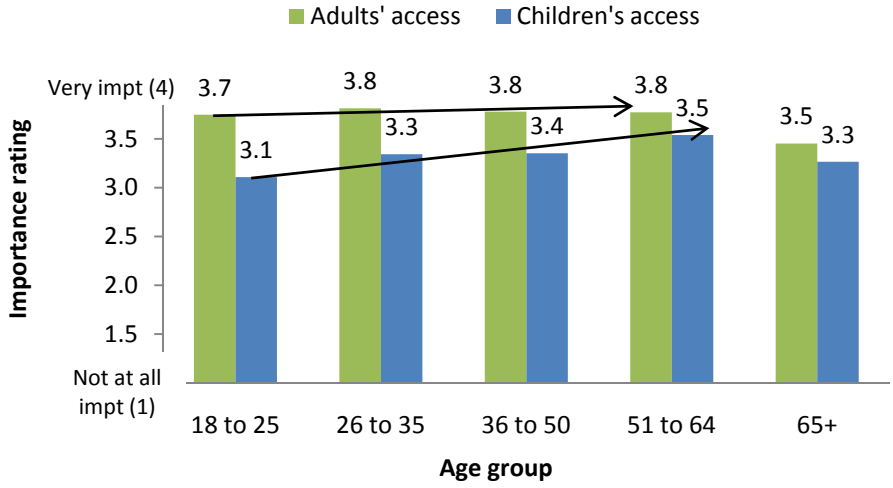
- **Age:** The earlier figures show that the perceived importance of **adult's access** to computers and the Internet is high in all age groups, even if it follows the pattern of some reduction in the youngest and oldest groups. Figure 75 shows that younger respondents, those most recently children themselves, gave a lower importance rating to **children's computer and Internet access**. This could reflect their perception of the importance of *younger* children's access (that is, children their own children's age), whereas older respondents may have been considering the importance of their teens' access. Supporting this interpretation, Figure 76 shows the increase in importance rating of children's access with respondents' age (and perhaps with their children's age), against the backdrop of steadily high perceived importance of adults' access. Alternatively, this younger group may be reflecting on the importance of their own access a few years earlier when they were children. Figure 77 shows that the three middle age groups tended to rate **high speed Internet access** for all Seattle households as "very important," while in the youngest and oldest age groups, the rating, while still positive, was

Figure 75. Younger respondents rate children's access as important, but less so than do older adults



Source: 2009 City of Seattle IT Surveys
Based on all respondents

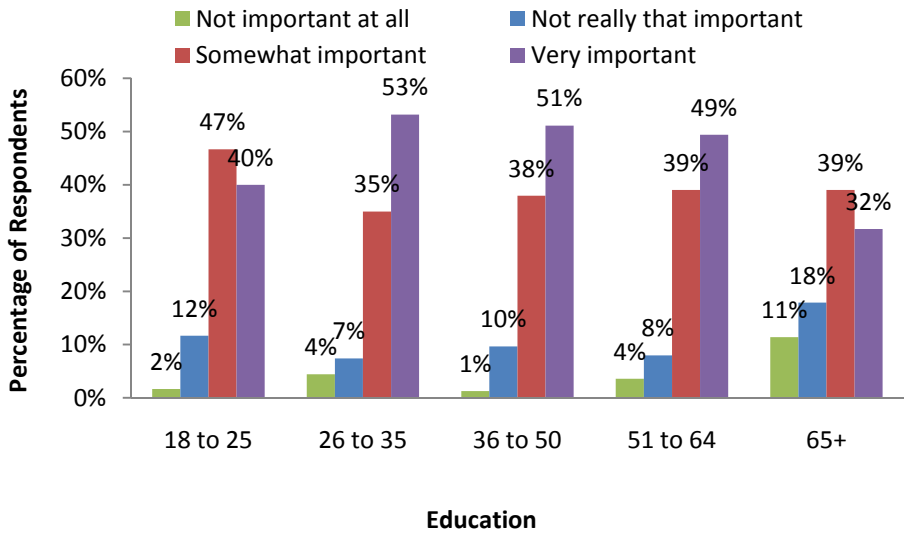
Figure 76. Perceived importance of children's access increases with respondents' age; perceived importance of adult's access consistently high until senior group



Source: 2009 City of Seattle IT Surveys
Based on all respondents

relatively muted with more "somewhat important" ratings than "very important." Younger respondents were more likely than older respondents to agree that Seattle residents need access to **free or low cost training** on how to use computers or the Internet.

Figure 77. High Speed Internet access is more often rated as "very " important by middle age groups; still "somewhat" to "very" important by youngest group

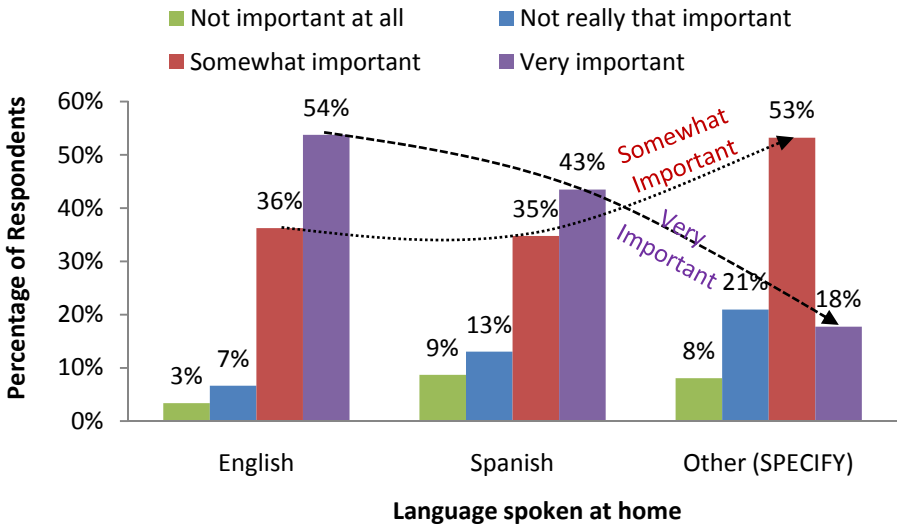


Source: 2009 City of Seattle IT Surveys
Based on all respondents

- **Ethnicity/Race:** Latino respondents gave relatively lower importance ratings compared with other respondents. 18% of the non Hispanics rated adults' access as "somewhat important" and more than three-fourths (78%) rated it as "very important," while 28% of the Latino respondent, more than half again as many as the other groups, selected the "somewhat important" rating, and only two-thirds (67%) selected "very important."

Caucasians and English speakers rate children's access as more important than others, suggesting a cultural divide in perceived importance. Figure 78 shows that more than half (54%) of those who speak English at home said children's access is "very important," compared with 44% of those in Spanish speaking households and *18% of households that speak another language*. This could result in a multigenerational continuation of a digital divide based on culture.

Figure 78. English-speaking households rate children's computer access as more important than do households that speak a different language



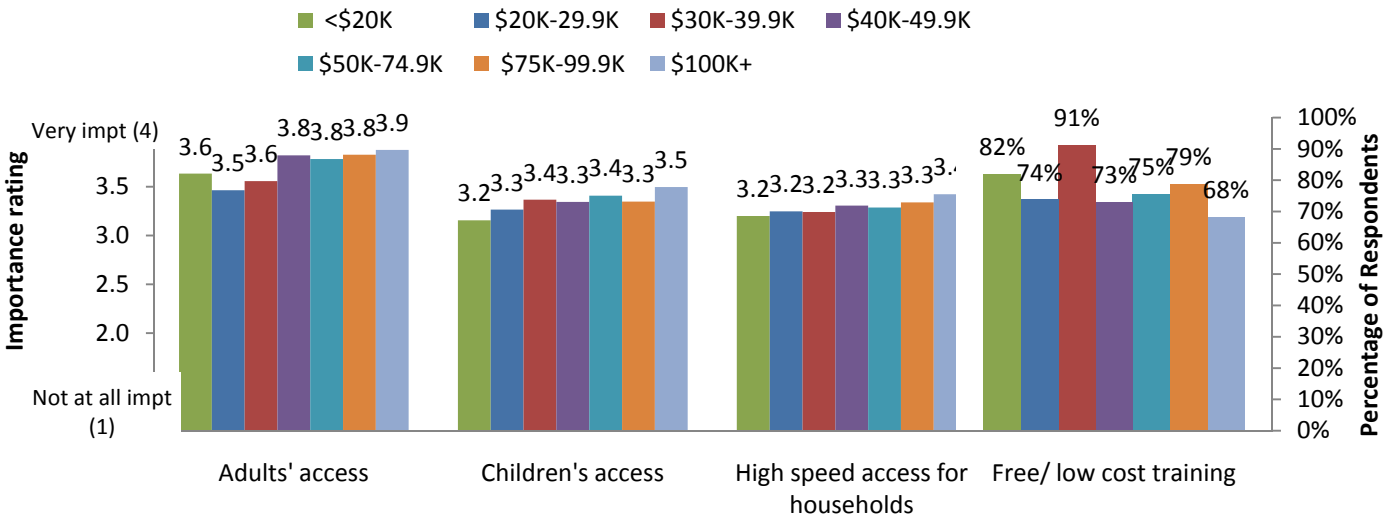
Source: 2009 City of Seattle IT Surveys
Based on all respondents

Although most positive about the importance of children's access, fewer Caucasian respondents (73%) agreed that Seattle residents need access to **free**

or low cost *training* on using computer or the Internet, as compared to African American respondents (89%) or Latino respondents (92%). These two groups also gave the highest importance ratings to **high speed access** for Seattle households, although those differences did not reach statistical significance.

- **Education:** The importance assigned to adults' or children's computer and Internet access increased with education so that 61% of the respondents with no more than a high school education rated **adults' access** as "very important," increasing to 88% among respondents with post graduate work. Other respondents' ratings fell between these extremes. The same pattern, though overall less positive, appeared in the rating of importance of children's access. 37% of respondents with no more than a high school education rated **children's access** as "very important," increasing to 59% of respondents with post graduate work. Though this trend did not reach statistical significance and the overall agreement remains high, it is interesting to note that the percentage of respondents who agree that Seattle residents need access to **free or low cost training** on computer or the Internet *decreased* with education from 81% among those with no more than a high school education to 71% of those with post graduate work.
- **Income:** Figure 79 shows the increase in the importance rating of access for children, adults, and for households as income increases. Responses to the question about free or low cost training on computer or the Internet did not have as clear a pattern. Overall, a decrease in agreement can be seen as income increases – from 82% agreement in the lowest income group to 68% in the highest, with most of the intermediate income groups falling between these extremes.

Figure 79. Rated importance of access and speed of access increases with income. Training ratings have a different pattern.

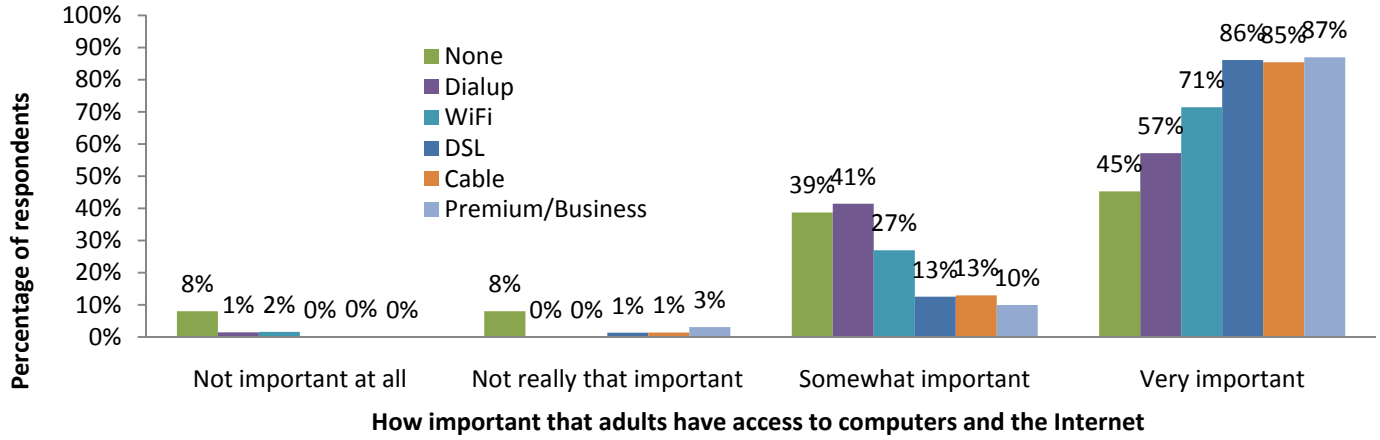


Source: 2009 City of Seattle IT Surveys
Based on all respondents

- **Employment:** respondents who are employed at paying jobs rated **children's and adult's computer and Internet access** as more important than those who are not employed. Only 13 (2%) of the respondents who work at a paying job rated adults' computer and Internet access as less than "somewhat important," compared with 25 people (8%) who are not employed; 80% of the employed respondents said it is "very important," compared with 73% of those who are not employed. Just over half (54%) of employed respondents rated children's access as "very important," compare with just under half (47%) of respondents who were not working at paying jobs. About half (51%) of employed respondents perceived **high speed Internet access** for all Seattle households as "very important," while 2% of this group rated it as "not at all important." Respondents who are not employed rated it as less important, with 39% rating it as "very important" and 7% "not at all important."
- **Computer users:** Computer users rated **children's, adults', and household high speed access** as more important than non computer users. 82% saying adults' access is "very important" (with 18% giving the next rating) compared with 41% of the non computer users (40% of whom gave the next rating) Importance rating for children's access followed a similar pattern. The importance ratings of children's access followed a similar, but less extreme pattern. 53% of computer users rated children's access as "very important," and 37% rated it as "somewhat important," compared with 36% and 41% of non computer users, respectively. Computer users rate the importance of high speed Internet access for all Seattle households as more important than do non computer users. This difference is more extreme between respondents who already have home Internet access and those who do not. Half of those with home Internet access say high speed access is "very important," compared with about one-third of those without it. Non computer users are slightly, but not significantly more likely to agree that Seattle residents need access to free or low cost **computer and Internet training** (78% vs. 75%).

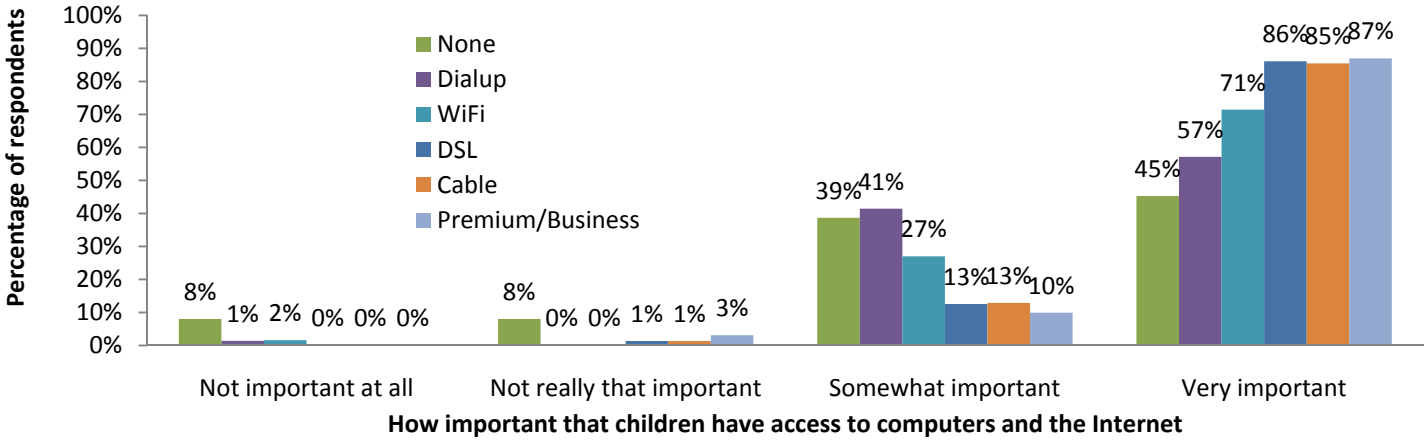
- **Children:** Those without children at home gave slightly reduced importance ratings to **adults' access** and rated the importance of **children's access** the same as those with children at home. Respondents living in households with children rated **high speed Internet access** for all households as more important than respondents in childless households (54% "very important" vs. 44%). Those with children at home were somewhat, but not significantly more likely to agree that Seattle residents need access to free or low cost computer and Internet **training** (78% vs. 74%).
- **Current or past speed of access:** Figure 80 and 81 show that as current or past speed of access increases, so does the strength of agreement that computer and Internet access is important for adults and children.

Figure 80. Percentage agreeing that adults' computer and Internet access is very important increases with speed of access



Source: 2009 City of Seattle IT Surveys
Based on all respondents

Figure 81. Percentage agreeing that children's computer and Internet access is very important increases with speed of access



Source: 2009 City of Seattle IT Surveys
Based on all respondents

Community Building and Civic Participation

Summary: Just over half of the respondents participate in a community group and not quite as many get information about their local community via a website or email list. In the open ended question asking what residents want to learn more about on the City's website or cable channel, more than 10% were interested in learning more about their neighborhood or community. People with this interest were not more likely to belong to a community group or email list, or visit a website to learn more about their local community. Information about the community groups, websites, or email lists these respondents had in mind could be an easy step toward community building.

Latino respondents are least likely to participate in some type of a community group or connect electronically with their community. African American respondents were more likely to participate in a community group, but not electronically. Caucasian respondents were most likely to participate both in person and electronically. Community involvement increases with age, but electronic community involvement is less likely among the youngest groups and oldest groups. Respondents with disabilities are less likely to connect to the community electronically. Participation in a community group, either in person or electronically, increases with education and with income.

More Seattle residents are using the Internet to access government information, from 54% in 2000, to 60% in 2004 and 74% in 2009. A significant ethnicity gap emerged with this question so that only one third of Latino respondents – and only 15% of those who speak Spanish at home – have used the Internet in the past year to access government websites. This finding dovetails with the comment of a focus group participant that one of the most debilitating aspects of insufficient English proficiency and lack of computer access is not knowing the status of immigration reform. Caucasian and Asian/Pacific Islander respondents prefer making contact with the government electronically, while African American and Latino respondents prefer telephone, written or in person contact.

Respondents with disabilities are also less likely to use electronic means to get government information or to prefer electronic means to make contact with the government. These disparities might reflect an under use of assistive technology to permit individuals with certain types of disabilities to access web pages, or it could reflect web pages that are inaccessible for people with certain types of disabilities, even if they are using assistive technology, or it could reflect a lack of training or awareness on the part of the individuals with disabilities.

A decreasing percentage of residents believe that email and the Internet are NOT effective ways to communicate their opinions about issues that affect them in their communities, down from a quarter in 2000 to one-fifth in 2004 and 13% in 2009. Looking at the average effectiveness rating, the greatest change was between 2004 and 2009. Residents are less confident that email and the Internet are effective ways to communicate with elected officials, although that rating too has increased steadily since 2000. In a different view, one focus group participant who had worked in

state government commented that email provides unprecedented access elected officials. Seniors are more likely to maintain that these tools are ineffective for both purposes. As education or income increases so does the preference to make contact with the government through electronic means. The use of the Internet to obtain government information also rises with education. This use of the Internet has increased for all education groups since 2004 except those with the least education, pointing to a persisting digital divide.

More than half (54%) of the respondents in 2009 reported that they participate in some type of community group, and of these, about two-thirds regularly visit a website or belong to an email list to get information about their local community. Of all respondents, about half (49%) indicated that they visit a website or belong to an email list to get information about their local community. So 13% visit websites or are on email lists, but don't consider themselves to be participating in some type of community group.

No significant relationship emerged between expressed interest in local community topics in response to the question "What would you like to know more about in your community that the City could share on its website or cable channel?" and participation in a local community group or an online information source about the community. This gap between interest and participation may point to an unmet need that the City could easily begin to fill by providing information about existing community groups and their online presence.

Analysis of the responses of different subgroups shows an unevenness in reported participation

- **Gender:** Women are somewhat more likely than men to say they participate in some type of community group (57% vs. 52%).
- **Ethnicity/ Race:** Only about a quarter of Latino respondents – and only 19% of those who speak Spanish at home – said they **participate in some type of community group** followed by 36% of Asian/ Pacific Islander respondents. Caucasian respondents were the most likely to participate in a community group (60%), about the same as African American respondents (56%). Latinos were also least likely to **regularly visit a website** or belong to an email list to get information about the local community (21% and only 18% of those who speak Spanish at home). African American respondents were also unlikely to participate in this way (34%) compared with Caucasian respondents (53%).
- **Age:** Younger respondents are less likely to **participate in a community group**. About a quarter of those younger than 25 said that they participate, increasing to 43% of the next age group, and 60% or more of those 36 or older. Responses to the question about **visiting websites or belonging to an email list** to get information about the local community took on the now familiar inverted U shape, with relatively low participation in the youngest and oldest groups (26% and 29%, respectively), and higher participation among the middle age groups (50% to 60%). Also following this pattern, fewer of the youngest (67%) or oldest (62%) said they had used the Internet in the past year to get government information, compared with between 85% and 92% of the respondents in the middle age groups. When these figures are recalculated to include all respondents, including non computer users, the

gap grows so that 44% of those in the oldest age group report they have obtained government information online, followed by 59% of the youngest respondents, and between 78% and 86% of the middle age groups.

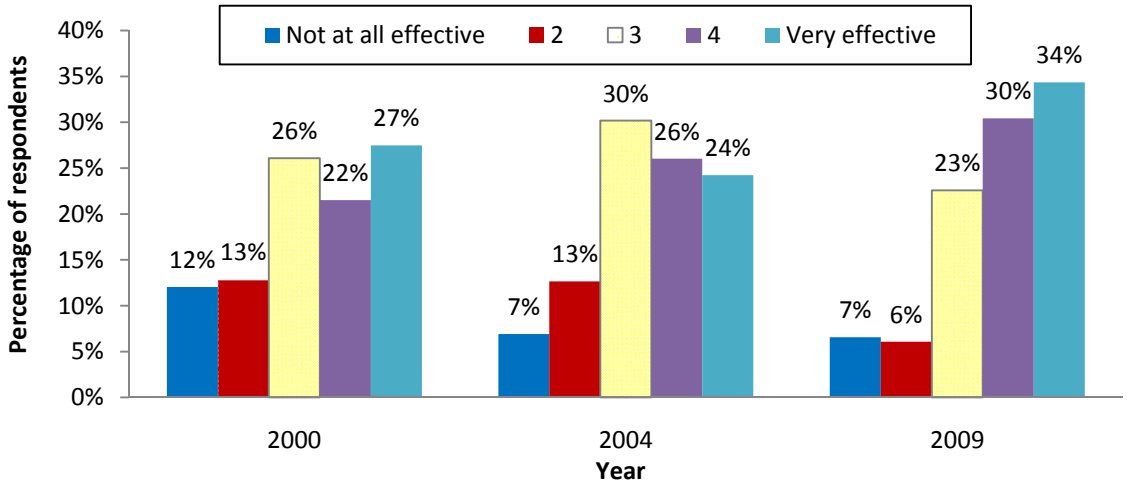
- **Disability:** Respondents with disabilities are less likely to **regularly visit a website** or belong to an email list to get information about the local community (31% vs. 50%),
- **Education**: **Participation in a community group** increases with education, from 35% of those with no more than a high school education to two-thirds of those with post graduate work. About half of those with some college up to a four year degree participate in a community group. Regularly **visiting a website or belonging to an email list** to get information about the local community also increases with education: 21% with no more than a high school education stay in touch this way, compared with 44% of those with some college or a two year degree and 57% of those with a four year degree or more.
- **Income:** Participation in a community group increases with income from one third of those in the lowest income group to two thirds of those in the highest income group. Similarly, those with lower income are least likely to regularly visit a website or belong to an email list to get information about the local community and those with more income are more likely (24% up to 61%).

Use of the Internet to Reach Government

Three questions about civic participation were asked in each of the three City of Seattle IT surveys since 2000. One asked about the respondents' use of the Internet to access government information and two asked about respondents' opinion of the effectiveness of email or the Internet to communicate their opinions on community issues, or as a way to communicate with elected officials.

An increasing percentage of computer users report having utilized the Internet in the past year to obtain information from a city, county, state, or federal government website. This percentage has increased steadily from 62% in 2000 to 71% in 2004 and 84% in 2009. Including non computer users, the percentage *of residents* accessing government information online has increased from 54% in 2000 to 60% in 2004, and 74% in 2009.

Figure 82. Since 2000, respondents agree increasingly that email and the Internet are effective ways to communicate their opinions about issues that affect them in their communities

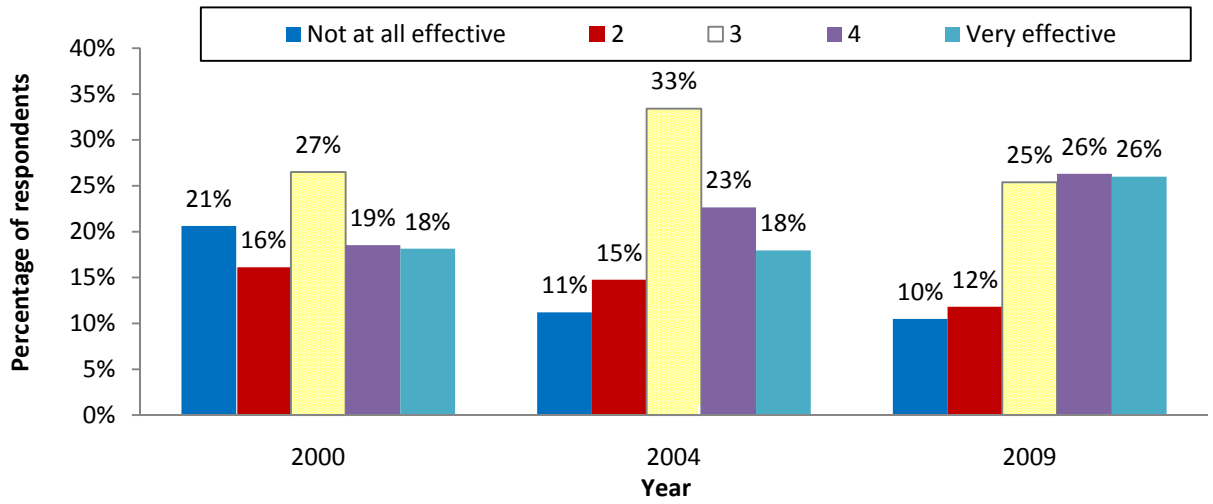


Source: 2000, 2004, 2009 City of Seattle IT Surveys
Based on all respondents

Figure 82 shows residents' evolving attitudes about the effectiveness of email and the Internet as ways to communicate their opinions. The percentage selecting option 5 ("very effective") on the five-point scale, has increased from about a quarter of respondents in 2000 and 2004, up to about one-third in 2009. The percentage selecting the next highest rating, option 4, has also increased since 2000, from 22% in the first year, to 26% in the 2004 and 30% in 2009. The percentage of respondents dismissing electronic means as ineffective (options 1 or 2) has decreased from a quarter of the participants in 2000 to one-fifth in 2004 and down again to 13% in 2009. Many factors probably join to explain the increase in the perceived effectiveness, including changes in the technology, changes in the public's regard for, and interest in, electronic postings, and increased awareness of residents of the power of the electronic forum, as well as other factors.

Compared with the effectiveness of electronic means to communicate opinions, residents are *less* confident that email and the Internet are effective ways to communicate with elected officials. Figure 83 shows a more positive assessment in 2009 than in previous years, but even in 2009, only about a quarter of respondents think it's a "very effective" way of communicating with elected officials, up from 18% in previous surveys. Another quarter assigned the next most positive rating for just over half rating email and the Internet as at least somewhat effective as ways of communicating with elected officials. Figure 83 suggests that some of the uncertainty represented in the relatively high midpoint bar in 2004 has resolved into more confidence in 2009 with a reduced midpoint bar and higher positive bars.

Figure 83. Since 2000, respondents agree slightly more each survey year that email and the Internet are effective ways to communicate with elected officials



Source: 2000, 2004, 2009 City of Seattle IT Surveys
Based on all respondents

Responses to these two questions changed differently over time. Overall, respondents expressed about the same level of confidence in 2000 and 2004 in the first question - the effectiveness of the Internet and email as ways to communicate their opinions. The average effectiveness rating in the first two years was 3.5 on a five-point scale, with a steep increase to 3.8 in 2009. The average rating of the second question – the effectiveness of email and the Internet as ways to communicate with elected officials, while well below the average effectiveness ratings of those tools for communicating opinions, has increased each year, from 3.0 in 2000, to 3.2 in 2004, and 3.5 in 2009.

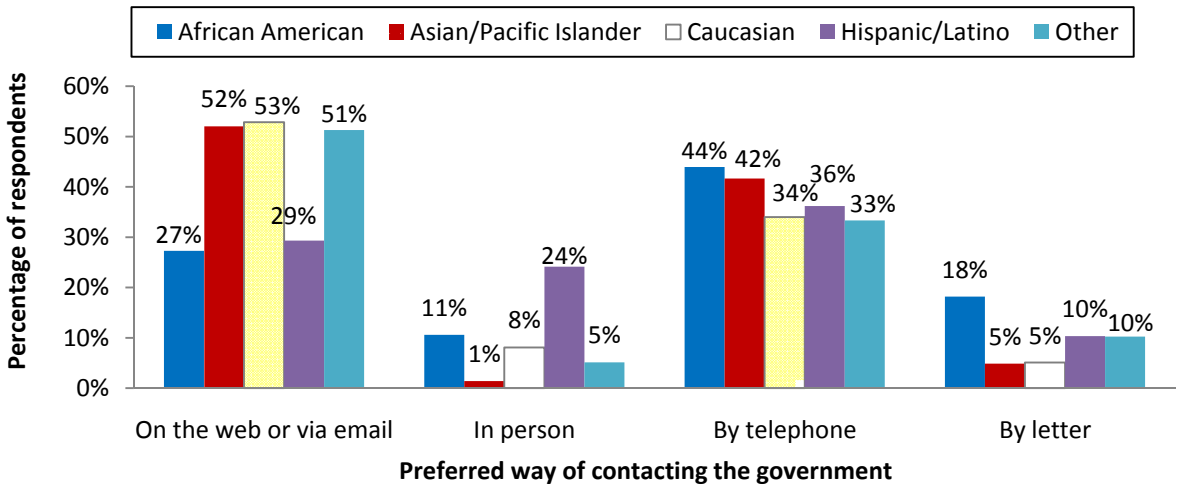
Analysis of the responses of different subgroups shows different responses to these questions.

- **Gender:** The women rated email and the Internet as more effective ways to communicate with elected officials than did the men (33% of women rated it as "very effective" compared with 19% of the men). Women also find the Internet and email to be more effective ways to

communicate their opinions on community issues (38% of women rated it as "very effective" compared with 30% of men).

- **Ethnicity/ Race: Asian/Pacific Is**lander respondents and Latino computer users were the least likely to have used the Internet to **access government websites** in the past year (68% and 70%, respectively – down to 51% of those who speak Spanish at home) compared with Caucasian computer users (89%). When non computer users are included in this computation, the gap widens dramatically so that *one third of Latino residents – and only 15% of those who speak Spanish at home – have used the Internet in the past year to access government websites, compared with between 64% and 80% of other ethnic groups, and 59% of those who speak a language other than Spanish or English at home.*

Figure 84. Most residents prefer to contact the government online or by telephone; the patterns are different for African American and Latino residents

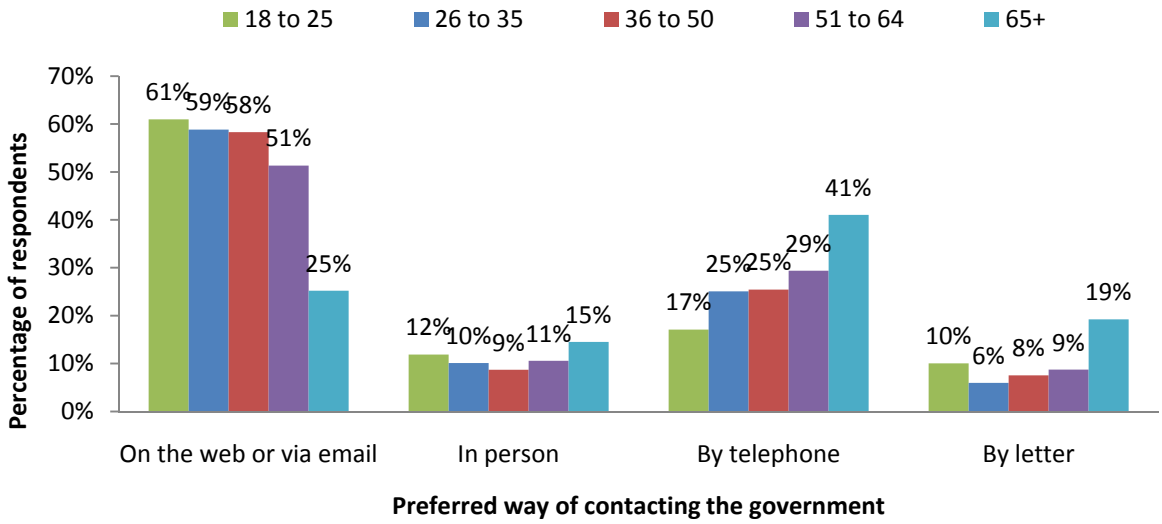


Source: 2009 City of Seattle IT Surveys
Based on all respondents

Figure 84 illustrates a similar result. Respondents were asked how they prefer to make contact with the government when they need something. Most commonly, respondents indicated using the Internet or email, or using the telephone to make contact. Latino and African American respondents are only about half as likely as other groups to prefer the Internet or email, opting instead for visiting in person or writing a letter. Among residents who speak Spanish at home, only 18% prefer to use the Internet or email and 33% prefer to visit the government office in person. Those who speak a language at home other than Spanish or English are also less likely to prefer to use the web to make contact with the government (38%).

- **Age:** Seniors are most likely to say that the Internet or email is "not at all effective" as a way to **communicate their opinion**s about community issues (16% vs. 4% to 7% of the other age groups), and the youngest age group is least likely to say it is a "very effective" way to communicate opinions (30% vs. 33% to 37% of the other age groups). Seniors are also most likely to say that the Internet or email is "not at all effective" as a way to communicate with elected officials (23% vs. 6% to 14% of other age groups).

Figure 85. Preferred ways of making contact with the government is related to age - most groups prefer the web or email, but decreasingly with age. Others prefer the telephone, increasingly with age



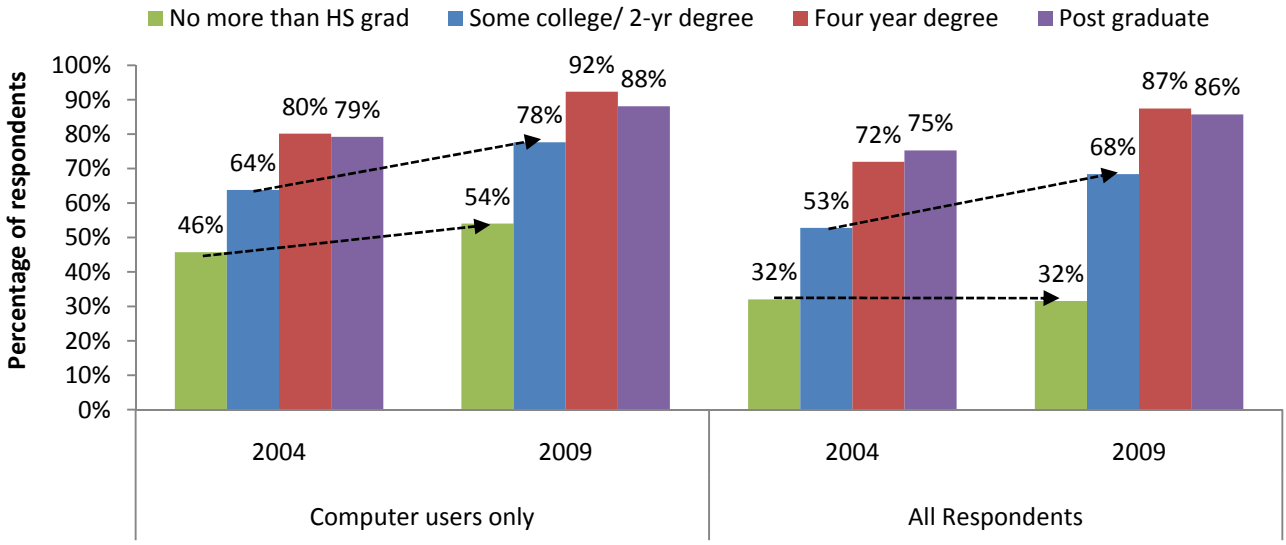
Source: 2009 City of Seattle IT Surveys
Based on all respondents

Figure 85 shows that seniors are much less likely to prefer making contact with the government via email or the web, and more likely to prefer the telephone and take the lead in letter-writing.

- **Disability:** Respondents with disabilities are less likely to **use the Internet to obtain government information** (computer users: 76% vs. 84%; all respondents: 56% vs. 76%). Correspondingly, respondents with disabilities are less likely to say they prefer email or the web to **make contact with the government** (31% vs. 51%), about as likely to prefer the telephone (38%), and are more likely to visit in person (15% vs. 8%) or write a letter (17% vs. 5%). These disparities might reflect an under use of assistive technology to permit individuals with certain types of disabilities to access web pages, or it could reflect web pages that are inaccessible for people with certain types of disabilities, even if they are using assistive technology, or it could reflect a lack of training or awareness on the part of the individuals with disabilities.
- **Education**: Figure 86 shows that **use of the Internet to obtain information from a government website** increases with education, leveling off after a four year college degree. The set of bars on the left represents computer users only. The set of bars on the right

represents all respondents, including non computer users. In both sets of figures, the use of the Internet to obtain government information is sensitive to the education level of the searcher. However, the second set of bars shows no increase in the use of the Internet to access government information among the group with the least education, even while the use of the Internet in this way increases for the other education groups. This points to a persisting divide relating to access.

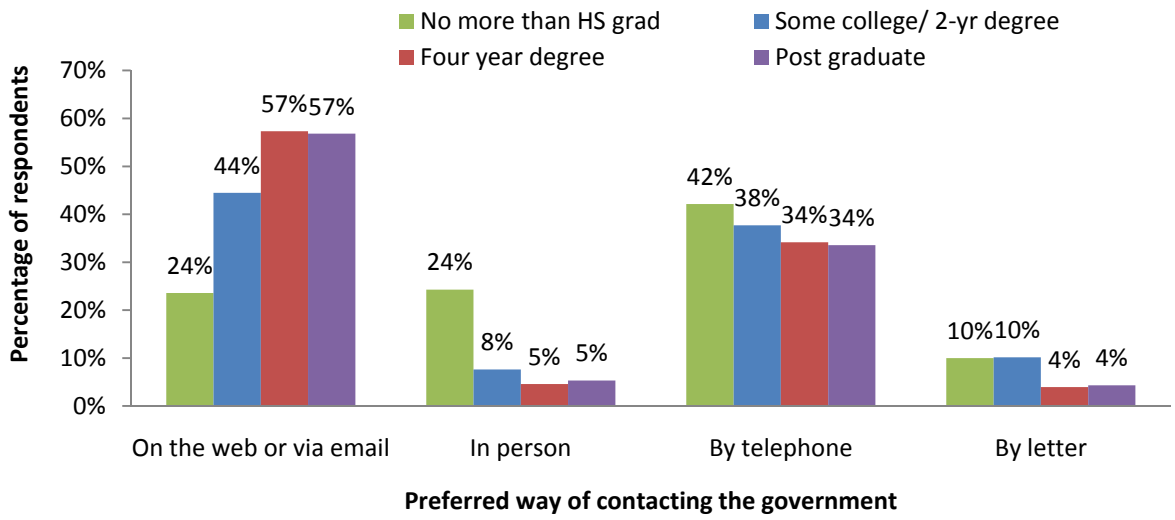
Figure 86. Using the Internet to obtain information from a government website: more likely with more education; biggest increase in 2009 among those with some college; little increase among computer users with no more than a high school education



Source: 2004, 2009 City of Seattle IT Surveys
Based on computer users only (first set) or all respondents (second set)

Figure 87 shows that as education increases, so does preference to use the web or email to **make contact with the government**. Only about a quarter of those with the least education prefer to use the Internet, with as many preferring to make contact with the government in person and even more preferring to use the telephone.

Figure 87. Preferred ways of making contact with the government is related to education - most groups prefer the web or email, depending on education. Those with less education prefer the telephone.

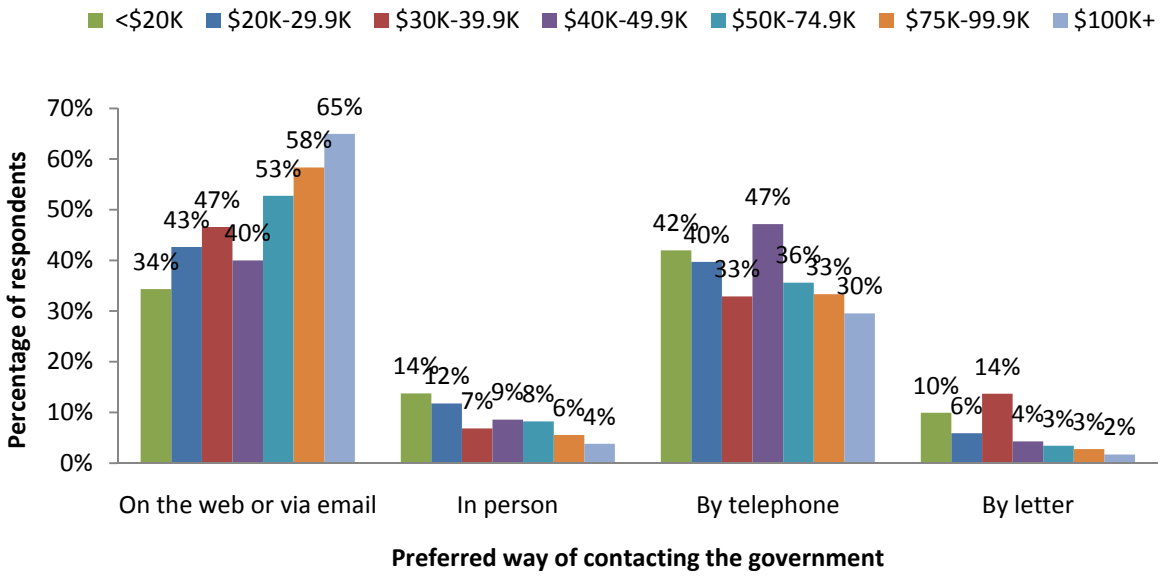


Source: 2009 City of Seattle IT Surveys
Based on all respondents

- **Income:** Use of the Internet in the past year to obtain information from a government website also increases with income from a low of 70% to 92% of the highest income group. When non computer users are included in this computation, these figures shift to a low of 51% of the two lowest income groups to about 90% of the three highest income groups.

Figure 88 shows a steep increase in preference for making contact with the government via the web or email as income increases, from a low of 34% of those in the lowest income group to 65% of those in the highest income group. Preference for using the telephone decreases fairly steadily as income increases from 42% of the lowest income group to 30% of the highest income group.

Figure 88. Preferred ways of making contact with the government is related to income - most groups prefer the web or email, and that preference increases with income. Other ways of making contact decrease with income.



Source: 2009 City of Seattle IT Surveys
Based on all respondents

Employed: People who work at a paying job are more likely to say they **regularly visit a website** or belong to an email list to get information about the local community (56% vs. 33%), they are more likely to have **obtained government information** via the Internet (88% vs. 72%), figures that diminish to 82% vs. 56% if all respondents are considered instead of only computer users. That is, the large majority of employed individual have obtained government information via the Internet, compared with just over half of people who do not work at paying jobs. Accordingly, employed people are more likely to say they **prefer to make contact with the government** via email or the Internet (54% vs. 40%), and are less likely to say they prefer to use a letter (4% vs. 11%).

Detailed Findings from Focus Groups

Filipino immigrants focus group

Summary: The Filipino community focus group participants were older and few expressed much familiarity or comfort with computers, although survey results showed that almost half have a home computer, use the Internet and email, though not many use attachments. One woman remarked that once her son left home, she was able to put the computer away. In general, participants did not initially express a great deal of interest in getting online, but they were able to identify a number of benefits to being online so that by the end of the group, they were calling for several computers located throughout the city in settings where they are comfortable, such as the IDIC, with some form of user-friendly instruction so they could learn how to use it. Participants also noted the importance of having a computer at home so they could go practice what they learned. Participants remarked that although they could access computers at the public library, they would not know what to do once they sat down, and the language barrier makes it difficult to ask for help. In addition to specific uses for a computer, participants remarked that even though they are old, they want to learn.

About half want to make contact with the government by telephone or with a letter. Some selected online or web contact. Most people want to participate by giving their opinions to the City on things they care about, with most noting a preference for using the telephone, calling into a meeting, or attending a community meeting.

Participants want to know more about what's happening around the city, including community, cultural, and heroic events. They are interested in crime and safety in their neighborhood, and they want to know about alerts. They also expressed interest in finding out about benefits they might be eligible for.

Few participants want to get information from the City via email, because of lack of access. These participants look primarily to TV news, and less often to the postal mail or newspaper.

A focus group with members of Seattle's Filipino community was conducted on April 3, 2009 with the International Drop-In Center (IDIC) located on Beacon Hill. Twenty-eight individuals signed up to participate in the focus group, and 65 individuals attended and participated to varying degrees. Forty-five participants completed a brief written survey. Few participants were able to participate in the planned focus group activities, a dynamic method that relied on mutual interviewing among the community members. Instead, an impromptu traditional focus group was conducted with 15 remaining participants. Many, but not all, of the participants were seniors. Two thirds (68%) were 65 or older, and 27% were between 51 and 64. Half have at least a four-year college degree, and three-fourths (76%) have at least some college or a two-year degree. Nearly half report an annual household income of less than $20,000, and 83% report less than $40,000 per year.

Technology Access and Use

Survey results show that of the 39 participants who indicated having any home electronics, nearly two-thirds (64%) have a cell phone and slightly more (69%) subscribe to cable. Not quite half (44%) have a computer at home and about a quarter (23%) have home Internet access. Only one person reported having a mobile device.

Using a show of hands at the beginning of the focus group, only about one quarter indicated that they use computers. Most people reported that they do not use computers either because they do not know how or because they do not have access. Two indicated, rather adamantly, that they are not interested in computers. Several of those with computers indicated that they are out of date.

When asked if they feel left behind as the world becomes more digital, most agree that they do and they indicated that they would be interested in attending a class, with one person adding, "It's a chance to learn."

Survey: More than half (55%) of the 31 who answered the questions said they use computers and almost many (48%) said they use email, but only about half of those use attachments (19%) or check their email daily. Not quite half (45%) said they use the Internet. Four in ten (40%) of those who indicated how they use computers or the Internet said they don't use it. Most (59%) said they are not very or not at all skilled on the computer).

Survey: The most common use of computers in this group was searching the Internet (50%) or finding information about local businesses (20%) or about health issues (20%). Ten percent noted using computers for shopping online or getting information about the community.

Survey: Almost half (46%) of the 28 participants who responded to this question noted that they use a computer at home, and one-fourth use a computer at the library. Nearly as many (21%) use a friend's or relative's computer. *In mutual conversations*, participants indicated that publicly available computers should not be placed *only* at the library, that there should be more computers at various places around the city for residents' use, and that everyone should have the opportunity to learn how to use it.

Survey: Nearly three-fourths (71%) of the 21 survey respondent indicating how Internet comes to their home indicated high speed access. People are most often satisfied with the reliability of their access (93%), and customer service (80%), and less satisfied with the cost (58%) or speed of access (75%). When asked what one thing would most improve their Internet service, the most common response was "nothing" (44%), followed by "price" (30%). 44% of the respondents said they would not be willing to pay anything for fast or faster Internet access and as many indicated amounts up to $20 per month.

Increasing Access

Mutual Interviewing/Focus Group: When asked what they would like to use a computer for, participants had many ideas, including: getting information, email, shopping, news, emergencies, job search, doing business (or taking care of the things I need to do), paying bills, staying in touch with the community, and the casino (although one person did not want access because of his gambling problem). In conversations with one another, one person remarked, "If they'll learn how to use computers or the Internet, it will help them to have every communication, but they do not have enough funds to purchase a computer and study at their own expense." Another noted, "They want to learn."

Mutual Interviewing/Focus Group: Participants indicated a number of factors that would help them use computer and the Internet. Many mentioned having computer access, especially access at home so that they can take the class and then go home and practice. Other suggested putting between three and five computers at the IDIC that they could use. They asked for a beginner's class and if possible, personal instruction – at least user-friendly instruction. Some agreed that online instruction would be acceptable if it is user-friendly. Several participants asked for a resource person – someone who is available on certain days to help answer questions. One person commented, and many agreed, that the cost of access needs to be minimal to be feasible for them. One person said, "We are seniors and we can't attend any computer class. We need a driver." Several commented that seniors might not have a need to use computers or an interest in computers because of their age.

Focus Group: With the understanding that many participants do not have home computer or Internet access, we asked about using publically available computers. Participants agreed that the library is too far away for them and too hard to get to, adding that the computers are too busy there because there are not enough of them. A greater problem, however, seemed to be that these individuals do not know what to do with a computer – one person mentioned that given his current level of knowledge, all he can do is go and sit at the computer and look at it. Another added that people who come to the IDIC are not comfortable going to the library and asking for help if English is not their first language – this person remarked that they stay away and won't go in.

Focus Group: One person – one of those who indicated an adamant lack of interest – commented, "We need it for educational purposes. Even though we are seniors, if we can just learn how to turn it on, it'll give us a big boost to learn, even if we are older! Just the benefits of being able to turn it on – then we can learn how to use it, with an instructor on certain days.[20]" Participants broke into applause in response to this statement. With the idea that the City might look for ways to make computers accessible to this group, a participant shouted, "Make it quick! We're getting older!"

[20] Paraphrase

Communicating with the Government

Survey: Nearly half (45%) of the survey respondents prefer to make contact with the government by telephone and nearly as many (42%) prefer to write a letter. Just over a quarter (27%) prefers to make contact on the web or via email and the same percentage prefers to make contact in person. Correspondingly, when asked how they prefer to give their opinions to the City on things they care about, respondents most often (48%) selected the telephone/calling into a meeting, or attending a community meeting (26%). Only one person checked "none."

Survey: Although only 19% of the survey respondents had visited Seattle.gov and most did not know much about the City's website, several people noted in *mutual interviewing* what they would like to find on it, including:

- Special announcements updated daily, including happenings around the city
- Committee meetings updated daily
- Alerts
- Community events, including cultural presentations
- Heroic events
- Crimes and safety in my neighborhood
- Benefits available to seniors from any level of government
- How to find jobs, and government assistance to people without jobs

Survey responses indicated that two-thirds of the respondents prefer to get information *from* the City via the TV news. Not as many selected notices in the mail (39%), the newspaper (31%), or the radio or Seattle Channel (both 22%) (44% have seen the Seattle Channel on cable). Only 8% selected email notification and none selected getting text messages on the cell phone.

In mutual interviewing, many focus group participants noted that they liked the idea of receiving information from the City via email, though a few were opposed because not everyone has email access. When asked what might help people become more comfortable receiving information from the city in this way, participants suggested "little events" that teach people that don't know how to use a computer, or teaching "little by little every day," emphasizing the importance of offering beginner level classes widely dispersed around the city.

Latino immigrants focus groups

Summary: The two Latino focus groups, both with residents with limited English skills, were very different. One group had little education and few activities outside the home. This group had few computer skills and very little access to computers. However, they did have cell phones. The other group contained many people who work or attend school. These participants had better access to technology and more technology skills. Both wanted opportunities to improve their circumstances. Overall, low English proficiency combined with limited education is a powerful barrier to functioning easily in Seattle culture or online where so much local content is in English. Participants expressed an interest in learning English. If the immigrants are undocumented, they believe that they would not have access to community college classes where they could improve their English skills and learn how to use technology.

Latino participants want better technology access and called for more access to more Spanish computers at more places where they are comfortable (such as the Family Center) for more hours. Without computer skills or English proficiency, they feel they are being left behind. Many who want access were unaware of technology centers and wanted to know how to find them; others who were aware of technology centers felt that it is takes too long to get to a computer there, calling for rules similar to those used at the public library, which participants said were too restrictive for people looking for work. Participants also asked for free or low cost bilingual training in computer and Internet basics and a way to practice what they have learned. Additionally, they need some insight into how computers might be helpful for them, with expressed interest in job announcements, job training information, and support in starting or promoting a small business; information about their children's homework and school; and information about immigration reform and access to benefits. Further, they need access to Spanish content.

Some participants voiced concerns about too much computer access so that computers may create isolation and threaten family welfare by distracting family members from the family; others were concerned that without home computer access, children might have a more difficult time succeeding in school and it's more difficult for parents to monitor their children's school progress. At the same time, participants were concerned that with their low level of English proficiency, they would be unable to monitor their children's computer access successfully, and therefore be unable to protect their children from the well-publicized dangers of the Internet. Participants are also concerned about the viruses and hackers that threaten the safety of their computers and their personal information.

Participants prefer to make contact with the government via electronic means, if they have access to it. If not, they prefer telephone or writing a letter. On the City's website, they would like to see information about ESL classes, computer classes, employment opportunities, support groups or activities for parents and teens, health information and alerts, support for

opening a small business in Seattle, and community events and information, as well as local news, immigration news, traffic, and weather.

In addition to the City's website, participants also indicated that the TV news and the radio are both good ways to get information from the City.

Comments from participants and note-takers suggest that a mentoring program might work for this community where community members become teachers as they gain access and learn to use computers. This could also help fill a gap in the community suggested by the survey and by note-takers that Latinos do not belong to in person or electronic community groups, largely because of language and technology barriers, but want community involvement.

Two focus groups were conducted with **Latino residents**. One was on April 4, 2009 at the **North Seattle Family Center** in Lake City with four note-takers and 10 participants, recruited from Family Center program participants, and the other was on April 6, 2009 at the **Family Works Resource Center** in Wallingford with four note-takers and 24 participants, recruited from Family Works' client list and the associated food bank. Ten participants in the **North Seattle** group completed a brief written survey, as did 27 participants in the **Family Works** group. After some initial confusion in one group, participants engaged in the planned focus group activities – a dynamic method that relies on mutual interviewing among the community members – with apparent ease and interest. One note-taker made the observation that participants were comfortable talking with one another.

All but three of the participants in both groups indicated that they speak Spanish at home. The three who indicated English at home were at **Family Works** and two of these indicated also speaking Spanish at home. Overall, the age groups were well distributed, with 17% between 18 and 25, 37% in each of the next two age groups, and 9% between 51 and 64. The **North Seattle** participants were more similar in age with all the participants between 26 and 50 years old, compared with two-thirds of the **Family Works** group while another quarter of the **Family Works** group was younger than 26 and three participants were between 51 and 64.

Overall, nearly three in ten (28%) of the Latino participants reported less than a high school education, and another 46% indicated that high school completion was their educational achievement. The remaining quarter were distributed between some college (9%), four-year degree (11%), and post graduate (9%). Half of the **North Seattle** group had less than a high school education, and all but one of the others indicated a high school as their education level. The **Family Works** group reported somewhat more education, with half reporting having completed a high school education and only 20% indicating less than high school. About 30% of the **Family Works** group reported at least some college, with about 20% indicating at least a four-year college degree. About four in ten of the Latino participants were employed, and about one-quarter were homemakers. Half of the **Family Works** group was employed, 20% were

students, 15% homemakers, and 10% unemployed. One person was retired. Most in the **North Seattle** group were homemakers (63%), one was employed and two were unemployed. Household incomes ranged from less than $20,000 per year (39%) to between $50,000 and $75,000, reported by one person. About one-quarter (26%) reported a household income between $20,000 and $30,000, and 30% reported income between $30,000 and $40,000. Few of the **North Seattle** participants supplied income information and the three that did indicated a yearly household income of less than $30,000. Sixty percent of the **Family Works** group also had an income of less than $30,000, and another 35% indicated an income between $30,000 and $40,000.

Summarizing, the two focus groups reached different demographics – the participants in the **North Seattle** participants had less education and the daily responsibilities for most were focused in the home, while the **Family Works** participants were somewhat more diverse in age, more educated on average, though some members of the groups also had limited education, with daily responsibilities for most focused outside the home in jobs or at school.

Technology Access and Use

Overall, two thirds of the participants in both groups have cable TV, three-fourths have cell phones, and nearly as many (72%) have a landline at home. Overall, 22% have a cell phone but no landline. About three-fourths (77%) are computer users and 71% are Internet users. Sixty-nine percent report having a computer at home and 58% report having home Internet access. Most (69%) use email – with 30% checking it daily and another 41% checking it a few times a week. About half of the email users (34% overall) use email attachments. Overall 14% said they have Internet access on a mobile device.

Survey results show that the two groups have different profiles. The **North Seattle** group access less technology than the **Family Works** group, including cable TV (59% vs. 89%), cell phone only (26% vs. 11%), computers at home (33% vs. 81%), and home Internet access (22% vs. 70%). None of the **North Seattle** participants and 19% of the **Family Works** participants have a mobile device. *Mutual interviewing* results yield the same conclusion about computer access, with a less extreme division (63% vs. 93%). **North Seattle** note-takers explained that 50% to 60% of their families have computers at home, but they are old.

More of the **Family Works** participants are computer users (92% vs. 33%) and Internet users (88% vs. 22%). Again, *mutual interviewing* yields the same conclusion with a less extreme division. About 90% of **Family Works** interviewees were recorded as having used computers for at least a year, compared with 55% of **North Seattle** interviewees. This figure may be too high for the **North Seattle** group as three-fourths of the same participants from **North Seattle** said they would *like* to use a computer and the Internet, agreeing that they are missing out and having trouble getting needed information, staying in touch and getting things done by not having access. It may be that participants have computer access, but no Internet access and no clear understanding of the difference.

Survey results indicate that many more of the **Family Works** participants use email (85% vs. 22%), and email attachments (46% vs. 0%). Almost half of the **Family Works** participants check email at least daily and most of the others check it a few times a week. Two said they never check it. None of the **North Seattle** participants check email daily. Four said they check it a few times a week, and four said they check it less than weekly or never.

Survey: Overall, of the 27 participants who indicated their type of Internet access, 30% noted dialup, 30% DSL, 15% cable, and 19% WiFi. Eleven percent indicated that they have premium or business access. Only two of the **North Seattle** participants indicated the type of Internet access – both dialup. The other **North Seattle** participants did not have any Internet access at home. **Family Works** participants were distributed across the types of access: dialup access (24%), DSL (32%), cable (16%), WiFi (20%), and Business/Premium (12%).

Survey participants were varied in what they would be willing to pay for fast (or faster) Internet service. Most commonly (40%), participants checked $10-$20 per month, 22% selected an amount less than $10 per month, and another 26% checked $20-$30. Three checked $30-$40 and one indicated more than $40. Two people in **North Seattle** indicated they would pay nothing, two selected $5 to $10 per month, three selected $10 to $20, and two selected $20-$30. **Family Works** participant responses were slightly higher so that none indicated that they would pay nothing, one selected less than $5 per month, three selected $5-$10 per month, 11 (42%) selected $10-$20, seven (27%) selected $20-$30, and four selected more than $30.

Paraphrased Comments

Family Works: When I open web pages and I don't know where to go next

North Seattle: They need education – they don't know. Attack from the root with education: how computers work, how to take advantage of them and at the same time, how to protect the family.

Survey: Respondents were asked to identify their skill level with computers and the Internet, from "None or not very skilled" to "Expert." Most commonly (40%) respondents selected "None or not very skilled." Fourteen percent selected "Know what I need to know," and 20% each selected "Can figure out new programs as I need them" and "Skilled (sometimes help others)." Two people selected "Expert." North Seattle participants rated themselves as significantly less skilled. Eight (89%) of the **North Seattle** participants selected "None or not very skilled" as their skill level with computers and one said she is skilled enough to sometimes help others. The **Family Works** participants are more diverse. About 20% selected "I know what I need to know," and about a quarter each selected "none or not very skilled," "I can figure out new programs as I need them," or that they are "Skilled (sometimes help others)." Two people in this group identified themselves as "Expert."

Mutual interviewing: Half of the participants who said they do not have a computer at home also said that they want one. These were at **North Seattle.** The three **Family Works** participants without a computer at home said that they do not want one. About one fourth of the participants with a home computer said it is good enough for their needs – half of the six **North Seattle** participants with a home computer and 82% of the **Family Works** participants with a

home computer. About half said that they use computers in another location and 58% of these say it is enough for their needs; about three-fourths of the **Family Works** participants, and none of the **North Seattle** participants. Nearly four in ten (37%) of the participants indicated that they have problems using computers and the Internet. At **North Seattle** this figure was seven of the eight respondents, and 22% of the **Family Works** participants. Not quite half (47%) of the respondents said they are able to use a computer as much as they want. More of the **Family Works** participants agreed with this than the **North Seattle** participants (56% vs. 33%).

Survey: Nearly all (95%) of the participants are satisfied with the reliability of their Internet access, and fewer, but still most, are satisfied with the speed (76%) and the customer service (72%). The fewest (61%) were satisfied with the cost. However, when asked what one thing would most improve their Internet service, the most common response was *speed* (50%), with price coming in a close second (46%). Most of those answering these questions were from **Family Works**. Only one of the two Internet users at **North Seattle** responded to these items.

Survey: Overall, the most common use for computers was searching the Internet (68%). Participants also use computers to find health information (44%) and use social networking sites (38%). Between 20% and 30% indicated that they use computers to get information about their community and to shop online (both 29%); find information about local businesses (26%); and attend an online class or webinar (21%). Overall 18% said they do not use computers. The most common use of computers in the **North Seattle** group was no use (56%). One third each checked finding health information and getting information about the community. Two said they search the Internet and one each selected taking an online class and social networking. The **Family Works** group provided a different profile. The most frequently selected activity was searching the Internet (84%); followed by finding information about health issues (48%); and social networking (48%). Other uses were shopping online (40%); finding information about a local business (36%), getting information about the community (28%), and attending an online class (24%). None in either group have sold goods or services online or contributed to a blog or wiki.

In mutual interviewing, participants in both groups mentioned that computers are good for getting information, including keeping current on news ("getting the ultimate in happenings around the world"); finding jobs; education, including training and helping children with homework; and communication with family and friends, including those in Mexico. In addition, **Family Works** participants mentioned using computers for shopping; listening to music; and getting and sharing photos. What they like best about this technology is being in touch with family and friends; staying informed; having access to communication and information/ learning new things; homework; managing finances, including banking and bill paying; access to addresses (mapping programs), and playing games. At **North Seattle**, even though usually not computer users themselves, participants mentioned that computers are also good for looking for benefits; getting information about special events, health, weather, and maps and directions. One person reported finding a new job on the Internet.

Survey: Most of the computer users in these groups use a computer at home (83%). Half noted the library, and about a quarter each indicated work (23%), school (27%), and 10% each indicated a friend or relative's, and a community technology center. Four **North Seattle** survey respondents identified two places that they use computer: home (50%), and the library (50%). Many more (88%) of the **Family Works** group indicated that they use a computer at home, followed by the library (50%), school (27%), and work (23%). Twelve percent each selected a friend's or relative's, a community technology center, or some other location.

In mutual interviewing, participants in both groups were aware of public access computers at the public library. Awareness of community technology centers was mixed. Libraries and the Family Center were the only locations identified by the **North Seattle** participants to access computers. **Family Works** participants identified home, the library, school, work, and a community center as locations where people use computers. **Family Works** participants singled out the libraries as a great resource with good Internet access which should be maintained. However, participants in both groups had concerns about library access. Some observed that although the service is good at the library, the computers are slow and can be reserved for only an hour, which is not long enough for people looking for a job. Others noted that libraries do not have enough computers to meet the demand, don't permit the use of social networking sites, and that the computers are getting old. Participants also note that libraries tend to close at 6 when people are getting off work, and suggested a better schedule.

Paraphrased Comments

Family Works: We need training. And get down the prices for Internet and software. Access to the Internet need to be more equal – available for everybody. It's a tool, but people get isolated. Everybody has a computer. We complain about computers but we also have it. Some families don't, though.

North Seattle: Families may have a computer, but they don't know how to use it – they need courses on basics – most don't know how to start a computer. They need an instructor who knows, reads, and writes in Spanish.

Some families have computers, but not Internet due to high cost. Free Internet or at least in a very low cost would be great.

Some participants were aware of the community technology centers, but noted that the service is slow at those locations, suggesting that the technology centers implement the same relatively restrictive system of use as the library. Others remarked that public access computers at technology canters need more software, and that bilingual, "user-friendly" training is needed, suggesting computer access through the Family Center, along with a way to learn. Most **North Seattle** participants were not aware of community technology centers, even through the Family Center, and wanted to know how to access them.

Generally, about half the participants said that the computers they use away from home are good and/or fast, and about half had concerns, either with the computers (too slow or too few) or with the limited time. Most of the **Family Works** participants (78%) said that the available public access is enough for their needs, and one added that he/she would like to learn more about it. Four remarked that they need something better, including more computers available (expressed as wanting more time on the computers, more computers – especially at community

centers, or a complaint about the slow service at the community centers) and more up-to-date programs.

Goals and ambitions about computer use

Overall, Latino community members want to more access to computers and the Internet than they currently have. Participants noted that while publicly available computer meet some of the need of the Latino community, those without any computer skills and without English proficiency are being left behind. Participants suggest two steps for helping Hispanic families get online: 1) increasing access to computers and the Internet preferably by making home access affordable, and if not them by increasing the availability of public access computers at libraries, Family Centers, community centers – wherever people are. This would require increasing the number of computers available, the amount of time available per use, as well as the hours of operation to beyond business hours; and 2) providing free or low cost basic and advanced bilingual computer and Internet training on a flexible schedule and in multiple locations, with the opportunity for learners to practice new skills.

Paraphrased Comments

Family Works: We face two generations: the old generation would like to get rid of the computers because they got isolated and with limitations in the work force. In these days, just one person can do what many people used to do before. For the new generation, it's a great took to get I touch with family, friends, photos, entertainment, information, jobs, etc.

North Seattle: There is a problem when kids are using computers in English but parents don't speak English – how can they tell if their kids are getting into trouble?

I would like to learn about community events and children school programs; I do not use it – I do not know how

Mutual interviewing: Participants with more computer experience gave two-sided answers to these questions, reflecting two different perspectives. From the perspective of older participants, computers have created problems in their lives, by reducing job opportunities and creating isolation in their communities. From the perspective of younger participants, computers and the Internet are convenient tools that bring many benefits including convenience, connection, information, and education.

About half of the participants said they want more computing opportunity, or to use computers and the Internet for more things than they currently do. The groups were quite different in their level of computer experience, yet some participants in both groups focused on wanting to use computers, including public access computers, to start or promote a small business. More of the **North Seattle** participants (67%) mentioned wanting to do more with computers. These participants noted that Latino residents could use computers to find better jobs; look for housing; spend time with children both having fun and helping with homework; look for family support and schools for the children; get special event information; get health information; contact family in Mexico through email; get driving directions; have access to the community and city services and information; and track weather. Most of the **North Seattle** participants said they wanted to learn "everything."

Eight **Family Works** participants (44%) indicated that they wanted to do more with computers. Three of these mentioned specific goals, including designing web pages, learning how to promote their services, and starting a small business. One mentioned needing more time in his/her life to be able to use computers.

The three greatest barriers to computer and Internet access identified by **Family Works** participants were cost, lack of knowledge, and lack of time.

Concerns about Access

Mutual interviewing: Overall, participants in both groups were concerned about Latino residents without access to computers. Though some suggested that for some residents this could be because of not liking technology or not having the time to explore it, both groups believed that individuals without access to computers are missing out on important information and opportunities, and suggested ways of increasing interest in and access to computing skills and resources for Latinos. The **Family Works** groups was more experienced with computers than the **North Seattle** groups and were accurate in identifying the benefits of computers that would be of interest to those not currently connected, such as the opportunity to find work, find resources for Latino Seattleites, help children with schoolwork, or access education themselves. Barriers to home computer and Internet access identified by both groups related to the cost of both computers and Internet access. Barriers to public computer access included not enough computers, and especially not enough Spanish language computers, and hours that are not friendly to working parents.

Family Works participants speculated that people who do not have computer or Internet access may be intimidated by technology, unable to afford the expense of becoming connected, lack the motivation to do so, or simply lack the knowledge about the benefits of technology or how to use it. Some participants remarked that some people simply don't like technology or don't have the time.

Family Works participants suggested an awareness campaign to let Latino residents know about the benefits of a computer or the Internet once they learn how to use it. These participants also suggested helping Latino residents who are not yet connected become comfortable using computers and the Internet by placing more computers in general, and more Spanish computers in particular at more locations around the city, and keeping these locations open for longer hours.

At **North Seattle**, note-takers summarized that without access to computer and the Internet, Latino residents will be slow to learn about changes in immigration laws and the resources that would become available with the passage of those laws. Participants are sometimes afraid to call a government telephone number with these questions, and sometimes are unable to because of the English proficiency required. Participants believe that they cannot enroll at a community college because that requires a social security number which they may not have because of immigration status. Note-takers added that without computer and Internet access, these parents

don't know what's going on in school with their children. One note-taker pointed out that with limited English, parents cannot monitor their children's computer use, which can discourage enthusiasm for having a computer at home. However, without home computer access, the children will have computer access only at school, which will make it more difficult for them to succeed in school. They summarized that participants simply have very little information about computers and have concerns about safety, with worries about viruses and predators. Note-takers suggested a program with a waiver for low income families so that families could have computer access and training to use it.

Family Works participants suggested that others might want to begin to use computers and the Internet to get information to look for work, to shop, or to help with their children's homework. Participants especially encouraged access for all because of the value to education, citing the Chilean President who just gave away 30,000 laptop computers to the children with the highest educational achievement in Chilean villages.

In addition to providing more public access Spanish computers, participants encouraged finding ways to lower the cost of computers, support free and open-source software and make the Internet available to all or at least affordable for more people.

North Seattle participants thought that being able to access information in Spanish, especially information about Seattle resources for Spanish speakers, would encourage Latino families to get online. One note-taker explained that being able to find certain services in Spanish language is important because people want control over their own lives in important interactions and therefore don't feel comfortable using an interpreter in visits to the doctor or the immigration lawyer, for example. Participants also want the opportunity to find a better job or job training – online or in the community; more access to education for themselves; more ability to track children's homework; to find family support for families and children; to find health care available to the Latino community; to shop online – and to find coupons; to pay bills online; to find directions via mapping programs. One special concern of this community is to be able to look for family when the family breaks apart because of immigration and deportation. Participants want to be able to find family before they are deported. Participants would like to be able to find a Latino newspaper online and would like a Spanish version of Seattle.gov, similar to the Florida state website.

Participants described many barriers that face Latino families wanting to get computer and Internet access, including:

- No money to buy a computer
- If they have a computer, they don't have Internet access because it is too expensive
- Difficult to find a public access Spanish computer with Spanish software
- Most participants are not proficient in English and do not know how to use computers, and most computer classes require a fairly high level of English proficiency

- Participants believe they must be able to furnish a social security number, which they may not have, to be able to enroll in classes at a community college
- Parents may be too busy taking care of families to be able to attend a class

Family Works participants also voiced concerns about the misuse of computers. They noted the isolation that can result from using computers, and concerns about addiction to computers – which results in too much focus put on the computer and creates friction in the family. They also remarked that computerization has resulted in job loss because of the greater efficiencies available with computers. **Family Works** participants voiced a concern about access to pornography for both children and adults.

Training

The need for affordable, accessible, bilingual computer and Internet training was stressed in both groups. Somewhat more than half of the participants from both groups who answered the question during *mutual interviewing* said they had already taken a computer class. **Family Works** participants who have not taken a class identified lack of time, cost, lack of motivation, and health issues as reasons that they have not taken a class. **Family Works** participants who *have* taken classes said they took them in their hometowns; at schools; at Literacy Source; or at a Community Center. Topics included using the Internet; specific software applications; and email. Topics of interest include those three, and how to fix a computer; how to set up programs, creating a website, and "everything." Participants noted that computers and software is expensive and that more training is needed for specific programs. Three **North Seattle** participants said they have taken a basic computer class at North Seattle Family Center, one mentioned a college class in graphic arts and video editing, and another mentioned a basic computer class held at the Seattle Center. All but one in each group said that the classes had been useful, and all of the **North Seattle** participants, and 82% of the **Family Works** participants said that they would be interested in taking a class in the future.

Those who have not taken a class mentioned being held back by not knowing where to find free or low cost classes, the language barrier, a lack of time, and having no place to practice.

Participants in both groups asked for free or low cost "how-to" computer classes, offered on a flexible schedule in many locations throughout the community and conducted in Spanish or Spanish and English. Suggested locations included: public libraries; colleges; Family Centers; community centers; job sites; or wherever classes can be free or very low cost. Participants also mentioned the need for better public transportation so that people who need the classes can get to them.

Basic, "how-to" computer training would include navigation on the Internet and better use of the computer; basics of email; basics of digital photos; and just learning about programs. Advanced classes would provide more in depth training. Some participants asked for a personal tutor or an instructor to be available at all times. One note-taker added that learners

need to be able to work on computers at home so they can practice what they've learned, commenting that there is a big problem in learning, practicing, and remembering.

Family Works participants most often mentioned computer and Internet classes as something that would improve their use of computers and the Internet, followed by a faster Internet connection. Others mentioned the need for a better computer, better time management, and open source software.

North Seattle participants asked for more information about bilingual community computer workshops announced through the Family Center and/or the public library, and in fliers or on calendars. Some of these participants suggested performing community service in exchange for this training.

Evaluator Note:
Latino residents willing to perform community service in exchange for computer training may be willing to raise awareness with community members about the benefits of computer and Internet access, and perhaps demonstrate or provide one-on-one tutorials for basic computer skills to others in the community (Borrowing from "Each one teach one").

Communicating with Government

Survey: Participants most commonly prefer to make contact with the government on the web or by email (48%), or by telephone (24%). Fewer preferred to write a letter (17%) or visit in person (14%). The patterns were different for the two groups. **North Seattle** participants were more likely to opt to write a letter (40%), with only 20% selecting each of the other options. At **Family Works**, about half prefer web or email contact, a quarter prefer the telephone, and the rest are evenly divided between writing a letter and visiting in person. When asked how they prefer to give their opinions to the City on issues they care about, 30%-40% of both groups opted for a telephone survey, about a third of both groups selected calling into a meeting, about 20% of each groups selected participating in an online discussion. Slightly more of the **North Seattle** participants opted to attend a city-wide meeting (22% vs. 16%) or a community level meeting (33% vs. 20%). More of the **Family Works** group selected and email or online survey (40% vs. 11%). No one selected a short text-message survey, nor did anyone select "none."

Paraphrased Comments

Family Works: I hope this information really helps to create a useful proposal to the City!

Survey: Overall, about one third of the participants have visited Seattle.gov or seen the Seattle Channel. More of the **Family Works** group has visited Seattle.gov (42% vs. 13%) and more of the **North Seattle** group has seen the Seattle Channel (50% vs. 31%). Two people remarked that the Seattle Channel has is really good or has good information. In *mutual interviewing*, most participants said they don't know much about the City's website and cable channel. However, participants were able to name some of what they wanted to see on Seattle.gov, including:

- ESL classes
- Community events and information; Family, Social, Cultural
- Access to support groups
- Free family events
- Employment opportunities locally and in surrounding areas
- Weather
- Traffic
- Local news
- Sports
- Nutrition

The list developed by **North Seattle** participants includes:

- Seattle news
- Alerts
- Updated immigration news
- Information on how to open a small business in Seattle
- Community services
- Teen services and activities, and support for teen parents
- Updated health information, including health services
- Community and city events
- Computer classes
- Housing
- Job information, a directory of jobs website, a list of agencies and positions available for a bilingual speaker
- The magazine *Colors*
- Weather

Residents from these groups want to know more about immigration, especially about changes in laws that would affect immigrants, and about their communities. Participants were especially interested in having resources and more information in general available to the Hispanic community in Spanish. **Family Works** participants were also interested in how the City uses our tax dollars.

North Seattle participants also mentioned wanting to know about kindergarten and how to be involved in their children's school, as well as education opportunities for themselves, including English classes and bilingual computer classes; community events for the well-being of the community; programs to help families and parenting tips; childcare in the area; and how to get involved with the community. Note-takers summarized that the participants they heard from need information in Spanish to gain access to education, services, and activities for themselves and their families. This was

Paraphrased Comments

North Seattle: I like the idea either way because I would get information about everything that is happening in the community.

It will keep me updated on what's happening around us.

seen as key to being able to participate more fully in the community. They come to the Family Center to get information about Mexico and the family still there or recently deported. Translated comments from mutual interviewing bear out the note-takers' impressions that participants want access to community involvement that currently eludes them, largely because of language and technology barriers.

*Survey: S*urvey respondents in both groups were well distributed in how they want to get information from the city. None selected text messages. Between 30% and 40% each selected the TV news, the radio, and the City's website. Between 20% and 25% selected the newspaper, email notices, and notices in the postal mail. Among the **North Seattle** respondents, nearly half (44%) each selected the TV news, the Seattle Channel, and the City's website, a surprise considering the lack of computer access in this group. About one third each selected the radio, the newspaper, and postal letters. Two each selected hearing from other community members and recorded telephone or cell phone messages. None of the **North Seattle** participants selected email notices. In *mutual interviewing*, participants added that email is great for those that have email; otherwise, postal mail is preferred. They also thought that fliers and calendars for bilingual computer classes would be effective for getting the word out.

A third of the **Family Works** group also selected radio, TV news and email notices. About a quarter selected the City's website and about 20% checked the newspaper, postal letters, and other community members. About 10% opted for the Seattle Channel or receiving recorded telephone messages on their home phone or cell phone. In *mutual interviewing*, most **Family Works** focus group participants noted that they liked the idea of receiving information from the City via the website or email, although they also mentioned postal mail and posting information at schools and at work sites.

African American focus group

Summary: Participants in the African American focus group were more technologically connected than the African American survey respondents, with all using computers for at least a year and most using email at least daily. All but one participant reported having home computer and Internet access, mostly high-speed (with few satisfied with its cost). Despite this access, most assessed their computer skills modestly. The most common use for computers was searching the Internet, especially for health and community information. Participants listed many other uses.

Participants voiced concerns about having too much computer access, about computer viruses and hackers, and about the inequity of computer access in the community. They noted that people who are not currently connected may be afraid of computers or simply unaware of their benefits and without access to affordable training on how and why to use them. Participants expressed concern that people who are not connected are "losing ground in the information technology world."

Participants want to learn more, regardless of their current level of expertise, and they want that opportunity for others, especially more vulnerable members of the community, such as seniors and limited English speakers.

Participants called for more time on more public access computers, at hours that are friendlier for working people, along with affordable and patient training, a 24 hour help desk with support available in different languages and if possible a way for learners to acquire a personal computer so they can practice at home. Participants also commented that public access locations may be too crowded and may not be comfortable for people doing their banking, bill paying, or researching sensitive health information.

Participants want to make contact with the government on the web or by email (two-thirds), by telephone (half) or in person (half). They want to give their opinions via an online survey or in an in person focus group. Participants are interested in finding employment information, neighborhood information and events from all departments, all in one place. They also want crime and safety information and more contracts for small businesses, and budget transparency. Participants stressed the importance of getting the honest news, even if it is not comfortable.

Most participants want information via the TV news or postal mail. About half opted for email notices and about one third prefer the radio or newspaper. About a quarter selected the City's website or the Seattle Channel.

A focus group with African American residents was conducted on April 8, 2009 at the Garfield Teen Life Center with 24 participants and four note-takers. Seventeen participants completed a

brief written survey. Participants engaged in the planned focus group activities – a dynamic method that relies on mutual interviewing among the community members – with apparent ease and interest. Participants were well educated (all survey respondents have at least some college and 60% have at least a four-year college degree), and most were employed (64%). The others were unemployed (14%), retired (14%) or students (7%). Participants were diverse in both age and income. About half were between the ages of 51 and 64, about a third between 18 and 50, and the others 65 or older. Of the people indicating household income, two indicated income of less than $30,000; five indicate between $30,000 and $40,000; four between $40,000 and $75,000; and two over $100,000.

Technology Access and Use

Survey results show that nearly all (94%) have a cell phone and cable. Most (88%) have a computer at home and almost as many (82%) have home Internet access. Forty-one percent have a mobile device.

Survey: Nearly all (94%) are computer and Internet users and they indicated a range of skill level, with most saying "I know what I need to know" (40%) or "I can figure out new programs as I need them" (33%). Few claimed to be more skilled – three (20%) indicated "Skilled (sometimes help others)" and one indicated "Expert." All said they use email, with most (88%) indicating daily use. Most (82%) use email attachments. Most (87%) report having high-speed access at home, specifically DSL (33%), cable (40%). One person indicated WiFi and another person reported having premium or business class access. Two use dialup access. Survey participants were varied in what they would be willing to pay for fast (or faster) service, with two people saying they would pay nothing, five selecting $5 to $10 per month, and another four selecting $10 to $20. Five people (about one third) selected amounts of $20 or more.

Mutual interviewing revealed that all focus group participants have used computers for more than a year and all have a home computer except for one person who has enough access at work.

Survey: Most people are satisfied with most aspects of their Internet access (speed: 86%; reliability: 85%; and customer service: 73%) except for the price (31% said they are satisfied). Accordingly, when asked what one thing would most improve their Internet service, five people (36%) selected price. Another two people selected price as one of two areas for improvement. Speed was the second most frequently selected (four people – 29%), and two people selected customer service.

Survey: The most common uses of computers in this group was searching the Internet (88%); finding information about health issues (88%); getting information about the community (81%); finding information about local businesses (75%); or shopping online (75%). Some indicated that they use social networking sites (44%) or that they have taken an online class or webinar (38%). Few (13%) have sold goods or services online. None indicated that they contribute to a blog or wiki.

In mutual interviewing, participants mentioned using computers for banking; research; education – including saving money by printing out textbooks available online; pictures/video/webcam; drawing; games; shopping; watching TV; downloading music; job searching; maps/directions; travel reservations; forms (job, unemployment, school); dating; running and maintaining a business; graphic designing (websites); up-to-date news including local events; and storing and organizing information. Best uses include the quick access to any information, with health information, sports highlights, and staying informed mentioned specifically; the convenience including 24/7 bill paying; doing school work or education in general; communication; work; and entertainment.

Survey: The most common location for using a computer in this group was at home (88%). Work is also a common location for using a computer (63%), followed by the public library (38%), school (31%) or a friend's or relatives (25%). Two (13%) indicated a café or restaurant, and one indicated a community center or technology center (6%). Nearly as many (21%) use a friend's or relative's computer.

In mutual interviewing, participants noted that it is economical to have a computer at home, though participants mentioned using computers at the unemployment office; at church; at school; at the libraries; or in their car or on an airplane. Participants noted that the library is great if WiFi and space are both available, but some felt that the library is too crowded, lacks privacy and the hours of operation are business hours, when patrons might be at work. Participants suggested making more computers available at public access locations, give more time on them, and more hours of access. While most felt that at home access was preferable, one thought that having a laptop would give too much access.

Goals and ambitions for computer use

Mutual interviewing: Most of the uses for computers and the Internet listed in response to this question are also on the list of how computers are currently used. Participants said they want to learn how to use specific applications; how to fill out applications; how to communicate via webcam and chatting; about twitter; how to scan and send pictures; how to use a flash drive; how to improve genealogy research; how to shop online; how to make travel arrangements; how to make home movies; troubleshooting – and how the inside of a computer works; how to add equipment; and the difference between uploading and downloading. One person remarked that people need the option of researching health issues. This may reflect the broad range of computer experience, and a desire by focus group participants to learn more, regardless of their current level of expertise.

All participants who answered the question during mutual interviewing said they had taken a computer class, listing a variety of sources including the Parks Department, the Mayor's office, the City of Seattle, and King County Library. They also mentioned various schools, and several mentioned taking classes at work. Topics included specific software applications; computer repair and troubleshooting; basics of online research and information literacy; computer

networking; social networking; email; file management; and better use of software and equipment. All said that the classes had been useful, and most of these said that they would be interested in taking another class. One specifically asked for training in areas to enhance knowledge, business, and marketability and several others said they want to learn "everything." Some were more specific, mentioning graphics or how to research.

Participants also identified a need for upgraded equipment; lower cost for services; more time; and free or low cost training to be able to use computers as they'd like.

Paraphrased Comments
All senior centers need computers.

Yes, they are left behind. Computers are the future. With no or little experience, seniors don't have access or the means to get a computer, and even if they do get one, they don't have any training.

If you never use it, you don't know the benefits.

If you don't use it, your knowledge is limited.

Concerns about Access
Mutual interviewing: Overall, participants noted inequity in computer access in the community, speculating that those who do not use computers may be intimidated by them, with no or limited knowledge about computers, and no feasible way to gain access and knowledge because of the expense of home access and insufficient public access. In addition to lack of access, participants mentioned that people not currently connected also have a lack of understanding about the benefits of computers, and no access to affordable training on why and how to use them. Participants are concerned that people who are not connected are "losing ground in the information technology world." Participant comments suggest that the fears of people who do not have access are similar to computer users', but magnified by a lack of knowledge and context of experience. Some mentioned that new learners might have a fear of making mistakes, and others mentioned a fear of well-publicized Internet dangers, such as identity theft or other misuse of personal or financial information; viruses; risks to children; and the threat of being scammed.

Participants mentioned a concern that seniors do not have needed access to computers and that at public access sites, they have to "battle" younger users for access. Although the participants believe that residents who do not have access to computers and the Internet, and who do not know how to use it are disadvantaged, they also noted that seniors without computer access don't always feel they are missing anything because of simply not being aware of the information and convenience that is available through the Internet.

Paraphrased Comments
Computers at work and at home – we use them to help our kids with homework. Just about everything we do is on computer. All things seem to be going that way, with less and less contact with people.

People who don't use computers and the Internet are in a hostage situation as more and more of what we need is online. Are we not alienating people who don't have access? Signed, a resident dinosaur.

Participants noted that "there is too much demand and too little supply" for publicly available computers and suggested **increasing the availability of public access computers** at libraries, churches, community-based organizations, senior centers, the employment office, community centers – wherever people are – by **increasing the number of computers available, the amount of time available per**

use, as well as **the hours of operation** to beyond business hours.

Participants also suggested helping residents who are not yet connected to find used, cheaper computers, with one person specifically mentioning Interconnections, the local nonprofit organization that accepts volunteers to help refurbish computers to be shipped to developing countries as a way of earning a computer system for themselves along with some knowledge of computer functioning and repair. Worldstart.com was also mentioned as a training source for people who already have computers but want to learn new applications. Other support needed to get residents computerized included: knowing where to find **free hands-on computer training**, at more locations around the city and at more times (not just business hours), with patient instructors – perhaps youth volunteers teaching seniors, more user-friendly and non technical instruction books, tutorials on computer usage, a 24 hour help desk with support available in different languages.

Participants also remarked that having a home computer and Internet access does not necessarily solve access problems. They note that home Internet access and home computers themselves seem too expensive – expensive enough to prevent some from having home access – and even with access at home, about half said they do not have as much access as they want, with some mentioning that they compete with family members for time on the computer.

Some participants are seeking to upgrade to a newer computer, noting that their current computer still has floppy drives and they do not have Internet access, or to a laptop for the convenience of being able to use it anywhere, or simply adding a computer because even with their home computer, they do not have enough access because others in the home also want access. Another person, however, cautioned that laptop access could be *too much* access, leading to too much computing with a specific concern voiced about the addictive aspect of computer use.

Even in this relatively well-connected group, one person commented that s/he is "lost" on computers, has only a dial up Internet connection because high speed access is unaffordable, and that s/he would like questions answered without it costing money. Another asked, "How do you get information about software, tools, and so on? How do you use them and what all is needed? I need more information and more access."

People also asked for more information on computing safe from viruses and other predation, safe online shopping practices, protection from online scams, and safeguarding personal information, both for themselves and for people who are new to computing. One person asserted that s/he does not do any personal business on the Internet because of safety concerns.

Communicating with Government

Survey: Two thirds of the survey respondents prefer to make contact with the government on the web or by email, and about half (53%) prefer the telephone. Nearly as many (47%) prefer to visit in person, and 20% prefer to write a letter. Correspondingly, when asked how they prefer

to give their opinions to the City on things they care about, half the respondents selected email or participating in an online survey and as many selected participating in an in person focus group. One third selected attending a citywide meeting, and a quarter each selected attending a community meeting and participating in a telephone survey. Two wanted to call into a meeting and only one wanted to participate in a short text-message survey. None indicated interest in a discussion on the Internet. No one checked "none."

Survey: Most (81%) of the survey respondents have visited Seattle.gov and seen the Seattle Channel (73%), and most of these (73%) on cable. In *mutual interviewing*, people named some of what they wanted to see on Seattle.gov, including:

- Employment information – more user friendly; application and application status
- Neighborhood events; ways to meet your neighbors; networking
- More contracts for small groups/businesses; and contact information for people issuing contracts
- Police information and what's going on; crime and statistics
- Service information; community organizations
- More City events from all departments in one place, updated regularly and posted before the event
- Good road map with geographic markers
- Assistance for seniors and people with disabilities
- Tax information
- Internal departmental information – whom to contact with problems
- Future projects or events not yet finalized that allow younger voters to get involved in government and politics

Paraphrased Comments

We want honesty – even if it's not pretty, tell us the truth! Give us information in real time, exactly what's going on – crime, buses…

Access to live people for problems

I would like to know what's going on in the community – if I was new

Information that could lead to employment and information about local neighborhoods and how to meet neighbors were both frequently mentioned as topics that participants wanted to see on the City's website. Participants added that they want honesty on the City's website. And they want information on programs or services that target specific groups – by gender, age, or other group. Participants asked for real time information so that they are up-to-date in the moment with neighborhood events, such as crime, and services, such as buses. They also want to know what's happening in outside communities.

Residents want to know more about what's going on around the City, with many comments relating to crime and safety, including crime statistics, sex offender movement, and block watch information. They want to know more about free services and events, and how and where to get involved in the community. They also asked for more information about how public money is spent, and they want to be able to get information about schools and school decisions, and zoning issues.

Some individual ideas provided by participants in mutual interviewing include some way to personalize the City's website, a citywide Google page, for example "igoogle" which would result in information about local events, and other topics of interest. Another suggested that the website could be a location letting visitors know where to find affordable software, free classes, free WiFi, and other discounts. Participants were reticent about receiving text messages from the City, saying they would like a text message *if it's important*. For some, traffic alerts met the "important" criterion.

Survey: Most survey respondents want to get information from the city via the TV news (82%) or notices in the mail (82%). About half (55%) prefer to get email notices and about one third each prefer the radio or the newspaper. About a quarter prefer watching the Seattle Channel or checking the City's website. Only two were interested in receiving recorded messages or text messages on their phone or cell phone, and only one wanted to count on hearing it from other community members. In *mutual interviewing*, most focus group participants noted that they liked the idea of receiving information from the City via email.

African immigrants focus group

Summary: Most of the participants in two of the African Immigrant events had limited or no English proficiency. Participants seemed relatively well connected with small technology, such as cell phones and mobile devices, but since many were illiterate in Somali and therefore did not complete the brief survey, it is difficult to be sure. Surprisingly few had landlines. The group attending the Africa Celebration was more educated and better established, with proficient English and technology access. The participants in the other groups had low English proficiency and less access to computer technology and wanted more. Nearly all indicated that they feel they are missing out by not having more technology access and the knowledge to use it.

Participants find technology both unaffordable and inaccessible because of lack of training in their language or not knowing where to find it, lack of money, and lack of content material in the native language. Respondents who do have a computer at home are most likely to have a dial up Inernet connection.

Participants in one group discussed concerns about MySpace and other Internet sites, which they fear will leave their child vulnerable to predators or negative content. However, as non English-speaking parents, they are blocked from monitoring thei children's computer use, unsure whether their child is doing homework as they claim, or visiting forbidden (and possibly misunderstood) websites without their parent's approval.

Despite the relatively low level of computer access, participants most commonly indicated that they prefer to make contact with the government on the web or via email. It may be that when this option is available – that is, when the participant has the skills and the access to the technology, this may be the preferred method; otherwise, the telephone is preferred.

Participants want to be involved with community affairs – no one indicated that they do not want to give their opinions in any form. Participants most often selected an email or online survey, but again, this may be dependent on knowledge of and access to the needed technology. Participants want to get information from the City via TV news, the City's website, notices in the mail, the Seattle Channel or the newspaper.

Participants would like to find job information, support for a family business, and information about homework/ summer and after school activities on the City's website. Participants were particularly interested in learning information about their community – other community members, events, and information, as well as access to global news. They'd like to find links to languages other than English, access to education, including learning English and learning about computers – with one person asking for "Pictures that talk and interpret and explain it." This may be a reflection of the limited literacy among these participants, pointing to the need for a universally designed website that is accessible even with limited ability to read.

We participated in three events to learn about the perspective of African immigrants on technology. On April 4, 2009, the North Seattle Family Center in Lake City hosted an African Celebration, providing a booth for the Department of Information Technology. Brief surveys were collected from 11 attendees at this event.

On April 9, the Atlantic Street Center hosted an Internet Safety workshop with the Horn of Africa Services and the Digital Connectors group from the Seattle Metro YMCA for parents already interacting with the Internet, at least through their children. We were invited to attend the workshop and integrate information gathering with the Internet Safety presentation. A modified focus group was conducted, and a few brief surveys were completed.

With the help and support of the Seattle Housing Authority, The Horn of Africa Women's Alliance, and Neighborhood House, the third event gathered members of Seattle's Somali community from all around the city for a focus group held at the Elizabeth House in the High Point area in West Seattle on April 10, 2009. Due to outstanding recruiting efforts by community leaders, this group had a tremendous response with more than 60 participants, well beyond the expected 10 to 12. With the impromptu facilitation support provided by the same community leaders, three somewhat different groups were conducted with this large group of participants. Few of the women were able to complete the brief survey because illiteracy in the Somali language; however, they engaged enthusiastically in mutual interviewing and note-takers worked diligently to capture the conversations. The men did some mutual interviewing, but with more Somali literacy, some opted to respond to the interview questions independently in Somali. These comments were translated by Hassan Ward of the Horn of Africa Services. The survey and focus group findings for African immigrants from all sources will be combined in this report.

Nearly all of the survey participants indicated that they speak some language other than English at home, although six indicated that they also speak English. Five of these six were African Celebration attendees. Somali was indicated most often. Participants ranged in age from 18 to older than 65. About one third were in the youngest age group, 18 to 25, 40% were between 36 and 50, and 12% were older than 50. Just over half (56%) were employed and 22% indicated that they were unemployed. A quarter are students, often in addition to being employed. Two individuals indicated that they are disabled. Annual household income ranged from less than $20,000 (29%) to more than $100,000 (13%). Only attendees of the African Celebration reported incomes above $50,000. This group also has achieved more education, with about 80% reporting at least some college and half reporting at least a four-year degree. About one-third are in the process of obtaining more education.

Summarizing, the African Celebration attendees seem to be more established, with more (and increasing) education, higher incomes, more employment (70%), and more use of English. Responses from the three sources will be reported separately when they differ.

Technology Access and Use

Survey results show high levels of cell phone access (91%) and lower levels of access to other technologies. About three-fourths of the survey respondents have cable TV, and about two-thirds have a computer at home (but 70% *use* a computer), and only about half also have Internet access at home (though 63% *use* the Internet). A surprisingly low percentage have landlines (58%), which may partially account for the low rate of home Internet access, and a surprisingly high percentage have Internet access on a mobile device (19%). Overall, about 40% indicated having only a cell phone.

The most common uses of computers in these groups are to search the Internet (64%), find health or community information (both 36%). About six in ten use email – daily for about 60%. Not as many (43%) use email attachments. Among the computer users, 78% use a computer at home, 30% each at work or the library, and about 20% each at school, a computer or technology center, or at a friend's or relative's. Sixty-three percent have high speed access, including cable Internet (38%), DSL (8%), WiFi (13%) and premium/business class (4%). About 30% have dialup access.

Different rates of technology adoption were seen in the three groups, with the more educated, more employed, more English proficient, higher income The African Celebration attendees consistently reported having more access. Specifically, respondents in this group are more likely to have a computer (90% vs. 52%) and the Internet (100% vs. 43%) at home, and are less likely to say that they don't use a computer (0% vs. 32%). They less likely to have a dialup connection (20% vs. 36%) and are more likely to search the Internet (91% vs. 50%), shop online (55% vs. 14%), and get information about the community (64% vs. 23%). They are also more likely to use computers at work (50% vs. 18%) and nearly all check their email daily (91% vs. 40%). One third of the other two groups say they never check it compared to none of the African Celebration participants.

Further, the participants who attended the High Point focus group have the least access to technology, with less cable access (50% vs. 86%), less Internet access at home (33% vs. 57%), and less land line access (42% vs. 67%). They are less likely to find information online about local businesses (9% vs. 36%), health information (9% vs. 45%), or about their community (0% vs. 55%). They are less likely to have computer access at work (0% vs. 47%), at the library (10% vs. 41%), or at a community center or technology center (0% vs. 29%). Among those with Internet

access, the High Point group members are most likely to have dialup access (63% vs. 13%) and least likely to have cable Internet (13% vs. 50%).

Mutual interviewing in the High Point group confirmed that about 60% of the participants have used computer for at least a year, with about half reporting that they have a computer at home and about 40% saying they use one at a different location. Most (86%) of those without a computer at home say they *want* one. One-thirds of those *with* one at home say it is not enough for their needs, and about 60% of those who use computers at a different location say those are not enough for their needs. Participants identified the library and community centers as places to access computers, but added that it's difficult because of not being able to use it individually. One person said they access computers via their phone. One person offered the estimate that half the people use computers at home and at the library. Several responded to this question by asserting that they need a computer. When asked what's stopping them from having a computer, one participant wrote, "I don't have a lot of things." Others identified lack of education or not enough money.

Paraphrased Comments

I don't know how to use it but I want to learn how to use the computer one day.

We like to use the computers so we can learn more informations

I will learn everything going on in the world
It will help educate me and help me with school work

It is good because it eases learning when you're at home. You can follow up with news, you can apply for work, and you can use it to take classes.

Computers are great and helpful. I use them for homework, email, chat, messenger. I get good grades because I have a computer, to research information. I personally think it is important for children or and adults to be able to use computers

I would love to use it since it fulfills a need (Translator: he/she is yearning to have one)

Half of the computer users in this group say they have problems using computers. One person clarified this by saying if it's written in his language, he does not have a problem with it.

Nearly all (93%) of those who do not use computers, want to and think they are missing out without access, with about 60% agreeing that they have trouble getting the information they need, staying in touch with friends and family, and just getting things done. Two participants did not feel that they had trouble functioning without computers because they get word of mouth news from friends and neighbors.

Mutual interviewing: Participants identified a number of valuable uses for computers, including finding information or learning, including access to ESL education; keeping up with the news; helping children with homework or being able to check on grades; looking or applying for

work, or acquiring needed job skills; communicating with friends and family, including those overseas; family life skills and finding family resources; paying bills online; conducting business from home; getting directions; shopping online; entertainment, or simply surfing the Internet. When asked to identify the best things about using a computer, the men responded that it would permit them to find a job, make a living, use it as a tool to study, keep up with news, find a used car, or watch sports.

Paraphrased Comments

I'd be on the same level with the world (Translator: meaning he/she will be on par with others)

Survey participants were varied in what they would be willing to pay for fast (or faster) Internet service. Responses ranged from nothing (about a quarter of respondents) to $40-$50 (one respondent), with about half of the responses falling between $5 and $20 per month. None of the African Celebration participants said they would pay nothing, compared with 38% of those in the other groups.

Half of the survey participants in each group were satisfied with the reliability of their Internet connection. Groups differed on their satisfaction with other aspects of Internet service. The African Celebration attendees, most of whom reported high speed access, were satisfied with speed (80%) and customer service (75%), but not cost (43%). The Internet safety group was also more likely to have high speed access. Half of this group was satisfied with the speed of their connection, but not with the cost (29%) or customer service (20%), perhaps related to low level English skills. Most of these respondents in these two groups identified a lower price as the one thing that would most improve their Internet service. High Point respondents were most likely to have dialup access, so although more satisfied with the cost (71%), fewer were satisfied with the speed (40%).

Paraphrased Comments

Some concerns is that I don't know what my children are learning on the computer. I have a problem with the computer. I don't know how to keep my children out of the bad things in the computer and because I don't know how to use one. I don't know how to use a computer at all.

Children and adults are using computers at home. It's going good and sometimes it's bad at home. MySpace is the only one thing I hate about the computer.

Yes and no. People do and don't have access to the computer. No because money, some people are cutting off the Internet because of the cable, speed, etc. Problem it creates with Facebook, MySpace, strangers.

Parents don't understand how to use computers. My son says he's working on homework and I don't know how to find out what he's doing. It's a language problem.

When people get too involved with the Internet, they don't do anything else – don't go out and play.

The Internet safety group identified a number of concerns related to using computers. Parents were concerned that their children are looking for – or being confronted with – negative or inappropriate content online. But the parents feel that with their own low skill level with computers – and in some cases, their low English skill levels– they cannot adequately monitor their children's use and keep them safe. Parents voiced a considerable amount of concern about

MySpace and other social networking programs, afraid that these sites, and for some, access to email, pose a risk to their children that as parents, they are not equipped to manage. Other concerns included the cost of computers or Internet access, a slow connection, and the complexity of using the Seattle School's homework information website, The Source. Participants also voiced concerns about other aspects of Internet safety, such as identity theft, and viruses. Some were also concerned about their children spending too much time on the computer and not spending time outside playing.

Suggestions for addressing these challenges included access to computer classes for the parents, which would help them keep track of what their kids are doing, limiting the children's usage on the computer, and learning to lock out specific sites that provoke concern among the parents.

Goals and ambitions about computer use

Mutual interviewing: Participants identified a number of ways they'd like to expand their computer use, starting with learning to use computers or maintaining skills they have. Participants also indicated wanting to keep up with the news, and staying in contact with friends and family, including those in Africa. Several mentioned using the computer to get a job or developing job skills by learning how to use a computer. Some mentioned using it to keep track of their children's school work or to help with children's homework. Some mentioned a need to learn English. Participants asked for both ESL classes in the community, and for computer classes.

Paraphrased Comments

I know how to enter the net but don't know how to get information

Computers are for the younger generation for immigrant parent are very difficult to do so.

What would enable to do that is get help from the government and open classes that can also teach older people

I would like to chat with my people in Africa

I don't have a lot access to information, all information are in English

Concerns about Access

Mutual interviewing: The two most frequently mentioned barriers were: not knowing how to use computers; and the cost of computers and Internet access. Participants mentioned that either of these could prevent access. Some focused on not knowing how to use a computer even if one has the means to buy one, while others mentioned not having the means to buy a computer, even knowing how to use one.

Participants reported that many people don't know where to find accessible computer classes and suggested offering classes in the community. Some specified a women's only class, with a female instructor, perhaps with one-on-one assistance. Some suggested combining ESL with computer training and others noted the importance of having the training in the language of the learners. Others suggested providing donated computers or making low cost computer available, and other identified a need for free Internet access. One participant asked for more content to be translated into Somali.

One participant suggested going to the community college for training and a few suggested the public library, but most said they did not know where they would go for help.

Paraphrased Comments

First help learn English. After that learn computer skills and that will make our life easy

I think they are missing something because there is a lot of things that you need from the computer but you can't even find out

Some people can't afford to buy one or maybe they just don't want to own one.

Yes, left behind on information, education

We don't know how to use it, that's why

They are missing communication especially us as Somali. We use to computer to hear the news from Somalia

What would help? To get more help from someone that knows more than you

Participants want to learn to use computers and the Internet for both specific and general purposes; and some community members are willing to teach others. Remaining barriers include access to computers and the Internet, knowledge of English or the availability of Somali content, and lack of literacy.

Communicating with Government

Survey: Taking the three groups together, participants most often indicate that they prefer to make contact with the government on the web or via email (58%). This preference was much greater among the African Celebration attendees (82%) and much less preferred among the participants in the Internet safety workshop (30%). Next most frequently nominated was in person contact (35% overall), but this option was selected by none of the High Point participants. The High Point participants were more likely to select the telephone (60%), preferred by about half as many of the other groups. Writing a letter was selected by only 10% of the African Celebration attendees, and by about half of the groups.

Survey: Overall, about half of the survey respondents selected giving information and feedback to the city via email or an online survey, and about 30% overall (including none of the High

Point group) opted for attending a community meeting. Between 10% and 20% in each group were willing to call into a meeting or attend a city-wide meeting. None of the participants selected "none."

Participants indicated the most interest in getting information from the TV news (68% overall), by notices in the mail (36%), from the city's website (32%), from the Seattle Channel (28%), or from the newspaper (24%). The High Point group provided a different profile. These participants selected the TV news (80%), the City's website (60%), and 20% each selected email, the Seattle Channel, and recorded telephone or cell phone messages. None of the High Point group selected the radio, the newspaper, notices in the mail, or text messages. The other two groups selected the radio (25%), newspaper (30%), notices in the mail (45%). Few participants overall wanted to receive text messages from the city (12% overall), all in the African Celebration group (27% of this group).

Just under half of the survey participants have seen the Seattle Channel, mostly on Cable. Many fewer (30%) have visited Seattle.gov. Few respondents gave answers to the question of what they already know about the Seattle Channel or Seattle.gov. Three people noted that they are informed about the city and its government from these sources, or that they watch Seattle-based news. Others mentioned various new sources, such as CNN, Fox, and MSNBC. Participants were able to identify many things they'd like to see on the City's website, including:

- Job announcements
- Links to languages other than English
- Information to help with homework
- A way to learn more about computers
- Summer and after school activities for children
- Support for family business
- Monthly community meetings
- Resources
- Sports
- Obituaries of fellow community members
- "Pictures that talk and interpret and explain it"
- "I would help an individual who doesn't have competence with regard to the Internet."

When asked what they want to know more about, participants most often said something about their community – learning about others in their community, exploring the how well the community is, and community level events and information. Some participants asked for more content in the Somali language, including the Somali channel and Somali news journals, and others asked for ways to learn English, especially pronunciation. Participants asked for access to education, in general, and computer training in particular. Participants also expressed interest in global news and sports.

Participants were fairly evenly divided in response to the question about how they'd like to receive information. Three asked for a phone call; four asked for email. Two specified "no text." Some participants noted explicitly that they would like more human contact and others mentioned getting information through the community center or from community visitors.

Korean immigrants focus group

Summary: The Kawabe Memorial House provides low income retirement housing for Korean and Japanese seniors. Only two of the focus group participants had any English proficiency, and one of these commented that the lack of English skills among the other participants was disabling for them. Correspondingly, participants expressed interest in getting news and information through any medium, as long as it is in Korean.

Although these participants were selected because of attending a computer class in the building, fewer than half identified themselves as computer users in the brief survey and only three indicated any computer skills. Two mentioned having computer in their rooms, but these are English language computers and their owners cannot use them because of the language barrier. Additionally, although the Kawabe House has a computer lab, only two of the computers are Korean computers, not enough for the needs of the Korean residents. Further, participants note that Korean residents in the building next door have no access to Korean computers at all. As in other groups, one participant in this group also made the point that it is difficult to learn to use computers without being able to practice the lesson at home.

Participants were clear that they want to become computer users, feeling that they are missing out or beingleft behind without access; and they were clear about what they would like to use a computer for, including getting quick information and news in Korean; staying in touch with relatives overseas (while saving money on expensive telephone calls); keeping their minds active and healthy; learning about the world; and even to learn English. Barriers include not having adequate access to Korean computers, limited hours of access to the computer lab in the building, an insufficient skills to use computers. Participants also voiced concerns about computer viruses.

These participants prefer to make contact with the government and get information from the government through the postal mail. Some expressed interest in talking with someone from the City in person. Others mentioned the TV news as a good source for City information. In conveying opinions to the City, four selected an inperson focus groups and one wants to write to the Mayor in Korean.

A focus group with 11 Korean residents of the Kawabe Memorial house, and two bilingual Korean note-takers was conducted on April 11, 2009 at the Kawabe House. Twelve participants and note-takers also completed a brief written survey. All the participants were selected because of their participation in a computer class offered at the Kawabe House. Most did not understand English. With only two translators, we created two groups and used a modified method of mutual interviewing, followed by two concurrent and separately conducted traditional focus groups. In the introduction, participants indicated that they would be eager to receive text messages from the City, as long as they are in Korean.

Seven women and five men completed a survey. Three-quarters of the participants were 65 or older, and the other three were between 51 and 64. Six indicated that they were retired; two were homemakers, and two were unemployed. Educational achievement was varied, with one person indicating less than a high school education and another seven (58%) reporting high school completion. Two had some college or a two-year degree, and two others had completed a four-year degree. None reported income.

Technology Access and Use

Survey results show that about one-third of the respondents have a cell phone. Most (82%) have cable TV, only two say they have a computer at home. In discussion, participants explained that these two in-room computers are not used because they are not in Korean. None have home Internet access either via computer or via a mobile device.

Paraphrased Comments

One person using computer can get all information from world – Japan, Russia, Korea. Sit in front of computer and look into the world.

When a person uses the computer, it helps with dementia, keeps an active mind.

In *mutual interviewing*, eight participants indicated that they have used a computer for at least a year, consistent with their selection as members of a computer class. However, in the survey, only four participants indicated being computer users, assessing their skills as "none or not very skilled" (7) or "Know what I need to know" (3). Three survey respondents indicated that they use email (without attachments), checking it daily (1) or less than weekly (7). Only one said she or he uses the Internet. Two people said they have dialup Internet access, and two said some other access (not DSL, cable, or WiFi).

Eight people responded to the *survey* question asking how they use computers. Three of these checked the box indicating that they do not use computers. Four said they search the Internet, and one each indicated shopping online, finding information about local businesses, about health, or about the community. In *mutual interviewing*, participants said that computers are good for almost everything in daily life, including getting quick information; getting news, including reading the Korean newspaper online; staying in touch with relatives overseas (and saving money on expensive telephone calls); organizing medication information for the residents and for emergency personnel; and for entertainment and remaining mentally healthy. Some mentioned ordering from Safeway online, saying that only one person in their building does that and the others do not know how. One person mentioned using a computer to learn English. When asked what they like best about computers and the Internet, participants mentioned email, the Internet, news, and "lots of information in a speedy way."

Survey: Few respondents answered the questions relating to satisfaction with their Internet provider, presumably since most don't use the Internet. However, among those who answered, three of five were not satisfied with the speed of their Internet access, the three who answered were satisfied with its reliability, and two of the three who answered were not satisfied with the cost.

In discussion, participants explained that Kawabe House provides the space for a computer lab belonging to a Japanese group, on the condition that the Korean residents can also use it. Two of the computers in the lab are Korean, too few, according to these participants. One person commented, "We use the Korean computers in the lab, and then forget what they learn when we go back to our rooms." In the *survey,* three people indicated that they use computers at home, one indicated the library and two each checked a technology center, and some other location.

Goals and ambitions for computer use

In mutual interviewing and in discussion, participants were clear that they want to become computer users with most feeling that they are missing out by not having the skills or the access to get online. Most participants agreed that they want easy access to a Korean computer, including in their own rooms, so they can learn and then practice and eventually have access to all the information that the Internet offers; a few thought they were too old or that they do not need computer access.

Participants who thought of themselves as non users look forward to being able to email with family; get the news; and have some fun in a way that is also good for their health.

The barriers that these participants identify are not having adequate access to a Korean computer – the hours of access to the lab in the building are limited – or the skills to use it. Some voiced concern about computer viruses.

Paraphrased Comments

I'm not that good at computers – I'm basic.

With Korean language, I will learn better; need a Korean computer.

I want to know many things about computer.

Fun and good for my health and hobby.

I will be behind in the modern high tech world.

I am at an age that I don't need computer.

If I have a computer, I'll become more knowledgeable. At night I will sit on the chair and look out at all the world. And I'll be able to see events in Korea – want to see developed country. Will improve vocabulary, will help not to become Alzheimers.

Most of the participants (83%) indicated that they have taken a computer class and that it was useful and that they want to take another.

Concerns about Access

In discussion, these participants indicated that even though they have very limited access to computers and the Internet, the elderly Koreans living in the building next door have no access at all.

Paraphrased Comments

If you would please, I want to have personal tutoring

I need Korean instructor for computer class

People are really disabled by their language.

Four groups doing email class right now. Very helpful. We repeat the class to learn it better.

Participants explained that an English-speaking volunteer currently teaches the computer class and they thought they would learn better if their teacher could speak Korean and teach them on an accessible (Korean) computer. Participants would especially value in person instruction so they can ask questions. One suggested making 10 Korean computers available, either in individual rooms, or in a public room with more access than currently available. One asked for personal tutoring.

One participant remarked that the language barrier that these participants face is substantial, explaining that they are not able to navigate in the English-speaking world except to go to church and to the market. This person indicated that they are even unable to call 911 because of the language barrier.

It may be that once these seniors achieve online access they may next encounter a language barrier in the content they wish to access.

Communicating with Government

Survey: None of the eight people indicating how they prefer to make contact with the government selected "on the web or email." Four selecting writing a letter, three opted to talk to someone in person, and two selected the telephone. When asked how they prefer to give their opinions to the City on things they care about, most selected "other." Four selected an in-person focus group and two each selected a telephone survey and "none." In *discussion,* one person mentioned wanting to be able to email the Mayor in Korean.

Survey: None of the respondents have visited Seattle.gov and about one-third have seen the Seattle Channel, all of them on cable. In *discussion*, participants asked that City information be provided in Korean so that they could get help with a problem or read about good news.

Survey: Participants were consistent in how they want to get information from the city, with most (83%) indicating notices in the mail. Four selected getting city information from the TV news, two selected the Seattle Channel, and one each selected radio, newspaper and the City's website.

Discussion indicated that the most significant concern for these residents is the ability to use the Korean language, regardless of the mode of communication.

Chinese immigrants focus group

Summary: Participants in this focus group of Chinese speakers were diverse in age: some were parents of young children and nearly half were seniors. Note-takers summarized two significant barriers for technology access: 1) lack of English skills leads to a need for Chinese language computers and content translated into Chinese; and 2) the cost of home Internet access is prohibitively high relative to participants' income.

This group reported some technology access, with just over half reporting having a cell phone and cable TV, and nearly all having a computer and (mostly high-speed) Internet access at home (despite concerns about the expense). Most use email, though for most, not with attachments, and fewer than half check their email daily. Participants assessed their computer skill levels as low with the majority saying they have problems using computers, including: lack of access to Chinese computers; slow and expensive Internet access; insufficient computer skills without access to classes; risks to personal information; and after overcoming these barriers, participants remarked that the lack of translated materials on public or commercial websites prevent non English speakers from accessing the information. Most commonly, participants use computers to access the Internet, searching for health and community information, local and international news, and other information.

Only the community center provide Chinese computers, but participants noted that no one at the community center can teach them how to use it, the hours are too limited, and the number of computers is not enough to meet the needs of people wanting to use them. Those without enough access feel they are missing out and life is harder without being able to use a computer.

Participants want access to computers and the Internet, Chinese or bilingual classes to help them learn how to use the technology, and an opportunity to practice what they've learned. Some mentioned wanting to get news and other information online and others want to use it for personal purposes, such as sharing photos and paying bills online. Others were interested in improving work skills and some want to use the Internet to advance their education. Participants suggested that other community members would be interested in getting online if they knew they could communicate with the world more easily, get news first hand, and learn.

Most participants (two-thirds) want to make contact with the government on the web or by email, and many (42%) prefer visiting in person. About half want to give their opinions at a community meeting, and not quite as many want an email or online survey.

Participants would like the City's website to be in multiple languages and provide government news and information, and information related to education, health, ESL opportunities, and Chinese computer classes. They want local news, employment opportunities, public safety, health insurance options, and benefits information. Most participants (79%) look at the newspaper or TV news for information from the City, but more than half also selected email notices and just under half selected the City's website, notices in postal mail or the Seattle Channel.

A focus group with 13 Chinese residents and four bilingual Chinese note-takers was conducted on April 13, 2009 at the International District Community Center during the day. Fourteen participants and note-takers completed a brief written survey. Using a show of hands, most of the participants indicated that they are computer users and about three-fourths have a computer at home. Only about half have cell phones and few use text messaging.

In a debrief following the focus groups, the note-takers indicated that the translations of the written material seemed to have been done by machine, making the questions difficult for the participants to understand. Summarizing what they had heard, they indicated that the language barrier also creates a challenge in using computers so that participants specifically mentioned the need for Chinese computers. Another concern related to the cost of Internet access.

All participants indicated speaking Chinese at home. Nearly half (43%) of the participants were 65 or older, probably reflecting the midday timing of the focus group, though all the age groups were represented: one participant was between 18 and 25, two between 26 and 35, three between 36 and 50, and 2 between 51 and 64. Only one of the participants was employed; five (36%) were retired; four (29%) were homemakers, two were students, and one each was disabled and unemployed. Educational achievement was varied, with 29% indicating less than a high school education and another three (21%) reporting high school completion. Five (36%) had some college or a two-year degree, and two had completed a four-year degree. Income for most was low, with three-fourths reporting an annual household income of less than $20,000, and two others reporting $20,000 to $30,000. One reported an income between $50,000 and $75,000.

Technology Access and Use

Survey results show that 57% of the respondents have a cell phone and 43% do not also have a landline. Just over half (57%) have cable TV, nearly all (93%) have a computer at home, and almost as many (86%) have home Internet access. Only two participants reported having Internet access on a mobile device.

Most of the participants indicated that they are computer users (92%), with 85% saying they use email – 69% also use attachments. Less than half (39%) of the email users say they check their email daily. Another 31% check it a few times a week. The others check it weekly or less often. *Mutual interviewing* yielded similar results, with 85% saying they have used computers for at least a year and the same percentage saying they have a computer at home.

Of the 10 who described their Internet access, eight indicated high-speed access. However, seven selected "Cable," and four of these also selected "DSL." Some participants may have been confused by the written question – perhaps due to not having a clear understanding of the technology – when asked about their skill level with computers, all the respondents selected either the lowest skill level "None or not very skilled" (55%) or the second step, "I know what I need to know" (45%) – or due to problems in the translation. None reported having premium access and two use dialup access. Survey participants were varied in what they would be willing to pay for fast (or faster) Internet service, with two saying they would pay nothing and another two selected less than $5 per month, one selected $10 to $20, four selected $20 to $30, and three selected more than $30 per month.

Just over half (57%) of the *survey respondents* said they use it to search the Internet, and nearly as many said they use it to find health information (50%), to get community information (50%), find information about local businesses (43%) and to shop online (43%). Not as many use social networking sites (21%) or sell goods or services (7%). In *mutual interviewing* eleven participants mentioned using the computer to find local and international news, and health news. Four said they use computer for entertainment, such as watching movies online and email. Some like to use computers to get directions, look up words, send photos, or make video calls. Some mentioned that they best like to visit Chinese websites.

Survey: Respondents were mixed in their satisfaction with several aspects of their Internet service with 60% indicating satisfaction with the speed of their connections, 64% with its reliability, and 75% were satisfied with the customer service. However, only one quarter were satisfied with the cost of their Internet service. When asked what one thing would most improve their Internet service, seven people (60%) selected price; three (30%) selected speed, and two selected reliability. None selected customer service. M*utual Interviewing* confirmed that participants are dissatisfied with the slow speed and high cost of Internet access.

Survey: The most common location for using a computer in this group was at home (92%). In *mutual interviewing*, most (83%) said they use computers in some other location as well, and for one-third of these, these computers do not meet their needs. About one-third (31%) selected school and about one-quarter (23%) selected the library. Fewer (15%) selected a friend's or relative's, or a community center, and only one each selected work or a café or restaurant. In *mutual interviewing*, some mentioned that the library does not have Chinese computers, which presents a barrier to these residents. Three of the participants reported that they do not have a computer at home to use, so they use the computers at the community center. However, the hours for the computer center are limited, no one is available to teach them how to use it, and there are not enough computers to meet the needs of those wanting to use it. In addition, these participants reported that the speed of the Internet access is too slow. Those with home Internet access find it too expensive, agreeing that they could pay between $35 and $40 per month. However, some expect to pay less than that and they expect higher speed.

Goals and ambitions for computer use

Mutual interviewing: Participants want to become more proficient with computer and the Internet in general, and they want to learn to get news and other information online, and on a more personal level, they would like the opportunity to learn to use email and send and receive pictures, and pay bills online. Several mentioned wanting to improve their work skills, their education, and wanting to advance their personal interests. One person, just beginning to use computers, mentioned a goal of learning to chat with her friend and discover more about the world.

Paraphrased Comments
Gmail, research, learning ESL system. I'm studying computer classes in library and community center.

I would like to improve my education in order to search where I want to get more information which I'm interested in the field

Most of the participants (60%) indicated that they have taken a computer class and two-thirds of these reported that it was useful. Most of the participants have taken computer classes at the Chinese Information and Service Center (CISC), and/or the library. They reported that they learned basic skills about the computer and using the Internet.

All participants reported an interest in taking classes in the future, though a few said that in the past they have been too busy with young children at home, and some mentioned not having a computer or much opportunity to practice.

Participants believe that other community members would also appreciate the opportunity to learn to use computers to be able to access education, the news and other information that is personally interesting to them. Participants added that to achieve this, it would be necessary to have access to low cost Internet service, and low cost classes.

Participants noted that to be able to do these things, they need a way to learn, access to a Chinese computer, and a fast, stable Internet connection.

Concerns about Access

Mutual interviewing: The barriers identified by participants include the lack of home computer access, coupled with the expense relative to the low income of the community members without access, lack of familiarity with computers or the Internet, coupled with a lack of training to become familiar, especially for seniors that live alone, and not knowing English, the language of most public access computers and most available computer training.

Paraphrased Comments
Older people don't know about computer, and there are nobody to teach them because they live alone

Computers are expensive (people don't speak English receive low salary so that computers are expensive for them)

Participants thought other community members might want to begin to use a computer if they knew they could use it to communicate with the world more easily, and specifically to talk to friends and get the news first hand. Some emphasized that computers are attractive to use because it is easy to get information, fast. Others thought community members would be interested because of the opportunities to learn with computers. Some suggested more training

in specific applications and simply letting people know about the interesting information and resources available online.

Speaking about their own access, the three without home computers say they want one, and two with a home computer say the one they have is not good enough. Three say they feel like they are missing out and life is harder without being able to use a computer, so they would like to learn. One person said he or she did not want to become a computer user. Participants who are not currently computer users said that it's hard to learn how to use computers if nobody is available to teach them, and that they don't understand English, so their options for learning are limited. Note-takers added that because many seniors now live alone without their children available to help them, the community must step in.

Paraphrased Comments
I wish I can get free Internet access in order to make lower my home expense… and we will use often the Internet

Nearly two-thirds (62%) of the computer users said they have problems using computers and the Internet, pointing to the lack of translation in Chinese, slow and expensive Internet access, and the lack of anyone who can teach. Some mentioned their concern about the lack of protection of personal information and one simply said that he or she cannot understand how a computer works.

The main barrier to computer and Internet use identified by these participants was language. Participants noted that websites, local and government, are not available in Chinese. They added that translator software provides limited word-by-word translation which makes the meaning difficult to discern after translation. Thus, even those with access to the Internet now are still unable to benefit from it because of the language barriers. Thus, participants described two tiers of barriers: at the first tier, lack of exposure, lack of training, the high cost of Internet access and home computers contribute to an initial lack of access that prevents some community members from getting online at all; at the second tier, content in English only prevents non English-speaking community members who have overcome the barriers in the first tier from accessing content.

Participants suggested making free or low cost multi-language classes available through community centers, with careful attention to scheduling so that the classes would not conflict with the work schedules of community members, and perhaps offering different classes for different age groups; creating more places with multi-language public access computers, that are open longer hours; providing multi-language options for software and websites, especially government websites; and making computers cheaper. Some suggested relying on young people to provide training.

Communicating with Government
Survey: Two thirds of the survey respondents prefer to make contact with the government on the web or by email, and 42% prefer to go in person. One-quarter prefer to write a letter, and the fewest (17%) selected using the telephone. When asked how they prefer to give their opinions to the City on things they care about, half opted for attending a community meeting, and 43%

selected email or participating in an online survey. Thirty percent said they'd prefer to participate in a telephone survey, and 21% selected an in person focus group or a short text survey. One each selected attending a city-wide meeting, participating in a discussion on the Internet, or nothing at all.

Survey: Three-fourths say they have visited Seattle.gov and about as many have seen the Seattle Channel, with about 70% specifying that they saw it on cable. In *mutual interviewing*, participants mentioned that they find local and international news, government news, immigration information, and information about the economy on the City's website and cable station. They also mentioned that it shows them how to take a bus and how to make weather repairs. However, participants commented that not much of the content is available in Chinese. Participants named some of what they wanted to see on a multi-language Seattle.gov website, including:

- Government news and information
- Society workshop
- Education information
- Health information
- ESL opportunities
- New policies
- Updated information
- Society workshop
- Computer classes available in Chinese

Participants want the Seattle Channel and Seattle.gov to include local news; City policies; employment opportunities; wealth fairs; traffic; more information about people, and public safety; and health insurance options and welfare benefits for low income people. They would especially like this information in Chinese.

Survey: Participants were varied in how they want to get information from the city, with most (79%) indicating the newspaper or the TV news. More than half (57%) asked for email notices; and 43% each selected the City's website, notices in the mail, or watching the Seattle Channel. Fewer selected the radio (21%) or text messages (7%) or recorded telephone or cell phone messages (7%).

Mutual interviewing revealed again that the main concern of these participants is getting information in Chinese, whether by email, text messaging, or any other medium.

Graduate students focus group

Summary: About three-fourths of these students are cell phone only users. All have a computer at home and nearly all have high-speed Internet access as well. All check email daily. Nearly all said that their current computer is enough for their needs and a few mentioned wanting a newer computer with a faster connection, better speed and reliability, more memory, and something lighter and better for multimedia. Most are satisfied with the speed and reliability of their Internet service; fewer are satisfied with the cost or the customer service. Some suggested considering Internet access a basic utility. Despite the satisfaction with speed and the relative dissatisfaction with cost, students still said they'd pay between $5 and $50 per month for significantly faster service.

Nearly all use computers to search the Internet, shop online or use social networking sites. Almost as many use the Internet go get information about their community, local businesses, and fewer, about health information. Cell phone only users were more likely to attend an online class. Participants most commonly mentioned using computers to get quick and convenient access to information, for work, entertainment, or daily living. One interviewer asked her partners to imagine and comment on their life without computers. Interviewees used worrds like, "disaster," "constricted," "insane," and "cry" to describe their imagined lives. Participants agreed that nonusers are missing out on important benefits of access and are being left behind in access to the most up-to-date information on jobs, education and health; information in general; entertainment and pop culture; communication; news and information; and convenience.

When these participants were asked where they do most of their computing, their answers turned to the portability of their personal computer, rather than to public access computers. Participants identified a number of disadvantages about public access computers: they cannot keep up-to-date; the environments are noisy, distracting, and unclean; the time limits are too restrictive, especially considering their slow Internet speed; lack of privacy for financial or health information; too few computers, so the waits are too long; and you can't work in your pj's.

Participants consider themselves to be proficient users, with as much access as they want (with some identifying "computer fatigue" or too much use). Many still have computer learning goals but are not sure how helpful classes would be for them. Several said they would teach themselves new skills, for find a younger person who already has the skills and ask for help.

For others, participants suggested providing more public access computers, including some that can be privately owned, making WiF more freely available, promoting the benefits of computer and Internet access, and providing instructors capable of teaching different populations. Lack of skills or knowledge, sometimes associated with concerns about viruses, spam, or accidental exposure to pornography was the most frequently identified barrier presumed to affect unconnected community members, followed by lack of access and personal issues. Participants suggested more useable technology, addressing the safety concerns of nonusers, and providing a training program in locations that the target community already uses, with the capacity for a

person to be able to respond quickly to the questions of learners. Additionally, participants suggested supplying staffing at public access locations so that new users can have their questions answered promptly.

Most particpiants (79%) want to make contact with the government on the web or via email. Cell phone only users were consistent in this view (90% vs. 44% of those with a land line). These participants want to give their opinion via an email or online survey (87% overall, and 93% of cell phone only users).

Participants developed an extensive list of what they'd like to see on the City's website, including a calendar of events, customizable by neighborhood, incluidng enteratinment and community involvement opportunities that would bring people together. Other topics included a wide range of local neighborhood information and events, information about transportation, voting, city business and business with the city, a forum for citizen feedback, bills and policies, jobs, and upcoming issues that are *relevant to me*. Several asked for contact information, including emergency numbers and ways to contact City staff members and local politicians.

About half of the participants opted to get information from the City via opt in and tailored, short, infrequent, and important email. About as many selected the newspaper and the City's website. Some participants emphatically rejected ideas that others preferred, indicating the diversity of personal preference and the importance of retaining a variety of communication options.

Participants offered several ideas to help people become comfortable receiving electronic information from the city, with the ability to contact a person for help with the technology as a central piece of several suggestions. Participants also suggested videos of upcoming events or other universal design strategies to make the information accessible for people with limited English literacy.

A focus group was conducted with 44 UW graduate students and two co-facilitators enrolled in the spring 2009 UW program evaluation class, Public Affairs 526 on April 15, 2009 at the University of Washington. Thirty-nine students, 26 women and 13 men, completed a brief written survey. Participants engaged in the planned focus group activities – a dynamic method that relies on mutual interviewing among the community members – with apparent ease and interest. A well educated group, all had completed a four-year degree, and all were engaging in post graduate work. Most of the participants (76%) were Caucasian, with two African American, one African, one Korean, two Chinese, and two Latino students, and one of some other ethnicity. Most (90%) of the participants speak English at home and the others speak Spanish (1), Chinese (1), Korean (1) and some other language (1). About one-third (31%) of the participants were between 18 and 25 years old, about twice as many (62%) were between 26 and 35, and the remaining three were between 36 and 50. Most of the participants (64%) identified themselves as "students," and the other 36% identified themselves as "employed."

About half (49%) of the participants reported an annual household income below $20,000, and the others ranged fairly evenly over the other categories up to $100,000 or more (11%).

Technology Access and Use

Survey results show that all of the respondents have a cell phone and 77% do not also have a landline. Analysis comparing the demographics, access, practices, and preferences of cell phone only participants as compared with other participants revealed few differences. Demographically, women in this group are more likely to be cell phone only users (88% vs. 54%). Other differences will be presented below. Just over half (56%) have cable TV; all have a computer at home and almost as many (97%) have home Internet access. More than one-third (36%) reported having Internet access on a mobile device.

Written Comments

I feel like it is ridiculous that we, citizens of Seattle, all pay such high rates for individual internet access when it (wi-fi) could be broadcast as a public good

Could it [WiFi] be considered a public utility?

All but one participant indicated that they are computer users (97%), and all report that they use the Internet, and email, with attachments. All participants check email daily. *Mutual interviewing* yielded similar results, with all saying they have used computers for at least a year and the same percentage saying they have a computer at home. Nearly all (88%) said the computer access they have is enough for their needs, with some adding that they need a new computer with a faster connection, better speed and reliability, more memory, a laptop with lighter weight or something better for multi-media.

None of the respondents indicated dialup access. More than half (56%) selected cable; more than one-third (36%) selected WiFi; and 13% indicated DSL. One reported having premium access and four indicated some other Internet access. Most are satisfied with all aspects of their Internet service, including speed and reliability (88% are satisfied with both), cost (76%), and customer service (73%). Despite this overall satisfaction with speed, 26% speed as the single factor that would most improve their Internet access. More than twice as many selected (64%) selected price as the one factor most in need of improvement. Somewhat inconsistently, even though participants are satisfied overall with the speed of their access, and relatively dissatisfied with the cost of their access, many (82%) indicated a willingness to pay between $5 and $50 for faster service. Well over half (63%) selected options between $10 and $30 per month. Many participants mentioned using their computers wherever they could find wireless access and called for more widely available free WiFi access.

Nearly all (95%) of the *survey respondents* said they use their access to search the Internet, to shop online, or to use social networking sites. Nearly as many (90%) said they use the computer to get information about their community or about local businesses. Two-thirds use the Internet to find health information. Fewer (28%) have contributed to a blog or wiki, or have attended an online class or webinar (26%). More cell phone only user have attended a webinar or online class (33% vs. 0%). Fifteen percent have use the Internet to sell goods or services online. In *mutual interviewing* participants described how computers were part of many aspects of their daily lives. The participants summarized the rest of the group as using computers for:

- Access to information / staying informed
- Distributing information
- Communication/ social networking
- Entertainment (photos, games, music, movies)
- Shopping
- Doing work/ work-related programs
- Staying organized (documenting information)
- Health information
- Daily needs (bills, banking)
- Organizing and improving efficiency
- Everything
- Communication
- Learning and education
- Employment searches
- Social networking
- Spell check

Review of notes from *mutual interviewing* reveals that the most commonly mentioned use is the quick and convenient access to information, for work, entertainment, school, or personal interest. The next most common use related to keeping in touch with family and friends or staying connected to the community. Interestingly, some cautioned about the risks of too much computer use – some of those comments appear in paraphrase at right.

Interview Notes
"Life without a computer…"
Useful for her studies; information; entertainment; fun on Internet – facebook, community with friends; easier to communicate for her with computer – access to family, friends at home country; work and study; look for an internship; send your resume cover letter… Life without computer?… A disaster, Internet makes life easier, [otherwise] messy/harder life

All questions about history, politics, anything can be looked up on Internet – e.g. schedule for entertainment, recipe; anything on Internet, much less educated without computers…no computer in your life – TV and phone only course of communication and news – feel constricted from lack of ease in getting information

I'd be insane without a computer – no way – no world for you without the Internet She'd cry without computers because her work is based on computer – less effective work without computer

If have a question about events, or going out (to dinner), can quickly access info; linking people; accessing community info; increases ability to be socially connected Access to news and news sources; email, social networking sites, convenience; everything!; good way to keep track of things; purchasing goods; banking; communicating; staying informed/news

Access to anything, anytime to answer questions, very useful for job searching

Without Internet, disconnected from world

Some also mentioned "computer fatigue," a condition some experience after spending too much time meeting computer-related demands that results in a reluctance to use the computer more.

Interview Notes
It's not good for social interaction, [we have] less face-to-face communication; daily go out to meet people, [there is] less chatting in person. We're losing it; [we have a] loss of writing.

A general remark made by many interviewees is that computers just make their lives easier, following with examples of school, work, personal interests, entertainment, or daily living. One interviewer supplemented the provided questions by asking the interviewee to imagine his or her life without computers. Notes from these interviews are included in the text box on the previous page. Respondents used words like "disaster," "constricted," "insane," and "cry" to describe their imagined lives without the support of computers and the Internet.

Survey: The most common location for using a computer in this group was at home (87%), although two-thirds also selected school, and more than half (56%) indicated their work locations. About one-third (31%) have used a computer at the library and about as many (33%) have used a computer at a café or restaurant. One person each said they've used a community center or technology center, and one person selected another location. In *mutual interviewing*, participants named a wide variety of places that they use computers, with many saying "anywhere." Most participants were referring to the use of their own portable laptop computers in multiple environments, relying on WiFi Internet access. Respondents were positive about using computer labs on the UW campus, and less positive about public access computers available to the general community through libraries or community centers.

Interview Notes
It's always pushing – there's always a gap because providers are always pushing up the need for speed and power. You can't go to the library because they can't keep up.

Public library – long line, you have to wait for people; slow access to Internet; computer in public library

Libraries are for low income

[Public access] computer runs slower – takes a long time → computer rage and frustration

Difficult, confusing, setup, not as easy to use as personal setup is

Overall, participants agreed that these computers are less convenient and less desirable to use for several reasons, including:

- Public access computers are usually not up to date because they can't keep up with the increasing demands of software and content providers
- Public use environments are noisy and distracting
- Time limits on public access computers are too restrictive, especially with the slow Internet access at many public access locations
- You can't work in your PJ's
- Public settings lack the privacy many prefer to access their financial information and to look up certain health information
- Public access locations have too few computers so the waits to use a computer are long
- Public access environments are not clean

Participants suggested several ideas for improving public access computer use, including the use of headphones, making more computers available with faster Internet connections, and better compatibility between the software available on these computer and other computers.

Goals and ambitions for computer use

Mutual interviewing: Participants consider themselves to be proficient users overall, with 36% rating themselves as skilled to "…figure out new programs as I need them," and 54% rating themselves as "Skilled (sometimes help others)." Three people rated themselves as "Expert" and one indicated "I know what I need to know."

Nearly all of the participants use a computer as much as they want (only one answer "no" to this question) and most (83%) have taken a computer class, identified as useful by 90% of the respondents. Participants mentioned learning to use computers at all stages of school, K through 12, at work, at a community college, and at the computer center at the UW. Topics include Apple basics, shortcuts, and compatibility; keyboarding and specific software applications, including the Office Suite, statistical software, Adobe Photoshop, web design, email, and how to make animation. About two-thirds said they would be interested in taking another class, depending on the relevance of the content. Several of these participant noted that after achieving a certain level of proficiency, they can learn as well or better by using online tutorials or other resources, or getting help from friends.

Interview Notes

People need public access computers to be easy and straightforward in order to use – quit trying to be flashy

Recycling of computers is getting better. Wireless connectivity is sporadic and unorganized; virus protection should be tax deductible - support a standard, city-wide program that would be cheaper to buy

[They need to] understand the utility of computers, what they can do for them; overcome technology fear… utilization → increased independence; free up time; stay informed and socially connected; social capital and increased opportunity; increases ability to navigate in the world. Need competent instructors who can teach different populations

When asked what they'd like to do with computers that they can't do now, few participants articulated unmet needs. Some skills mentioned include using iMovie, using Skype to make video calls; using database programs and accessing hard to find data; using HTML language; advanced Excel skills; using media production software; developing particular job skills; managing emails, using Photoshop; web design; and learning how to do hardware maintenance. Other comments related more to access than to skill, including faster Internet access to facilitate using the computer to watch TV and for other purposes, access to digital library resources, and more capacity on the computer to take advantage of Internet content. Two noted that they'd like broader access to information with some way of easily knowing what information is available.

Participants were asked what they thought others might need. One person observed that residents use computers to communicate with people in state government that it would otherwise be difficult to make contact with. Others were more general in their comments, identifying the need for more access to computers, including computers that can be privately

owned, more freely available WiFi to permit Internet access for all, communication of the utility of computers to populations where they are currently under-utilized, and instructors who are capable to teaching different populations.

Concerns about Access

Mutual interviewing: Participants attempted to answer this question for themselves, as well as for others who have less access. For themselves, participants mentioned "computer fatigue," from too much computer user at work or at school, and high cost of Internet access, asking for more widely available free WiFi access, and the ongoing need for upgrading computing capacity to keep up with the growing demands of computer software and Internet content.

Participants summarized the responses they received when they asked why people don't use computers or the Internet with this list:

- Lack of access
- Affordability
- Intimidated/don't know how
- Uninterested
- Don't need
- Learning disabilities
- Fear, overwhelming, unfamiliar
- Fatigue, costs
- Limited/controlled access
- Lifestyle choice

Interview Notes

Lack of understanding – intimidated (esp. elderly); Access; Cost-prohibitive to own; Unaware of capability

Lack of knowledge of technology and function of internet; Fear, ignorance

Slow connections cause frustration; Filtering on public access computers discourage use; Too much work time discourage personal use
Don't enjoy sitting inside; Extroverts; Job doesn't call for it; Grad. student can't afford one, can't fix it, so doesn't use it

Access for kids because it's excessively monitored, not even fun; Fatigue, lifestyle choice; Fear, intimidation, overwhelming, ignorance; No time to do the research to get to trusted sources

Review of the interview notes shows that lack of skills or knowledge and lack of access were the most frequently identified barriers. **Lack of skill or knowledge** was frequently attributed to intimidation/ fear/ discomfort in general or a specific fear of accidental exposure to pornography, exposure to viruses or spam. Others remarked that people who don't understand the usefulness of computers might not be interested in learning to use them. Participant thought that these barriers might apply particularly to seniors and other people who were not born into a technologically connected world. **Lack of access** was discussed as the expense of owning and maintaining a personal computer, the limitations of public access computers where participants find that access is difficult and limited in terms of time, filtering of Internet content, and the Internet connections are frustratingly slow. Participants identified **personal issues**, such as a lifestyle decision made by those who do not want access– or more access; the belief by some that they do not need access. Others suggested that for some, the amount of learning needed to become a competent computer or Internet user, or the overwhelming amount of information facing the new user,

perhaps with insufficient information literacy skills, may be discouraging. Two people mentioned that children's access is so heavily monitored and filtered that it isn't even fun anymore. This is an interesting comment in light of the apparently lower levels of technology use among the youngest survey respondents.

When asked what might motivate people not currently online to get online, participants' suggestions included communicating the value of access to those not yet online, providing training and support to help them learn to use the technology, and providing free or low cost, easy access to enough computers and the Internet so once new users clear the motivation and skill hurdles, they have the access to use the new skills. Most frequently, participants suggested letting non users know the type and extent of information available on the internet. Others emphasized the value of the Internet for communication, especially internationally, and social networking; for developing job skills; and for pursuing personal interests. Three participants noted that increasingly, non users are being forced to become Internet users as fewer resources are available in print.

A few participants suggested letting non users know how computers will make their lives easier and allow them to perform daily tasks more efficiently.

Other participants responded to the question by trying to identify barriers on the "supply side" of the relationship. One individual noted a need for better usability in technology; another suggested addressing the safety concerns of non users; and another urged that any training program incorporate a capacity for a person to respond quickly to the questions of learners. This participant may have also intended this suggestion to apply also to customer service units so that when any users, but new users in particular, approach the support staff with a question via any means, but especially via the Internet, that the support staff make a concerted effort to respond promptly.

Interview Notes

Access to information; Access to communication; Participatory culture; On-line socializing

Make it more affordable; More locations of computer and wi-fi

Give more info; Make life easier

News, local information; To connect w/other people (esp. internationally); Different software programs make hobbies or tasks more fun or easier; Less expensive would be better incentive to use

If people could easily have their questions answered; If they could learn things that interested them; If definitive answers could be provided

People are increasingly forced to do it; Easy access to classes; Information, especially w/diminishing print news

When asked what would help or make it easier for people to use computers and the Internet, group members produced this list:

- Classes with better publicity
- Public computers (good ones), perhaps at local businesses, not just libraries, with better publicity

- City-wide free WiFi
- Affordability
- Communicating value
- friends

Review of the interview notes shows that nearly all participants called for simple, appropriate, comfortable, accessible free or low cost computer and Internet training for people without computer skills. Similarly, they suggested providing staffing at the library and other public access destinations so that new users can get answers to questions as they begin to use computers. Additionally, participants called for easy access to computers, specifically suggesting putting computers in churches, cafes and other convenient locations where people gather anyway, and different ways of making personal computers affordable to more people, mentioning computer recycling programs and subsidization for people with low incomes. Access includes both computers and Internet.

Four participants called for more user friendly technology so that the learning curve is not so steep. Two individuals mentioned the need for attention to language.

When asked where *they* would go to learn how to use computers or the Internet, most participants said "school," not a surprising response for a group of students. However, nearly as many said they'd turn to friends, neighbors, family members or "a young person." Several also mentioned a community center or the library. Several indicated that once they achieve a certain level of proficiency, they learn well using Internet resources or tutorials.

Interview Notes

Major barriers for older, discomfort with keyboard and mouse; Teaching relationship with moving the object and what's on screen; Cheap free access

More, easier access; free wifi; staff in libraries who can actually assist people with computer questions. Increase access in South end

Classes in trusted places in community where people are already active

Access and skill; Classes; Language compatibility; Friendlier; Demographic (logs, etc.) focus; Connection to life, purpose

Classes for specific age groups – older people might be intimidated to take a class with younger more experienced

Make hardware and internet access more affordable; More locations of computers; City-wide wi-fi; Increase availability of education classes

Classes – inviting non-intimidating easy access; Free wifi for city; Computer recycling where people can donate old computers

Expanding sites where computers are accessible, i.e. only 1 hour and limited HS at library and slow; Increase quality and quantity

Most participants were unfamiliar with the computer centers around the city. A few ventured some opinions, including that they should advertise themselves more, that they need more flexibility in their time limits, easier printing, more computers so the wait is not as long, and more up-to-date computers, and staff available to help with computer-related questions. One participant called for public access computers in more informal spaces, such as cafes. One person noted that there are too many barriers to using the technology centers.

Participants agreed that non users are missing out on important benefits of access and are being left behind. The interviewers produced this list of responses:

- Missing most up-to-date info on jobs, education, medical information
- A larger array of information
- Some things are internet only
- Entertainment
- Job postings and job viability
- Communication
- Pop culture
- News/information
- Can be a time saver

Interview Notes

Don't use because: Access - not provided through work, haven't bought; Yes being left out; Lots of info online; Communication easy (email etc); Left out of conversation.

Proficiency – don't know how – need training; High cost of computers, internet, software, hardware; Yes, left behind; Seattle vs. tech city; Important info online: jobs, education, government updated

Old people don't know how to use; Afford; Kids log from parents/family; Even if can afford, don't know how to adapt to their needs; Yes, being left behind; Language – news from home country – less global perspective; Use older forms of communication; Miss out on the entertainment

Review of interviewer notes shows that the most commonly mentioned benefit of computers that that those without access are missing is access to quick, important and most up-to-date information. Also frequently mentioned was access to jobs and job application procedures; easy communication options such as email; job skills; international news, which might be especially important for immigrants; social networking; and popular culture.

Communicating with Government

Survey: The great majority of the survey respondents (79%) prefer to make contact with the government on the web or by email. This is even stronger among cell phone only users (90% vs. 44% of those with a land line as well). Twenty-eight percent prefer the telephone, 13% selected going in person (more of those with a land line – 44% vs. 3% of cell phone only users), and none selected writing a letter. When asked how they prefer to give their opinions to the City on things they care about, a strong preference (87%) emerged for an email or online survey, especially among cell phone only users (93% of this group vs. 67% of those with a land line). One person wrote in, "If given an online survey, I suggest real time tabulation of results for the public." Only one person indicated a telephone survey. Thirty-eight percent indicated an interest in attending a community meeting, 26% an in-person focus group, and 21% a discussion on the Internet.

Survey: Nearly all (90%) say they have visited Seattle.gov and fewer than half (44%) have seen the Seattle Channel (two-thirds of these have seen it on cable). In *mutual interviewing*, participants provided a great deal of feedback about the Seattle.gov website. Participants had less to say about the Seattle Channel and in discussion after this group's presentation, several participants were concerned that they had not been given the opportunity to give the feedback that they would be unlikely to watch the Seattle Channel regardless of the content. The interviewers responsible for this question produced this summary of information participants would like to see on the City's website:

- Community events
- Restaurants
- Research statistics
- Utility rates
- Citizen feedback
- Neighborhood crime statistics
- Updates issues relevant to me
- Announcement of town hall meetings
- Job listing
- Zoning info
- Public works planning/happening in my neighborhood
- Info community centers
- City council bills issues
- Transportation (routes, traffic)
- Emergency numbers
- Voting information
- Trash and recycling times and service information
- Know about your community
    - Social events
    - Personal enrichment
    - Networking
    - Volunteering
    - Community info
    - Significant buildings and development
    - Search by interest area, then find out where (neighborhood)

Interview Notes

Easy access to dept contact info; quick links to most requested info (even outside of city)

Show only events in the neighborhoods I'm interested in; Alerts about solid waste changes, recycling; Traffic interruptions; Weather forecast/current/historical data

Maybe have an option like "my seattle" so I could customize?

Jobs: office of Film/Music – updates; Sustainability issues; Calendar specific to her community for events; Council update feed

Single source for all bills

Community /neighborhood event; Neighborhood issues – concerns – link to all neighborhood assoc; Clear access to local politicians (school board, etc.); Upcoming issues – key concerns of lawmakers; Local govt should be farther ahead in providing access – increased access is necessary for a healthy democracy

Most customizable interface as possible Like iGoogle where you can make page outer to what I want.; Visual RSS feed.; Social networking, kinda of like a city government profile w/your info and others

Notice on upcoming community events especially anything requiring vote.; Also, easily accessible volunteer opps (on-call volunteer opps.)Not good enough update and info on volunteering currently

- By neighborhood information
- Council agenda items
- Neighborhood/community events

Review of interviewer notes shows that the most common suggestion was a calendar of events, customizable for the neighborhood levels and including entertainment, and community involvement opportunities and bringing people together. Many of the specific suggestions can be found in the text boxes at right. This group was also very interested n hearing about upcoming issues and agenda planning for the City Council, as well as city policy, laws, procedures, and decisions. (This group of Public Affairs students may have more interest in community policy making than other groups.) Additionally participants expressed strong interest in being able to get information relevant to *them*, about their own neighborhood, perhaps in a customizable format. Several also wanted information about transportation, including bus schedules; bicycle information; traffic issues; and access to traffic cameras.

Several participants mentioned wanting access to contact information to enable them to talk to a City staff member or a local politician. They also wanted emergency numbers easily accessible. Some wanted to see updates on city business including the progress of construction projects. Several were interested in information that would help with looking for a job, including a customizable job search page. Other suggestions includes news alerts and emergency information, such as how the City is responding to a weather emergency; a feedback blog where residents can explain how issues affect life in their community, and a regularly updated neighborhood blog; weather; attractions/ restaurants/ arts/ and culture – the information a visitor might want to see; data and information, including reports on city sponsored programs; social networking; volunteer opportunities; links to the most requested information, and links to each neighborhood association; information about people in the community, including candidates, and the agendas of local politicians; crime and safety; a listing of resources and community-based organizations within the City. Single individuals suggested posting coupons online; providing

Interview Notes

Bus routes; Weather; Maybe town hall meetings; Proposed legislation; City sponsored events

Updates for the issues most relevant to me (bicycle issues, things happening in my neighborhood, arts and culture); Upcoming town hall meetings or events

New development plans, policy changes, new activities; Would use for info about moving or visiting a city – jobs, sights, etc.; Services available to residents (utilities, etc.); Transportation info

Calendar of community events (free, farmers markets); Current proposals/initiatives; When city council seeks public input

Map with gradients (hills) with bike lanes outlined

I don't watch TV. Website – neighborhood blogs Key is that is regularly updated. Sites that don't update don't get traffic. ; Using internet to simplify the municipal government process so people can get educated about issues previous to vote

Calendar specific to her community for events, when the meeting is ahead of time; Clean up party events; Security issues

History of community, buildings &development; Heritage; People & activities, bringing people together

Blog on how issues of city are affecting community life

information about Seattle's history; zoning and development information; a central place to pay bills; sustainability issues; and comparisons to other jurisdictions.

When participants were asked what they already know about the Seattle Channel and Seattle.gov, no clear responses emerged. Several people mentioned job postings, and others mentioned it as a way to find out about City departments, including contact information, and to find contact information for council members. Some mentioned that the website is a good source to get updates on the Mayor's initiatives; to find out about neighborhood plans; to get information about adopting pets; and to find municipal codes. Two thought it provided information about gas prices. Some mentioned that the website is unattractive, looks dated, and is difficult to navigate.

Some noted the Seattle Channel carries public interest stories and city council meetings that the respondent described as "boring." Another simply described the Seattle Channel as boring.

Survey: Participants were varied in how they want to get information from the city. Just over half (54%) indicated email, with several qualifying comments. Several emphasized that it had to be an "opt in," system and tailored to their particular interest and above all, not convert to spam. Some specified that email would be acceptable of infrequent, short, and important – another suggested receiving weekly updates. One person specified "no email." About half each said the newspapers, and the City's website. About a quarter each said the TV news (28%), the radio (23%), and from other community members (26%). Twenty-one percent asked for written notices in the mail, and about as many (18%) asked for text messages on the cell phone (however many others emphatically rejected this idea), although one was open to real time text information for the bus that would tell the rider when to expect the bus. Very few (5% each) opted for recorded telephone messages or turning to the Seattle Channel. Several recommended providing an RSS feed option. Interviewers gave this summary:

- Email
- Only specific (very)
- Tailored
- Or not at all
- Self-subscription
- Text – no don't want to be bothered (emergency alerts okay)

Interview Notes

I would go to the website more if I found it more useful, user friendly, and pretty.

The internet – on websites, would like to find rather than receive info but would possibly sign up for very specific list-serv or alerts. Would need to choose more specifically.

Social networking sites; Local newspaper website (events calendar); Would seek specific info and then choose whether or not to receive email /mail about it.

No – intrusive – I don't want to use my cell for updates – prefer RSS

Probably no because it would depend on nature and frequency of updates. Would like info I choose but don't want a bunch of spam

No text messaging!; Too many emails and then interest stops; Weekly update instead daily

Good idea to get tailored email information

- Channel – community info, services available
- Most want to go to website rather than to receive
- Blog – citizens about how city issues affecting community
- No texts (unless infrequent and important)
- Email only if relevant (RSS feeds)
- Clarify points of contacts in w/in the city

When asked what could help people become more comfortable receiving information through an electronic medium, participants emphasized the importance of giving learners a way to contact a person for help with the technology, and then getting a quick response to their questions. This could be done by the telephone or through instant messaging – the key points were promptness and access to a real person who could help. Others remarked that the first step would be to help people who currently don't have access become comfortable with email and the Internet, returning to the suggestions of free and low cost computer and Internet access, an easy "non flashy" website, perhaps customizable, with the needed high quality information. One person suggested putting videos of upcoming events online, a suggestion that might benefit residents with limited English literacy.

Vietnamese immigrants focus group

Summary: This group was divided with some who had very limited English language skills and who seemed confused by the questions and the topics of computers, and others who were more comfortable speaking English than Vietnamese and were more technologically aware and connected. All participants have a cell phone and about one third do not also have a land line. Almost two-thirds have home computer and (mostly high-speed) Internet access. Most (81%) say they use email (but only about one-third use attachments and half check it daily), three-fourths say they use the Internet and only about half say they are computer users. These figures suggest that some participants do not recognize the hierarchical relationship between access to computers, the Internet, and email. Most participants gave themselves modest skill ratings.

Participants use computers to search the Internet, get health and community information, find out about local businesses, and shop online. They also mentioned using it to apply for jobs and look for ESL opportunities. Some use the Internet to keep in touch with friend and family overseas and use the Internet to make international calls less expensively, identifying the best thing as the fast, easy access to whatever information they need, allowing them to use the internet to learn, read the news, stay in touch and get directions. Some suggested developing a social networking site for Vietnamese people to draw community members to the Internet.

Participants are satisfied with the speed and reliability of their Internet service, but not as satisfied with the cost or thecustomer service. However, participants commented that they have dropped their Internet access because of it's too expensive and too slow.

This groups did not express the desire to gain access to computer or the Internet seen in other groups, but some participants seemed confused about the notion of computers and why they might be beneficial. This could indicate a greater lack of awareness in some segments of this community. Further study into the technology needs of this community might be warranted.

Some participants identified a number of specific computer-related goals and barriers that stop them from achieving those goals, such as not enough time or knowledge, inadequate hardware or slow and expensive Internet access. Participants suggested ways to make computers more accessible, such as providing public access computers, free, in person training in how to use them in more languages, and making computers simpler to use, possibly providing voice recognition software to reduce literacy demands. One person mentioned fears about security and identity theft.

Participants called for a calendar of events and activities on the City's website, and Vietnamese-specific information, perhaps through a link; Participants would like to see real time crime and safety information on the City's website, resources for low income families, ways to volunteer, information about the rights of people with disabilities, and information about computer classes

Participants asked to get information from the City via infrequent, opt-in email messages, keeping other options available for those without email access.

A focus group with residents of Vietnamese descent was conducted on April 16, 2009 at the Denise Louie Education Center with 13 participants and four note-takers. Sixteen participants and note-takers completed a brief written survey. Most of the participants spoke Vietnamese primarily, but some spoke English at home and were not comfortable speaking Vietnamese. Note-takers were bilingual. The English speakers formed two groups; the Vietnamese speakers formed the other two. Since this method relies on mutual interviewing among the community members, the language barrier interfered with certain groups interviewing one another. The problem was resolved with the bilingual note-takers serving as translators in "group" interviews when the Vietnamese-speaking and English-speaking groups interviewed one another, resulting in a series of small focus groups, rather than multiple mutual interviews. Although this solution was satisfactory, other solutions that might have resulted in an easier experience with more input from all community members include: 1) ensuring that participants all speak a common language; 2) conducting two parallel sessions, divided by language; or 3) mixing the tables so that both languages are represented at each table permitting participant to seek out compatible language partners in each interview partner selection process. Then the note-takers could facilitate each group's bilingual discussion after all the interviews were completed. Despite this challenge, participants engaged in the focus group activities and provided rich information.

Participants were diverse in age, educational achievement, and income. They ranged in age from 26 to one participant who was older than 65 years. About half (54%) were between 26 and 35, about one-fourth (23%) were between 36 and 50, and the others were older than 50. Educational achievement ranged from one person with less than a high school education, five (39%) who completed high school, 31% with some college or a two-year degree, and almost one-fourth with a four-year degree or more. More than half (58%) are employed, and one each was retired, a homemaker, a student, a working student, disabled, and unemployed. Of the people indicating annual household income, two indicated income of less than $20,000; three were between $30,000 and $40,000, three more between $40,000 and $50,000; two between $50,000 and $75,000; and one over $100,000.

Technology Access and Use

Survey results show that all participants have a cell phone and 38% do not also have a landline. Just over half (56%) have cable TV and a few more (63%) have a computer and Internet at home. Only one person reported having Internet access on a mobile device.

Only half the participants indicated being computer users, though 75% indicated using the Internet – and 81% indicated that they use email (although only one-third say they use email attachments). About half of the email users say they check their email daily and another quarter check it a few times a week. The others check it weekly or less often. All but one of those with home Internet access reported having high-speed access, specifically DSL (25%), cable (42%), and WiFi (17%). None had premium or business class access and only one used dialup access. Survey participants were varied in what they would be willing to pay for fast (or faster) service, with four (29%) saying they would pay nothing and another 3 (21%) selecting less than $5 per month. Two selected $5 to $10 per month; one selected $10 to $20, and two each selected $20 to $30, and $30 to $40.

Survey: When asked about their skill level with computers, nearly all the respondents selected either the lowest skill level "None or not very skilled" (38%) or the second step, "I know what I need to know" (50%). Two people ventured higher self-assessments with one selecting "I can figure out new programs as I need them" and another selecting "Skilled (sometimes help others)." No one selected the "Expert" option.

Twenty percent of the *survey respondents* indicated that they don't use a computer, and 60% said they use it to search the Internet. About one third said they use it to find out about local businesses, to find health information, to get community information, to shop online, and to use social networking sites. Two people (13%) use it sell goods or services. In *mutual interviewing* participants summarized by saying that they are good for everyday use, adding that they use them to shop online, download programs, apply for jobs and look for ESL opportunities. Others mentioned that they use a computer to email friends and relatives, and some use the Internet to call Vietnam. Participants mentioned reading newspapers online and using computers for entertainment, such as playing games, listening to music, and watching movies.

In mutual interviewing, participants noted that what they best like about computers and the Internet is the fast, easy access to whatever information they need, and that they can use the Internet to learn, to read the news, to stay in touch, and to get directions.

Survey: Most people are satisfied with the speed (85%) and the reliability (80%) of their Internet access, and they are less satisfied with the cost (63%) and especially the customer service (43%)[21]. When asked what one thing would most improve their Internet service, seven people (54%) selected price and surprisingly, six (46%) selected speed. None selected customer service.

[21] This figure may be deceptively low – only about half the respondents answered this question. It may be that those who felt dissatisfied with the customer service were more likely to respond.

M*utual Interviewing:* Some reported that they had dropped their Internet subscription because it was too expensive and too slow.

None of the non users indicated that they felt like they were missing out; however, some seemed somewhat confused about the notion of computers. With the apparently low but somewhat confusing survey responses regarding technology access, and the apparent lack of desire for more connectivity, further study into the technology awareness and technology needs of this community might be warranted.

Survey: The most common location for using a computer in this group was at home (81%). Other locations were not selected by many. Three each selected work, the library, and a friend's or relative's. One indicated school. In *mutual interviewing*, some mentioned that library's connection is much better than at home, and that the community center also has a faster connection. However, participants suggested that better parking access at the library and the community center would help make those computers easier to use. Others remarked that public access computing environments as too loud to concentrate well. They noted that the library works "OK," but that computers at work and at home are better. Participants expressed concern about Internet safety, worried about "hackers stealing my credit card information."

Goals and ambitions for computer use

Mutual interviewing: Participants said they want to learn to do web design, and they want to learn to Google better, and generally, better research techniques. One person said she or he would surf more, but there is not enough time, and another would like everything to be on one website. Another wants to learn to email, shop online, watch movies and learn to solve computer-related problems. Participants want more free services and resources, and support for genealogical research. Some mentioned wanting GPS tracking of sex predators and other information related to enhancing public safety.

Some participants indicated that they do not have enough time to pursue their computer-related goals, and some also noted they do not have enough knowledge. One commented on not having an adequate computer and having slow access – another mentioned the cost of access. One person mentioned concerns about security and identity theft.

Paraphrased Comments

I'd like to learn a few different software programs. I wish the Internet was faster and not so expensive.

More free classes offered in the community to help folks broaden their computer knowledge and make their lives easier – Software programs to help you start your own business and be successful.

Concerns about Access

Mutual interviewing: Participants suggested that some community members don't use computers because they don't know how to use them, they do not have a computer at home, and computers are too expensive. Some thought that others might be discouraged from learning because of security issues (such as hackers and viruses), or because they are just old fashioned. Participants also noted barriers due to language, intimidation, and age, saying that some community members might be too old to enter the technology age. Participants suggested having more languages available in the computers at public access locations.

Paraphrased Comments

People are afraid of hackers, scams - you hear about scams, like the person who ordered a phone but received a rock and couldn't return it. People don't want to participate because of that risk.-

Participants noted that people without access may lack up to date information and news, having to depend on children and others to keep them informed. Participants suggested that community members without home access who want access to computers and the Internet might rely on the library, community centers, schools, and family and friends.

Participants suggested that others might want to use computers if they knew they could keep in touch with family and friends, get information quickly and easily, including information about benefits, save time with daily tasks, like making appointments, getting directions, and paying bills. One person made an off-hand comment that although computers do save time, they are also time consuming. Others thought that a social networking site for Vietnamese people might draw community members to the Internet, as would the opportunity to learn via the Internet.

Paraphrased Comments

Website is simple, not too much word and link

Education on more privacy protection specially for people who don't know how to use them

They are a lot around, but getting an account to use might be daunting

I didn't know there were computer centers available

In addition to more training, described below in more detail, participants also asked for faster connections and lower cost for Internet access. One participant focused on specific types of content, such as music and news. The library was the most frequently suggested place that participants said they would go to learn to use computers. The community center, school, a friend's or relative's were also mentioned. In discussion, participants remarked that there are problems with using library computers and that the community technology center is good – the connections are faster and it's free. Additionally, a volunteer is available to help solve problems.

In discussion, participants repeated the concerns about the threat of hackers and scams, risks that might discourage community members from participating. Participant comments transcribed from interview sheets suggest a lack of understanding of computers and the Internet among some of the participants, as well as a lack of awareness of access opportunities.

Training

Most of the participants (79%) indicated that they have taken a computer class and most of these reported that it was useful. Most (71%) were interested in taking classes in the future. Classes had been taken in high school; at community colleges; at the community center; from the City of Seattle; and from work. Topics included keyboarding; the basics of the Internet; including accessing news online; emailing; online entertainment; Microsoft's Office Suite; Adobe Photoshop; how to create a website ("without the intimidation of learning"); and other software programs.

Participants mentioned that they want to become more skilled in programs, for work, for personal interest and for surviving. They prefer classes with an in-person teacher, but need the classes to be free or low cost.

Participants suggested that more free classes, taught in Vietnamese, could be offered in the community to help community members learn basic computer skills, such as Internet browsing, as well as more advanced skills including working with Microsoft Office and applications to help interested individuals start their own business. Some believed that individuals who do not currently have access, especially the elderly, might be intimidated and afraid of new things. Classes taught in different languages and giving attention to protection from the risks of the Internet were suggested as possible ways to help these individuals gain access.

Participants also suggested printing basic information about computers and computer access in a pamphlet that could be freely distributed. One participant asked for someone to come and teach her/him how to use the computer, and also suggested providing voice recognition software for those unfamiliar with a keyboard or who may have limited literacy. Others suggested that community members might get help from their children, friends or relatives, or at the library. Others suggested making more computers publically available, and finding a way to make home computer and Internet access more affordable. One person suggested the need for more simplicity ("less buttons") in computer use, and the possibility of video instruction.

Communicating with Government

Survey: Two thirds of the survey respondents prefer to make contact with the government on the web or by email, and one-quarter prefer the telephone. A few prefer to write a letter (17%) and one prefers to visit in person. Correspondingly, when asked how they prefer to give their opinions to the City on things they care about, 62% selected email or participating in an online survey, followed by 15% who prefer a discussion on the Internet. One each mentioned wanting to attend a

Paraphrased Comments

Knowing what's going on would help in picking an event to attend

Your own personal community, free events, singles events, events for older lonely folks

city-wide meeting, wanting to participate in a short text survey, or attending a community meeting.

Survey: Few (23%) of the survey respondents have visited Seattle.gov or seen the Seattle Channel (38%). In *mutual interviewing*, participants mentioned City Life, an educational resource, and some thought they might be a way to find city jobs or more information about childcare services, but most confirmed that they don't know much about the City's website or TV channel. Participants named some of what they wanted to see on Seattle.gov, including:

- Calendar of community events and activities, especially Vietnamese events
- Local news
- Weather updates
- News (including Vietnamese newspapers)
- Available resources, especially for low income families
- Easy links to government services, social services available for low income families; health care
- Ability to socialize on the City's website
- City budget information
- Continuous updates on schools
- More colors, video, and music

Participants wanted to know more about cultural activities, and multi-cultural activities. Several expressed interest in Vietnamese-specific information, in Vietnamese, such as news about the Vietnamese community, and Vietnamese festivals and events, and other things happening in the community, such as grocery sales or real-time crime reporting to help them know what areas to avoid. Participants also expressed interest in finding resources for low income families, learning about the rights of people with disabilities, and ways of volunteering. Participants also are interested in finding out more about classes, specifically mentioning computer classes, and arts and crafts. One person requested a link that would lead them to all Vietnamese events.

Survey: Participants were varied in how they want to get information from the city. About half asked for email notices that they could opt into; 38% each selected the newspaper or the City's website and 31% selected the TV news. About a quarter selected the radio or notices in the mail. Two selected the Seattle Channel and only one was interested in receiving recorded telephone messages. None wanted text messages on their cell phone, saying it is a bad idea unless the City can find a way to make it free.

In general, participants approve of knowing what's going on, and like being able to communicate with the government. Participants were divided about email, with some afraid of SPAM, and one person suggested limiting email to one per week. Others were concerned that if the City relied on email for giving out information, those without access would not have a way of being informed.

Participants also suggested mailers to let people know about Vietnamese classes being offered, and flyers that could be distributed at Viet Hoa, nail shops, and Sea Deli.

Participants had three different suggestions for helping people become more comfortable communicating with the City by electronic means:

1. Custom language ability, including telephone support in multiple languages
2. Training, with some suggesting a telephone or other types of tutorials, and others suggesting classes. Participants asked to have the process explained thoroughly, with special attention to the problem of hackers and viruses.
3. Improved customer service, with faster responses from the city and more personable telephone responses.

Appendix I Methods Detail

DoIT staff collaborated with the survey consulting team to refine the 2004 survey, which was administered by telephone in English or Spanish to 1000 random Seattle residents by Pacific Market Research. Because of the importance of understanding the issues related to technology access, use, and barriers among the City's residents that speak neither English nor Spanish, the team also planned a series of focus groups with native speakers of Seattle's primary non-English languages, including Chinese, Tagalog, Somali, Vietnamese, Korean, and Spanish. An additional group focused on the historically technology underserved African-American community and another on young people in order to check more likely cell phone only users not reached in our fixed wire (landline) phone survey. As budgeting permits, focus groups of other groups potentially underrepresented in the survey will be conducted; people with disabilities are one of those groups noted by the City staff.

Survey Sampling, Inc. provided a random sample of Seattle area telephone numbers for the random digit dial (RDD) portion of the survey. The team decided to oversample Hispanic/Latino and African American/Black households to assure adequate representation of these subgroups. To achieve this, a targeted sample of telephone numbers was ordered focusing on Seattle ZIP codes with a higher incidence of ethnic minority households and a list of numbers with Hispanic surnames drawn from the telephone directory was used to supplement the Hispanic subsample. Surveys were conducted in English or Spanish, according to the preference of the respondent.

Overall, 6952 telephone calls were made that resulted in contact with an individual. Of these 1064 (16%) resulted in completed surveys. 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[22]. Of all the calls reaching a household, 16% completed the survey. Excluding those known to be unqualified and those unable to participate because of a language barrier, 18% of those reached completed a survey. Most of those who declined to participate in the survey did so before completing the screener, making it impossible to estimate accurately the response rate among qualified residents. Of those known to be qualified, 96% completed the survey, however, this should not be construed as the response rate because many of those who refused before completing the qualification screener were also likely to have been qualified. 18% may be a more reasonable, if conservative, estimate of response rate.

Table 1 details the disposition of calls and reasons for termination. Thirty-nine made it through the screener and may have started the survey, but did not complete it; 3,418 refused to participate before completing the screener; 537 were not qualified to participate; and 1532 asked to be called back.

[22] Disqualified individuals would be those living outside the city of Seattle or who did not indicate their ZIP code, cell phones, those younger than 18 years, or those in over quota categories.

Table 1. Disposition of terminated calls

	Number	Percent of answered calls
Completes	**1064**	16%
Qualified refusal	**39**	0.5%
Refusals, before screener	**3418**	52%
Screener refusal/break off	8	
Hard refusals	3410	
Unqualified incompletes	**537**	8%
Not a Seattle resident/don't know ZIP	167	
No such person, ref referral	240	
Claims previous interview	38	
Over quota (ZIP, age, ethnicity)	60	
Contacted cell phone	9	
Ported number	23	
Callback (scheduled or not)	**1532**	23%
Language barrier: not Spanish or English	**362**	8%
Total	6952	100%

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	7294	43%
Non working numbers	7378	43%
Non-residential numbers	997	6%
Other phone problems (fax/modem)	1336	8%
Total	17005	100%

Tables 2 shows that of the calls where the interviewer did not reach a member of a household, 43% were non working numbers. Another 43% of the numbers rang, but were not answered. Six percent of the numbers were non residential and eight percent were fax or modem numbers.

Taken together, 6952 (29%) of the telephone numbers dialed reached a household. Eight percent of these did not qualify to participate in the survey, and another eight percent did not speak English or Spanish well enough to participate. Twenty-three percent asked to be called back. About half (52%) declined to participate before the screener was completed. These individuals

may or may not have been qualified to participate. Of those known to be qualified to participate, nearly all did so. For most who refused, that decision was made before determining the responder's eligibility to participate.

Weights

Because of the targeted sampling discussed above, the geographic and ethnic distribution of survey respondents differed from the distribution of the city's residents. To correct for this, weights were calculated using an iterative process so that individuals from undersampled groups would be counted more heavily, as if they were "speaking for" more people, and those from oversampled groups would be counted less heavily, as if they were "speaking for" fewer people. Using weights protects the responses of an undersampled group. That is, if an undersampled group is in some way different from the oversampled group, weights ensure that the overall summary of Seattle's residents would not be unduly influenced by the responses of the oversampled group because the weighting procedure would reduce the influence of the responses of that group.

The iterative process proceeded as follows: initial weights were developed to balance ZIP codes. These weights were applied and the ethnicity distribution for the weighted sample was produced. A second set of weights was developed to balance the weighted distribution of ethnicity, based on the 2007 American Community Survey (ACS), conducted by the U.S. Census bureau. The ZIP codes weights and the ethnicity weights were combined and applied to the sample. This process continued until the sample was also balanced for age and income. Each weighting step produced a perfect balance for the last factor balanced and disturbed the balance for the previous factors. After weights had been developed for ZIP code, race/ethnicity, age, and income, a second round of weights were developed for ethnicity, because one category was out of balance by more than three percentage points. By the end of the iterative process, the balanced categories deviated from the population values by less than two percentage points.

Table 3 displays the current geographic distribution of the Seattle's population according to a commercial database, ZIP-codes.com, and the distribution in the survey sample with and without weighting using the combined weighting factor. Some ZIP codes would be over-represented because of efforts to reach certain demographic groups known to live in those ZIP codes. Similarly, Table 4 displays the demographic distribution of Seattle's population according to the 2007 ACS U.S. Census data, compared with the sample distribution with and without weighting.

Table 3. Distribution of respondents by Seattle ZIP code before and after weighting

ZIP code	Seattle population[23]	Unweighted sample	Deviation: Population-Unweighted Sample	Weighted Sample	Deviation: Population-Weighted Sample
98101	1.6%	1.2%	0.4%	1.3%	0.2%
98102	3.3%	2.3%	0.9%	3.5%	-0.3%
98103	6.9%	4.8%	2.1%	6.4%	0.5%
98104	1.6%	0.9%	0.7%	1.5%	0.1%
98105	5.3%	4.0%	1.3%	5.4%	-0.1%
98106	3.9%	2.9%	0.9%	3.2%	0.6%
98107	3.2%	2.5%	0.7%	2.9%	0.3%
98108	3.5%	4.4%	-0.9%	4.0%	-0.5%
98109	3.1%	2.1%	1.0%	3.5%	-0.4%
98112	3.2%	3.3%	0.0%	3.6%	-0.3%
98115	7.1%	5.7%	1.4%	6.8%	0.3%
98116	3.4%	3.5%	0.0%	3.2%	0.3%
98117	4.8%	4.0%	0.8%	4.2%	0.6%
98118	7.0%	21.3%	-14.3%	8.3%	-1.3%
98119	3.0%	2.8%	0.2%	3.4%	-0.4%
98121	1.8%	0.8%	1.1%	2.3%	-0.5%
98122	4.8%	2.9%	1.9%	4.9%	-0.1%
98125	5.9%	5.1%	0.8%	5.8%	0.1%
98126	3.1%	2.5%	0.5%	2.9%	0.2%
98133	6.7%	2.0%	4.8%	5.8%	0.9%
98134	0.1%	0.2%	-0.1%	0.1%	0.0%
98136	2.3%	3.4%	-1.1%	2.1%	0.2%
98144	4.4%	7.0%	-2.5%	4.4%	0.0%
98177	3.1%	1.2%	1.9%	2.8%	0.3%
98178	3.6%	6.6%	-3.0%	4.8%	-1.2%
98199	3.1%	2.4%	0.7%	2.9%	0.3%

[23] Seattle population values based on 2009 figures from the commercial database, ZIP-codes.com

Table 4. Distribution of respondents by demographic categories before and after weighting

	Seattle[24] population	Unweighted sample	Deviation: Population-Unweighted Sample	Weighted Sample	Deviation: Population-Weighted Sample
Gender					
Male	51.4%	50.4%	1.0%	49.6%	1.9%
Female	48.6%	49.6%	-1.0%	50.4%	-1.9%
Race/ethnicity					
African American/Black	6.8%	8.4%	-1.6%	6.8%	0.0%
Asian / Pacific Islander	14.5%	7.4%	7.1%	14.5%	0.0%
Caucasian/White	68.1%	70.9%	-2.7%	68.1%	0.0%
Hispanic / Latino	6.2%	10.0%	-3.8%	6.2%	0.0%
Native American / American Indian	0.5%	0.8%	-0.3%	0.5%	0.0%
Mixed ethnicity	3.9%	2.6%	1.4%	3.9%	0.0%
Age category					
18-25	12.5%	4.8%	7.7%	11.6%	0.9%
26-35	21.1%	16.3%	4.8%	19.8%	1.3%
36-50	30.9%	33.9%	-3.1%	30.7%	0.2%
51-64	23.7%	32.5%	-8.8%	24.9%	-1.2%
65+	11.9%	12.5%	-0.6%	13.0%	-1.2%
Income category					
1 Less than $20K	16.7%	13.5%	3.2%	15.9%	0.7%
2 $20K to less than $30K	8.6%	8.8%	-0.2%	8.3%	0.3%
3 $30K to less than $40K	8.9%	7.6%	1.2%	8.8%	0.1%
4 $40K to less than $50K	8.6%	8.5%	0.1%	8.5%	0.1%
5 $50K to less than $75K	16.9%	15.6%	1.3%	17.1%	-0.2%
6 $75K to less than $100K	12.6%	16.3%	-3.7%	12.8%	-0.2%
7 $100K or more	27.8%	29.7%	-1.9%	28.6%	-0.8%

Inferential analyses, usually factorial analysis of variance or two-way frequency distributions with a chi-square statistic, are conducted where appropriate assumptions

[24] Population percentages based on 2007 American Community Survey by the U.S. Census.

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.*

Limitations

Telephone surveys have fundamental limitations:

- The findings represent only those households that have a working landline 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. However, according to the most recent National Health Interview Survey by the Centers for Disease Control and Prevention[25], during the first half of 2008, 17.5% of American homes had cell phones only and another 13.3% have both a cell phone and a land line but take calls only on their cell phones. This report indicates that 31% of adults ages 18-24 have cell phones only, as do 35.7% of adults 25-29 years. Men, lower income individuals, and Hispanic or African American/black adults were more likely to live in cell phone only households, and west coast residents were less likely. Although Table 4 shows that these groups are well represented in the current survey, residents who are excluded from the survey because of their use of telephone technology might also be different in their uses of other forms of technology.
- 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. According to the U.S. Census Bureau, 2007 American Community Survey, 11% of Seattleites speak English less than "very well." The largest language groups represented in this figure speak Spanish speakers (2.7%), Chinese speakers (2.3%), Vietnamese (1.9%), Tagalog (0.8%), Korean (0.4%), and "African languages" (0.8%). Focus groups were conducted with a sample of these community members to ensure that they are represented in this report.
- 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 may be unrepresentative 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 probably become closer to the population values.

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[25] Blumberg SJ, Luke JV. Wireless substitution: Early release of estimates from the National Health Interview Survey, January-June 2008. National Center for Health Statistics. Available from: http://www.cdc.gov/nchs/nhis.htm. December 17, 2008.

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 (± 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 ± 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.

This is a large sample, and we report quantitative findings that are consistent, well patterned, and seem to make sense. The many focus groups that we conducted to round out our understanding also yielded results were consistent with the survey data. Nevertheless, it is important to keep the above limitations in mind, remembering both that some voices are likely to be missing from this report and, as always, that those who are present might not accurately represent others in their subgroup.

Focus Group Methodology

Ten participatory focus groups were conducted with 310 community members using a method that can receive input from a large number of participants. Brief surveys were also completed by participants in most of the groups. Most of the groups were recruited through Family Centers, the Seattle Housing Authority, and community organizations or community leaders.

The method used depends on a mutual interviewing process. Participants are divided into four equal groups. Each group is assigned a question topic area. Individual in groups are paired and instructed to spend a few moments interviewing one another in their question areas. After about 10 minutes, groups are recombined so that participants are asking the same question to members of a new group, and being asked a new question. The recombining continues until each participant has interviewed four other participants, one in each of the groups, using his/her group's questions, and has responded to questions from all the groups. After this process of data collection in which each person has the chance to express his or her views on all the question areas, the groups reconvene to analyze and summarize the findings from their interviews.

Table 5 lists the group characteristics and the number of participants in the group.

Table 5. Focus Group Participants

Group type	Number of participants[26]	Number of surveys completed[27]	M	F	Cell phone only	18-25	26-35	36-50	51-64	65+
Filipino	69	45	18	22	14	1	1	0	11	28
Spanish language	14	10	0	9	1	0	4	5	0	0
Spanish language	28	27	8	19	7	6	9	8	3	0
African American	28	19	2	15	3	2	4	1	8	2
Somali language	13	11	0	11	3	3	2	2	2	1
Somali language	69	12	3	5	6	4	0	2	0	0
Korean language	13	14	6	8	3	0	1	1	3	9
Chinese language	17	14	4	9	2	1	2	3	2	8
Vietnamese and English	17	10	1	7	3	0	2	2	2	1
Graduate students	46	39	13	13	30	12	24	3	0	0

[26] Including note-takers and co-facilitators

[27] Participants who completed the survey often did not answer every question

Appendix II – Instruments

Telephone survey

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 and will help guide city decisions. 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.

If NO, may I please speak with someone in your household 18 years of age or older?

Interviewer: if respondent questions whether this is a legitimate survey, please refer to David Keyes 206 386 9759 or go to www.seattle.gov/tech to view past reports.

[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

A. 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 if you have it in your household.

[If necessary, Do you have …]

A1 …cable service for your television?

1 YES
2 NO
3 Don't have a TV **[skip to A3]**
8 DON'T KNOW
9 REFUSED

A2 …satellite tv

1 YES
2 NO
3 Don't have a TV
8 DON'T KNOW
9 REFUSED

A3 A cell phone for yourself?

1 Yes
2 No
8 DON'T KNOW
9 Refused

A4 …a working desktop computer, laptop computer or both?

1 Desktop
2 Laptop
3 Both
0 NONE
8 DON'T KNOW
9 REFUSED [

A5 Internet access at home?

1 Yes
2 No
8 DON'T KNOW
9 REFUSED

A6 Internet access on a mobile device like a blackberry, I-phone, or cell?

1 Yes
2 No

8 DON’T KNOW
9 REFUSED

A7. Do you use a computer or the Internet?

1 YES
2 NO [skip to A8]
8 DON'T KNOW [skip to A8]
9 REFUSED [skip to A8]

A7b. Have you been a computer or Internet user for longer than a year?

1 YES
2 NO
8 DON'T KNOW
9 REFUSED

Interviewer Note 0:

If A4=1,2,3 and A5/A6 <> 1 say "a computer"
If A4 <>1,2,3 and A5/A6 = 1 say "the internet"
If A4=1,2,3 and A5/A6 = 1 say "a computer and the internet"
If A7 <> 1, omit "Including yourself"

A8 [Including yourself], how many people in your household use(d) [a computer/the Internet/a computer and the Internet] at your house?

_____ENTER NUMBER OF PEOPLE (RANGE = 0-99)
777 No other people in household [fill in Q1, A9 and F4 and skip them]
999 DON'T KNOW
888 REFUSED

Interviewer note 0aa:

If A7 <> 1, skip to F4 and omit [Including yourself]

F3 Do you have an email address that you use?

1 YES
2 NO
8 DON'T KNOW
9 REFUSED

F4 Including yourself, how many adults in your household, if any, have an email address?
_____#

444 Everyone
Number ___ (RANGE = 0-99)
777 No other adults [fill in demographics question]
888 Don't know
999 Refused

Interviewer Note 0a:

If A3 = 1 say "other"

A9 [Including yourself] how many -people in your household, if any, currently have cell phones?

_____# (RANGE = 0-99)
777 No other people in household [fill in Q1, F4 and skip them]
999 DON'T KNOW
888 REFUSED

Interviewer Note 0b: If A1, A3 and A5=1, skip to B1

If no cell phone, Internet access, computer or Cable TV

Interviewer note 1:

If No (2) to A1 or A3 or A5, continue with A10

If YES to these but no (0) to A4; skip to A12c.

If A1 <> 1, include "cable TV"; if A3 <> 1, include "a cell phone"; if A5 <> 1, include [Internet access at home]

A10. You mentioned not having [cable TV/a cell phone/Internet access at home]. Have you ever had [any of these services (if three)/either service (if two)/this service (if one)]?

1 YES
2 NO [skip to Interviewer note 2]
8 DON'T KNOW [skip to Interviewer note 2]
9 REFUSED [skip to Interviewer note 2]

Interviewer note 2:

If asking about only one service in A10, autofill A11 and skip to Interviewer note 3.

If never had any of these services, skip to A12c.

A11. Which services have you had? [Allow multiple response; if necessary prompt with those from list in A10]

1 Cable TV
2 Cell phone
3 Internet access at home
8 DON'T KNOW
9 REFUSED

Interviewer note 3: if Cable in past (A11=1), continue with A12a.

If current cable (A1=1) or never cable (A11 ne 1) skip to Interviewer note 4.

A12a. Why did you drop cable TV? [Do not read; allow multiple response; note order]

1 Cost
2 Reduced household income/problems in the economy/trying to save money
3 Not worth the money
4 Service problems
5 No longer needed/ did not use Cable TV
6 Did not like Cable programming
7 Did not like it
8 Didn't want it any more
9 Kids were gone
10 Kids watched too much TV
11 Personal reasons
12 Other _____
88 DON'T KNOW
99 REFUSED

A12a1 When did you last subscribe to cable? Was it…?

1 Within the past month
2 Within the past six months but more than a month ago
3 Within the past year but more than six months ago
4 More than a year ago
8 DON'T KNOW
9 REFUSED

Interviewer note 4: if current cell phone (A3=1) or never cell phone (A11 ne 2), skip to Interviewer note 5. If former cell phone (A11=2) continue with A12b.

A12b. Why did you drop your cell phone? [Do not read; allow multiple response; note order]

1 Cost
2 Reduced household income/problems in the economy/trying to save money
3 Not worth the money
4 Service problems
5 No longer needed/ did not use cell phone
6 Health concerns
7 Personal reasons
8 Other _____
88 DON'T KNOW
99 REFUSED

A12b1 When did you last subscribe to cell phone service?? Was it…

1 Within the past month
2 Within the past six months but more than a month ago

3 Within the past year but more than six months ago
4 More than a year ago
8 DON'T KNOW
9 REFUSED

Interviewer note 5: If never Internet (A5=2 and A11 ne 3), skip to A12c;
If former Internet (A11=3), continue with A12c1;
If current Internet (A5=1) and home computer (A4=1, 2 or 3), skip to B1;
If current internet (A5=1) or never internet (A5=2 and A11 ne 3) and no home computer (A4=0), skip to A12c;

A12c1 When did you last have Internet access at home? Was it…

1 Within the past month
2 Within the past six months but more than a month ago
3 Within the past year but more than six months ago
4 More than a year ago
8 DON'T KNOW
9 REFUSED

A12c 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 Computer COST / TOO EXPENSIVE
2 Internet COST/ Too Expensive
3 Reduced household income/problems in the economy/trying to save money
4 DON'T KNOW HOW TO USE IT
5 SUFFICIENT ACCESS ELSEWHERE
6 SAFETY / SECURITY CONCERNS
7 DON'T WANT ONE/it
8 Don't know how to choose one
9 Don't have time to learn how to use one
10 Don't have time to use one/It at home
11 DON'T KNOW HOW TO SET IT UP
12 DON'T HAVE A COMPUTER OR INTERNET DEVICE
13 Computer broke down
14 PROBLEMS WITH THE TELEPHONE LINE
15 PROBLEMS WITH CABLE ACCESS
16 PROBLEMS WITH DSL ACCESS
17 CAN'T GET THE KIND OF INTERNET ACCESS I WANT
18 DON'T REALLY KNOW ABOUT THE INTERNET
19 DON'T WANT KIDS TO USE IT
20 Inappropriate content/pornography/hatred-material
21 Worried about inappropriate content for children
22 Child safety (dangerous strangers)
23 Computer safety – viruses, worms
24 Privacy/security/personal information (banking, credit card, identity theft issues)
25 Don't like computers
26 Don't like the Internet
27 I have other things to do/ they're a time waster
28 Don't have a desire or need to use them
29 Nothing on computers or the internet is relevant to me
30 I **do** have home Internet [Verify if answer yes to this]
31 I **do** have a home computer [Verify if answer yes to this]
32 Don't need it – get free WIFI
33 OTHER [SPECIFY]_____
88 DON'T KNOW
99 REFUSED / NO MORE APPLY

Interviewer note 6: If A12c ne 1 or 2 or 3, and former Internet (A11=3), skip to B1;
If A7=1, skip to B1;
If A12c ne 1 and A12c ne 2 and A12c ne 3, and never Internet user (A11 <>3) skip to skip to Cable Drill Down.

If A12c = 1, ask A13a; if A12c =2, ask A13b; if A12c=3 and A4 <>1,2,3, ask A13a; if A12c=3 and A5 <>1, ask A13b

A13a How much, if anything, would you be willing to spend to have a computer at home?
$_____ ENTER DOLLAR AMOUNT (RANGE 0-9999)

A13b How much, if anything would you be willing to spend per month for Internet access?
$ _____ENTER DOLLAR AMOUNT (RANGE = 0-99)

General Interviewer Note: for all subsequent section, treat Rs who had Internet/Cable/Cell service in the past as subscribers to the corresponding service, changing the verb tense as necessary.

Interviewer note 7: For those who are not Internet users (A7 <> 1), skip to Cable Drill Down.

B. Internet detail

B1 What is/was your primary way of accessing the Internet? Do/did you use your…
[Include according to answers above. Allow multiple response after "primary" way?"]

1 Desktop computer
2 Laptop computer
3 Mobile device
4 TV
5 Other _____
0 I don't/didn't use the Internet [Verify A5. If no current Internet access; verify A11. If no current or former Internet access, revise A5 and A11 for future skips and skip to Cable Drill Down. If current or former access at home or elsewhere, continue with B2.]
8 Don't know
9 Refused

B1a What other ways do you access the Internet? Do you use your… [include according to remaining answers from above]

1 Desktop computer
2 Laptop computer
3 Mobile device
4 TV
5 Other _____
0 no other way
8 Don't know
9 Refused

B2 What type of Internet service do/did you have coming into your house? [Allow multiple response; do not read but prompt with options if necessary, starting with dial up modem]

0 Don't have home Internet [skip to Cable drill down]
1 Dial up modem [skip to B4]
2 DSL (Could also be state as Qwest, or Covad) [skip to B3]
3 Internet through your CABLE company (Broadstripe or Comcast) [skip to B3]
4 WEB TELEVISION [skip to B5]
5 Wireless (Clearwire, Sprint card) [skip to Interviewer note 8]
6 Free WIFI [skip to B5]
7 OTHER [SPECIFY] _____ [skip to B5]
8 DON'T KNOW [skip to B5]/don't remember
9 REFUSED / NO MORE APPLY [skip to B5]

Interviewer note 8: if Respondent says "wireless" prompt for "Is that a paid service like Sprint or Clearwire? Or free WIFI"

B3. Do/did you subscribe to a premium or business class Internet service that offers faster than basic dsl or cable broadband service?

1 YES [skip to B5]
2 NO [skip to B5]
4 DON'T KNOW
5 REFUSED

B4 How much, if anything, would you be willing to spend per month for higher speed Internet access?
$ _____ENTER AMOUNT PER MONTH (range 0-99)
777 No more than I currently pay/nothing more
888 DK
999 ref

B5. What one thing, if anything, would improve your internet service the most? Would it be…

1 speed,
2 price,
3 customer service,
4 reliability,
5 nothing at all or
6 something else? _____
8 Don't know
9 Refused

Interviewer note 9: if R wants to select more than one, force one choice with something like "Yes, we understand but can you pick the most important one?"]

C. Cable drill down (All)

Interviewer note 10: If current or former cable subscriber (A1=1, or A11=1), continue. If not/never cable subscriber (A1 ne 1 and A11 ne 1), skip to Interviewer note 11.

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

SUBSCRIBERS or former subscribers

C1. Who is/was your cable company?

1 Broadstripe
2 Comcast
3 Other _____
8 DON'T KNOW /Don't remember
9 REFUSED

C2. How satisfied are/were you with the customer service for your cable television? Would you say you are/were…

4 Very satisfied
3 Satisfied

2 Dissatisfied
1 Very dissatisfied
8 DK
9 Refused
7 Not applicable

C3. [Are you having/Did you have] any problems with your cable service that [have not been/were not] resolved?

1 Yes
2 No [skip to D2]
3 DON'T KNOW [skip to D2]
4 REFUSED [skip to D2]

C4. What kind(s) of problems? _____[Skip to D2]

Interviewer note 11: If former subscriber (A11=1), go to D1; if never subscribed (A1 ne 1 and A11 ne 1) use following transition before D1:

Now we have a couple of questions about Seattle's cable service.

Non subscribers only (recent or ever)

D1. Are you aware of the digital television, or dtv, transition in February?

1 Yes
2 No
8 DK
9 Refused

All

D2. Are you aware that the City has an office to help with things like cable company customer service, and cable TV discounts for senior citizens and people with disabilities, and to provide information about digital tv converter coupons?

1 Yes
2 No
8 DON'T KNOW
9 REFUSED

D3. Would you like someone from this office to contact you?

1 Yes
2 No/DK/Ref [skip to D5]

D4. If YES, may I have your first name, please? _____

D3b. Would you like someone from this office to contact you about the basic TV channel package for under $20 a month?

1 Yes
2 No/DK/Ref [skip to D5]

D4. If YES, may I have your first name, please? _____

D5. Are you aware that cable companies offer a basic tv channel package for under $20 a month?

1 Yes
2 No
8 DK
9 Refused

Interviewer note 12: if respondent asks questions about this lower option, refer them to their cable company business office Broadstripe: 1-800 829 2225 or Comcast: 1-800-226-2278. If they say that that hasn't worked and did not say "yes" to D3, go back to D3b and then skip to E. SCAN). If they say that that hasn't worked and they said "yes" to D3, say "OK, we'll have the Cable Office contact you"

E. 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 Broadstripe**: 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.

E1 Have you ever watched this channel?

1 Yes
2 No **[skip to E3]**
8 Don't know **[skip to E3]**
9 Refused **[skip to E3]**

E2 How often do you watch the SCAN public access [Channel 77/ Channel 29]? Would you say you are a very regular viewer, regular viewer, occasional viewer, or very infrequent viewer? [READ AS NECESSARY]

4 very regular
3 regular
2 Occasional
1 Very infrequent
8 DON'T KNOW
9 Refused

E3 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:

4 Very important
3 Somewhat important
2 Not really that important
1 Not important at all
8 No opinion/don't know
9 Refused

Interviewer note 13: If R not a current computer user (A7 ne 1) skip to G2:

F. All computer/Internet users

Intro: Now we're going to ask about your use of computers and the Internet

F1 Where do you do most of your computing? [Do not read, allow two answers, note first and second mention]

1 Home
2 Work
3 School
4 Public library
5 Friend or relative's house
6 Café or restaurant
7 Everywhere/anywhere
8 Other (specify _____)
88 DK/Depends
99 Refused

F2 On average, how many days per week would you say you use a computer or the Internet at ANY location?

_____days per week

99 DK/Ref

Interviewer note 14: If F3 ne 1, skip to Interviewer note 15

F5 How often do you use email? Would you say you use it…

3 At least once a day
2 Once a week or more, but less than once a day
1 Less than once a week
8 DK
9 REFUSED

Interviewer note 15: I am going to read you a list of 15 things you might use a computer or the Internet for. For each one, please tell me if this is something you use it for, whether on a regular basis or sometimes. This could be on a computer at home or some other place.

[ROTATE F6 TO F20]

[IF NECESSARY: Do you use a computer/the Internet or email to…]

F6 Keep in touch with friends and family

1 Yes
0 No
8 DK
9 Ref

F7 Get health or medical information

1 Yes
0 No
8 DK
9 Ref

F8 Look for a job or job training

1 Yes
0 No
8 DK
9 Ref

F10 Purchase products or services

1 Yes
0 No
8 DK
9 Ref

F11 Attend an online class, meeting or webinar

1 YES
0 NO
8 DON'T KNOW
9 REFUSED

F12 Sell goods or services online?

1 YES
0 NO
8 DON'T KNOW
9 REFUSED

F14 Find legal or consumer rights information

1 Yes
0 No
8 DK
9 Ref

F15 Find local school information

1 Yes
0 No
8 DK
9 Ref

F16 Post a video on YouTube or elsewhere on the web

1 Yes
0 No
8 DK

9 Ref

F17 Make a donation to charity online

1 Yes
0 No
8 DK
9 Ref

F18 Download a podcast

1 Yes
0 No
8 DK
9 Ref

F19 Contribute to a blog, wiki, or other group

1 Yes
0 No
8 DK
9 Ref

G. SAFETY and SECURITY

These next questions are about safety and security on the Internet

[Interviewer note 16: IF NOT COMPUTER USER (A7 ne 1) add] While I understand that you do not use the Internet, we are still interested in your opinions about these issues. You can base your answers on anything you might have heard, seen or read.

G1 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.]

4 YES
3 For the most part
2 Not enough
1 NO
8 DON'T KNOW / DEPENDS
9 REFUSED

G2 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

Interviewer note 17: IF NOT A COMPUTER (A7 ne 1) SKIPTO I1

H. Literacy

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.

How comfortable are you…

[PROBE: How comfortable are you doing these tasks or activities on the computer and Internet. 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.]

If F3 ne 1, skip to H2. Otherwise continue

H1 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

[ROTATE H2-H3]

H2 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

H3 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 H2 and H3 = not at all comfortable or never done this task, skip to I1. Otherwise continue

H4 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

H5 Using sites, like Facebook, Myspace or LinkedIn?

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

I. Attitudes about importance of access, and training (ALL)

I1. 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

I2. And, how important do you think it is for <u>children</u> to have access to computers and the Internet these days? [Read response options if necessary]

4 Very important
3 Somewhat important
2 Not really that important
1 Not important at all

9 DK/NA

I3. And how important do you think it is for all Seattle households to have high speed internet access, at least as fast as cable or dsl broadband? [Read response options if necessary]

4 Very important
3 Somewhat important
2 Not really that important
1 Not important at all
9 DK/NA

I4 Do you think Seattle residents need access to free or low cost training on how to use computers or the Internet?

1 Yes
2 No
3 DK
4 Refused

J. Community Building

Intro: Now we have some questions about you in the community.

J1 Do you participate in any type of community group, like a neighborhood association, block watch, school, religious group, or any other type of group?

1 Yes
2 No
3 DK
4 Refused

J2 Do you regularly visit any website or belong to an email list to get information about your local community [Prompt only if necessary: perhaps for a local community or cultural group, or a school, business, or community service organization.]

1 YES
2 No
3 Not aware of any lists or web site.
4 Yes, but not regularly
5 DK/REF

K. Civic Participation

K1 When you need something from the government, do you prefer to make contact …

1 On the web or via email
2 In person
3 By telephone
4 By letter
5 Other _____

8 DK
9 Refused

Using the numbers between 1, meaning “not at all effective” and 5, meaning “very effective,” in your opinion, how effective are email and the Internet as ways to

K2 …communicate your opinions about issues that affect you in your community?

1 NOT AT ALL EFFECTIVE
2
3
4
5 VERY EFFECTIVE
9 DON’T KNOW / REFUSED

K3 …How about as a way to communicate with elected officials?

1 NOT VERY EFFECTIVE
2
3
4
5 VERY EFFECTIVE
9 DON’T KNOW / REFUSED

Interviewer note 18: If not Internet user (A7 <> 1) skip to L4 (Seattle Channel)

K4 In the past year, have you used the Internet to obtain information from a city, county, state, or federal government website?

1 YES
2 NO
8 DON’T KNOW
9 REFUSED

L. City of Seattle WEB Services and Seattle Channel

L1 Have you ever visited the City of Seattle web site; at seattle (dot) gov?

1 YES
2 NO [skip to L3]
8 DON’T KNOW [skip to L3]
9 REFUSED [skip to L3]

L2 How often do you visit the City’s website? Would you say you are a very regular visitor, regular visitor, occasional visitor, or very infrequent visitor?

[READ AS NECESSARY]

[IF DON’T WATCH REGULARLY ENTER CHOICE 1 “Very infrequently”]

4 very regular [skip to L4]

3 regular [skip to L4]
2 Occasional
1 Very infrequent
8 DON'T KNOW
9 Refused [skip to L4]

L3: If L1=2: Is there some reason why you haven't [IF NECESSARY: visited seattle(dot) gov]?
If L2=1 or 2: Is there a reason you don't use it more? (if YES, specify)

0 No reason given
1 Don't know about it
2 No need/no more need
3 It's never come up on Google or other search engine
4 Too hard to find the site
5 Too hard to find what I need
6 Easier to just call
7 Tried it once, but it was too complicated or frustrating
8 Didn't think about it
9 Don't use the Internet
10 Other _____
88 Don't know
99 Refused

Seattle channel

The next few questions are about the Seattle channel. This is the government channel with a wide range of programs about city news, politics, arts, people, community affairs, and city services.

L4 Have you ever seen the Seattle Channel, cable channel 21 or on the Internet (at seattlechannel (dot)org)? PROBE: Was it on cable, the Internet or both?

1 Yes, (specified on tv)
2 Yes (specified on Internet)
3 Yes (specified both TV and Internet)
4 Yes (did not specify)
5 NO **[SKIP TO L6]**
6 Don't know about it
8 DON'T KNOW **[SKIP TO L6]**
9 Refused **[SKIP TO L6]**

L5 How often do you watch the Seattle Channel? Would you say you are a very regular viewer, regular viewer, occasional viewer, or very infrequent viewer?

[READ AS NECESSARY]

[IF DON'T WATCH REGULARLY ENTER CHOICE 1 "Very Infrequently"]

4 very regular

3 regular
2 Occasional
1 Very infrequent
8 DON'T KNOW
9 Refused

L6 What would you like to know more about in your community, that the city could share on its web site or cable channel? [Prompt only if needed: This could be anything of interest to Seattle residents – how-to information, things about the city, government, cultural events, people, our homes, businesses, or community services…

Note specific topics: _____

If L6=none, no, NA, skip to M1

L7 Is there anything else you'd be interested in? (Please describe.)

_____

Interviewer note 18: Non computer/internet users (A7<> 1 or B1 =0); skip to Q. Demographics

M. Business and Economic Development

M1. In the past year, have you tried to find information about local businesses on the Internet?

1 YES
2 NO
8 DON'T KNOW
9 REFUSED

M2 In the past year, have you purchased any items or services from local businesses on the Internet?

1 YES
2 NO
8 DON'T KNOW
9 REFUSED

I'm going to read a few ideas that have been suggested for making it easier to find or purchase from local businesses on the Internet. For each one, I'd like you to tell me whether it would help you a lot, a little, or not at all. (Rotate M3-M7)

M3 If more local businesses came up when searching with Google or some other search engine

1 Not at all
2 A little
3 A lot
8 Don't know/not sure/don't care
9 Refused

M4 If your Neighborhood or Chamber of Commerce websites had more information about local businesses, including links to their websites

1 Not at all
2 A little
3 A lot
8 Don't know/not sure/don't care
9 Refused

M5 If more local businesses sold their products or services online

1 Not at all
2 A little
3 A lot
8 Don't know/not sure/don't care
9 Refused

M6 Having some way to sign up for email notices about local products or services that you're interested in

1 Not at all
2 A little
3 A lot
8 Don't know/not sure/don't care
9 Refused

M7 Having a central directory online for all Seattle businesses

1 Not at all
2 A little
3 A lot
8 Don't know/not sure/don't care
9 Refused

M9 Do you use the Internet to work from home? [Do not read, note if they volunteer employment status and fill in Q8]

1 YES
2 NO
3 Don't work [skip to M11]
6 Unemployed [fill in Q8; skip to M11]
7 Retired [fill in Q8; skip to M11]
8 DON'T KNOW [skip to M11]
9 REFUSED [skip to M11]

M10 Is there any reason that you don't use the Internet to work from home [IF YES to M9, add "more than you do"]?

[Do not read, allow multiple response; note order]

0 No reason given

1 Internet too slow
2 Internet too unreliable
3 Internet too expensive
4 Policies at work make it difficult
5 Don't work
6 Unemployed [fill in Q8]
7 Retired [fill in Q8]
8 Too distracting at home
9 Want company of co-workers
10 Need to work with team, face-to-face
11 Type of job does not allow telecommuting
12 I don't want to do more from home
13 Other _____
88 DK
99 REF

M11 How valuable would it be for you to have significantly faster Internet service? Would it be…

4 Very valuable
3 Somewhat valuable
2 Not really that valuable
1 Not valuable at all
9 DK/NA

M12 How much, if at all, does using the Internet save you driving?

1 Saves a lot of driving
2 Saves some driving
3 Doesn't save any driving
4 Causes more driving
8 DK
9 REF

Q. DEMOGRAPHICS

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

[If no other people in HH from I11 and I12, skip to Q6; if no other adults in HH, skip to Q5]

Q1 How many people, including you, live in your house?

__ ENTER NUMBER IN HOUSEHOLD (RANGE = 0-99)
999 REF

Q2 **[IF Q1 > 1, continue; else skip to Q3]** How many children under the age of eighteen live in your household?

__ ENTER NUMBER OF CHILDREN
99 REF

Q4 Is your age 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

Q5 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

Q6 What is the primary language spoken at your home?

1 ENGLISH
2 SPANISH
3 OTHER [SPECIFY]_____
9 REFUSED

Q7 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 Q7primary).

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

Q7Prim Which do you consider your primary race? [select options from response to Q7)

1 African American,
2 Asian / Pacific Islander,
3 Caucasian,
4 Hispanic / Latino, or
5 Native American / American Indian
6 OTHER
7 Mixed race
9 REFUSED

[Interviewer note 19:

IF already mentioned retired (M9=5 or M10=7), skip to Q10.

If already mentioned "not working" (M9=3 or M10=5) use Q8a and then skip to Q10:

Q8. Do you work at a paying job?

1 YES [Skipt to Q8b]
2 NO
8 DON'T KNOW [Skip to Q10]
9 REFUSED [Skip to Q10]

If NO to Q8, omit bracketed part of Q8a

Q8a. [You mentioned earlier that you aren't currently working.] Are you a…(allow multiple response)

4 Student
5 Homemaker
6 Unemployed
7 Retired
8 Disabled
9 REFUSED

Q8b Would that be…(allow multiple response) ?

1 Full time
2 Part-time
3 Self employed
9 REFUSED

Interviewer note 20: If employed (Q8=1) AND if F2 indicates 5 days a week (for full time employed) or 3 days a week (for part time employed), ask Q9, otherwise skip to Q10.

Q9: Are you a computer professional or do you work in the technology field?

1 Yes
2 NO
3 Do not work
9 DON'T KNOW / REFUSED

Interviewer note 21: If Q8a=8, skip to Q11

Q10 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 Q12]**
3 DK **[skip to Q12]**
4 Ref **[skip to Q12]**

Q11 Does this disability impair your use of the Internet?

1 Yes
2 No
3 DK
4 Ref

Q12 Was your 2008 total household income…

1 Less than $20K
2 $20K to less than $30K
3 $30K to less than $40K
4 $40K to less than $50K
5 $50K to less than $75K
6 $75K to less than $100K
7 $100K or more
9 DK/REF

Those are all the questions we have at this time.

G3 Would you like to receive information from the City of Seattle about protecting your computer against unsolicited ads, viruses and other threats?

1 YES [autofill name in G4 if given in D4 and skip to H1; if not given in D4, continue to G4]
2 NO [SKIP to H1]
8 DK/Depends [SKIP to H1]
9 Ref [SKIP to H1]

G4 May I have your first name, please _____

The City 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]**

Q13 May I please have your first name?

[OPEN-ENDED RESPONSE]

Paper survey administered at focus groups

How would you like to <u>give</u> your opinions to the City on things you care about, like crime, parks, youth programs, housing, energy, and utilities?

- ❑ telephone survey
- ❑ email or online survey
- ❑ discussion on the Internet
- ❑ attending a city-wide meeting
- ❑ calling in to a meeting
- ❑ short text-message survey
- ❑ an in-person focus group
- ❑ attending a community meeting
- ❑ none
- ❑ other _____

How do you want to <u>get</u> information from the City on things you care about?

- ❑ from the radio
- ❑ from the newspaper
- ❑ from the city's website
- ❑ notices in the mail
- ❑ email notices
- ❑ from the TV news
- ❑ from other community members
- ❑ from the Seattle Channel
- ❑ from text messages on the cell phone
- ❑ recorded telephone or cell phone messages
- ❑ other _____

Other comments?

City of Seattle

Greg Nickels, Mayor

Department of Information Technology

Bill Schrier, Chief Technology Officer

Information Technology Participant Survey

Questions?

Contact Elizabeth Moore
(206 533 0231 or liz@appliedinference.com)

David Keyes at the Department of Information Technology
(206 386 9759) or David.Keyes@Seattle.Gov

Date: ____/____/____ Code _____

Which of these things do you have? ❑ Cable TV ❑ A cell phone
❑ A computer at home ❑ Internet access at home ❑ A home land line
❑ Internet access on a mobile device (iPhone, Blackberry)

Which do <u>you</u> use?
❑ Computer ❑ Internet ❑ Email ❑ Email attachments
How often do you use email? ❑ Daily ❑ Few times per week
❑ Weekly ❑ Less than weekly ❑ Never

How do you use a computer? ❑ Don't use it ❑ Search the Internet
❑ Contribute to blog or wiki ❑ Shop online ❑ Sell goods or services
❑ Online class /Webinar ❑ Finding information about local businesses
❑ Find health information ❑ Facebook/MySpace/LinkedIn
❑ Get information about my community

How skilled are you with computers? ❑ Not very skilled
❑ Know what I need to know ❑ Can figure out new programs as I need them
❑ Skilled (sometimes help others) ❑ Expert

Where do you use computers and the Internet? (Check where you do most of your computing) ❑ Home ❑ Work ❑ School
❑ Library ❑ Friend's or relative's ❑ Café or restaurant
❑ Community Center/Technology Center ❑ Other_____

If you have Internet at home, how does it come to your house?
❑ Dial up modem ❑ DSL ❑ Cable ❑ WiFi
❑ Premium/business class DSL or Cable ❑ Other_____

Are you satisfied with your Internet…

speed	reliability	cost	customer service
❑ Yes ❑ No	❑ Yes ❑ No	❑ Yes ❑ No	❑ Yes ❑ No

What <u>one</u> thing would most improve your Internet service?
❑ nothing ❑ speed ❑ price ❑ customer service
❑ reliability ❑ don't have Internet service ❑ other_____

How much, if anything, would you be willing to pay per month for Internet access or for *faster* Internet access?
❑ Nothing ❑ Less than $5 ❑ $5-$10 ❑ $10-$20 ❑ $20-$30
❑ $30-$40 ❑ $40-$50

Have you ever visited Seattle's website, Seattle.Gov? ❑Yes ❑ No

Have you ever seen the Seattle Channel on cable or on the Internet?
❑ No ❑ Yes, cable ❑ Yes, on the Internet

How do you prefer to make contact with the government?
❑ On the web or email ❑ In person ❑ By telephone ❑ By letter

These next questions are to help us understand more about the views of different subgroups. Your individual responses will not be identified.

Gender: ❑ a man ❑ a woman

Race or Ethnicity: _____

Language spoken at home: _____

Age: ❑ 18-25 ❑ 26-35 ❑ 36-50 ❑ 51-64 ❑ 65 or older

Others at home: ❑ Other adults ❑ Children younger than 18
❑ Children 18 and older

Employment: ❑ employed ❑ retired ❑ a homemaker
❑ a student ❑ disabled ❑ unemployed

Yearly income: ❑ Up to $20,000 ❑ $20,000-$30,000
❑ $30,000-$40,000 ❑ 40,000-$50,000 ❑ $50,000-$75,000
❑ $75,000 -$100,000 ❑ $100,000 or more

Education completed:
❑ Less than high school
❑ High school graduate/ GED
❑ Completed some college or a two-year degree
❑ Completed a BA/BS
❑ Completed post graduate work or degree

Focus Group Protocols

TABLE 1: ***Current computer and Internet use*** **Code of person being interviewed_____**

Main Question: How and where do you or your family use computers or the Internet?

Follow up questions for computer users

1. Have you used a computer for at least one year? ❑ Yes ❑ No
2. Do you have a computer at home? ❑ Yes ❑ No

If NO (computer at home)	If YES (computer at home)
Would you like one at home? ❑ Yes ❑ No Why or why not?	Is it good enough for your needs? ❑ Yes ❑ No If not good enough, what would be better?

3. Do you use a computer at a community center, library, computer lab, friend's or relative's? ❑ Yes ❑ No
   If YES, What is it like using the computer there?

   Is it enough for your needs or could something improve the experience? ❑ Enough ❑ Need better
   Please explain

4. Do you have any problems using computers and the Internet? ❑ Yes ❑ No (Describe)

4. What do you like best about having a computer or the Internet?

Follow up questions for NON computer users

1. Would you like to use a computer or the Internet? ❑ Yes ❑ No
   a. If YES, What would you like to use it for?
   b. What keeps you from using it?
2. Do you think you're missing out on anything not using computers? ❑ Yes ❑ No (Please explain)

3. Do you have any trouble getting information you need, staying in touch with people, or just getting things done without using a computer? ❑ Yes ❑ No (Please explain)

TABLE 2: ***Computer use goals and literacy*** **Code of person being interviewed_____**

1. Do you use the computer / Internet as much or for as many things as you'd like? ❑ Yes ❑ No
   If NO, What would you like to do with computers or the Internet that you can't do now?

   What stops you from using the computer or Internet the way you'd like or as much as you'd like?

2. What would help you to be able to do some of the things you'd like to do? Or what would improve your use of computers and the Internet?

3. Have you ever taken a computer class ❑ Yes ❑ No

If NO (computer class)	If YES (computer class)
What has stopped you from taking a class like that?	Was it useful? ❑ Yes ❑ No ❑ Don't remember Where did you take it? What kinds of things did you learn? What kinds of things did you want to learn?

4. Would you be interested in taking a class (or another class) on the computer or the Internet in the future? ❑ Yes ❑ No
   If YES, what would you like to learn – for whatever purpose - working, education, personal interest, just surviving?

TABLE 3: *Community Technology Gaps* **Code of person being interviewed_____**

1. What are all the reasons you can think of that you or other people you know don't use computers or the Internet, or don't use them much?

2. What would give people a reason to want to use computers or the Internet?

3. What are some things you think would help people use computers or the Internet or use it more? What would make it easier to use?

4. If you wanted to use or learn how to use computers and the Internet, where would you go?

5. What is your opinion of the computer centers around the city? Do you have suggestions for making them easier to use?

TABLE 4: *Communication with the City* **Code of person being interviewed_____**

1. If you could create a custom web page from the City to meet your needs, what would you like to have on it? (Alerts? Community events? Government?)

2. What would you like to know more about in your community that the city could share on its website or cable channel? (What are you interested in hearing or learning more about?)

3. What do you already know about the city's website, Seattle.gov and tv station, the Seattle Channel?

4. Would you like to get information *you* choose from the City by email or by text messaging? ❑ Yes ❑ No
What do you think of that idea?

5. What are some ways that might help people become more comfortable with communicating with the city on the Internet or by email or text messaging?

Focus Group Report Guide

Table 1. Current computing status
What are computers good for, whether you use them or not

Where do people use computers and how well does that work?

Table 2. People's computer-related needs and wants
What would you like to be able to do with computers, and what would enable you to do that?

What do other people in the community need?

Table 3. Technology gaps in the city and what would help
What are reasons people don't use computers and are they missing anything or being left behind?

For people who want to use computers, what would help?

Table 4. Communicating with the City
What would you like to find on the City's website?

What would you like to know more about in your community?

How would you like to get that information?