CRB

Profile of California Computer and Internet Users

By Rosa Maria Moller, Ph.D.

Prepared for Joint Hearing
Senate Energy, Utilities, and Communications Committee
and
Senate Select Committee on Economic Development

JANUARY 2000

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PROFILE OF CALIFORNIA COMPUTER AND INTERNET USERS

California is leading the nation in the use of information technology (computer and Internet), however, some regions and segments of the population are more likely to have access to this technology than others. The dichotomy between those that have and those that do not have access to electronic technology is referred to as the "digital divide."

Those analysts and policy-makers that focus on the digital divide consider the issue important because modern social interactions require increased use of computers and electronic networks. In particular, the information technology sector is a major contributor to U.S. economic growth. Since 1990, it has contributed 35 percent of the country's economic growth, a large share of it coming from California firms. By 2006, the Department of Commerce estimates that almost half the American workforce will be employed in industries that are either large producers or intensive users of information technology. The rate of growth of the Internet economy, a component of the information technology sector, is expected to accelerate dramatically during the next few years. The U.S. economy will continue benefiting from the new markets that electronic commerce is accessing.

To continue enjoying the benefits of information technology innovation and consequently economic growth, analysts think that it is important that all segments of the population fully participate in this process. The use of information technology could be an important tool for:

1) Learning about important topics such as health, science, entertainment, etc.
2) Increasing students' academic performance.
3) Expanding individuals' ability to successfully participate in the labor force. Sustained growth requires a skilled labor force (computer literate) and broader markets for online businesses. Adults can gain marketable skills through the dissemination of knowledge and programs for workforce development by the Internet.
4) Expanding markets and increasing competition as consumers use e-commerce. Businesses will benefit as they can offer their products to larger markets. Consumers will also benefit by reaching extended markets offering them a variety of services and commodities at better prices.
5) Assuring increased connectivity among various areas and individuals in the world.
6) Providing a key resource for the participation of individuals in political and other civic affairs.

Let's suppose that policymakers focus on the goal of expanding the use of information-technology by all Californians. In order for people to utilize the Internet, the following two conditions have to be met:

1) Access to computers or other equipment.
2) Access to the Internet and use of it.

This paper focuses on these two requirements. Using data from the December 1998 Current Population Survey (CPS), a survey containing information on computer and Internet use, we describe the characteristics of computer and Internet users and compare them to the U.S. It is important to remember that this picture could have changed during 1999.

ACCESS TO COMPUTERS AT HOME. The results of the analysis showed that, in 1998, half of Californians had computers at home. Computer access at home is important because those who own a home computer are much more likely than others to use the Internet.

Our analysis showed that computer access at home is associated with all of the following factors: 1) education of the head of the family, 2) family income, 3) geographic location, 4) the age of the user, and 5) the race/ethnicity of the head of the family.

Statistical tests indicated that:

- Education was the most significant of these factors. The highest proportions of persons that have access to computers at home are those in households where the householder has at least some college education.
- The race/ethnicity of the head of the family plays a significant role after the effects of income and education are taken into account. Hispanics are significantly less likely to have a computer at home than other groups, while California Blacks are more likely to have computers at home than Blacks in the U.S. as a whole.

We found that despite the fact that California leads the nation in the use of information technology, younger people in California (less than 18 years old) are less likely to have a computer at home than the U.S. younger population. In contrast, older Californians are much more likely to have a computer at home than in the rest of the nation. In both cases, these groups are less likely to have computers at home than other age groups.

INTERNET USE. Besides having a computer or a Web-TV, a second requirement for people is to access the Internet and use it. According to the CPS survey, only 23.3 percent of California population accessed the Internet, either through a computer or a Web-TV. This means that less than one half of persons with home computers access the Internet.

a) ***Who Accesses the Internet in California?*** We found that the demographic and socioeconomic profile of those that use the Internet is similar to the profile of those who have computers at home. However, the relationships between the socioeconomic and demographic factors and Internet use were statistically weaker.
   Results indicate that the higher the income group, the higher the proportion of persons that access the Internet. Only one third of the persons with family income of less than

$30,000 that have computers at home use the Internet, compared to 60 percent in households with family income of more than $75,000.

A similar pattern is found with education. The higher the level of education of the householder, the more likely he or she will access the Internet. When the householder's level of education is a high school diploma or less, only one-third use the Internet. This compares to an over 50 percent access for persons living in households where the householder had a BA or more.

Comparing age groups, the lowest proportion of persons with computers at home that access the Internet are found among young people of less than 14 years old, (22 percent) and those over 50 (39 percent). Differences among other age groups are not significant (more than 56 percent use it).

Hispanics and other minorities are less likely than Whites to access the Internet once they have a computer at home. Blacks are almost as likely to use the Internet from home as Whites.

There are also differences in Internet access depending on the geographic area. In the Bay Area, more than half of the persons with computer access at home connect to the Internet compared to less than 45 percent elsewhere in the state.

Besides the home there are other places to access the Internet, although Californians are significantly less likely to take advantage of those opportunities. The CPS survey showed that about 17 percent of Californians (more than five million) accessed the Internet from places outside the home with 60 percent of them using it at the workplace. The proportion of Californians accessing the Internet through schools and libraries was slightly lower than the national average.

b) ***Are There Differences in the Use of the Internet Among Those that Have Computers?*** We also looked at the profile of those that have the equipment to access the Internet and actually use it. We found that once people have Internet access, their level of Internet use is nearly independent of their socioeconomic and demographic characteristics. This is particularly true when looking at persons from various income groups where use of the Internet is essentially equal, once they are connected.

The purposes for Internet use are still fairly limited. The majority use it for e-mail. A much smaller proportion of Californians uses the Internet for shopping or other commercial activities. This proportion is also lower than the national average (1.7 percent versus 3.8 percent).

WHAT HAVE OTHER STUDIES FOUND? Regarding the importance of socioeconomic factors associated with computer and Internet access, the results of this study are fairly consistent with other studies on the subject. For example, a recent report by the U.S. Department of Commerce,[1] found that nationwide, minorities, low-income

persons, the less educated, and children of single parent households have less access to information technology equipment. This is also true for people living in rural areas. Based on a comparison with two previous studies, this report pointed out that some of these differences in information technology access have been widening over time.

Other California studies have shown similar results to our study which was based on more than 10,000 cases. A 1999 survey conducted by the California Public Policy Institute (sample size 2,013) showed large differences by ethnic origin (Hispanics/non-Hispanics), income, and location.[2] The survey indicated that 74 percent of all Californians use a computer at home, work or school (six percent above the national average). However, Hispanics were 20 percent less likely to use a computer and one-half as likely to use the Internet as Whites. They also found that both computer use and ownership increase with income and educational levels, but decrease with age.

Another California study by the University of California, Riverside[3] also found unequal patterns in computer and Internet access associated with social characteristics. The survey of 2,100 residents of Riverside and San Bernardino counties was conducted in early 1999. Hispanics appeared to be considerably less likely to have a computer at home, while Asian households had the highest rates of household computers. The study found a strong relationship between higher income, higher education and computer use. The age of the user was also important; respondents between 36-45 years old had the highest proportion of computers at home.

The following sections present our findings in detail. The last section (section 6) suggests some policy measures that may help integrate various sectors to the use of information technology.

Section 1. WHO HAS A COMPUTER AT HOME IN CALIFORNIA, AND HOW DO WE COMPARE TO THE NATION?

Computer access at home is important because individuals who own a home computer are more likely to have Internet access and use it. California is among the nation's leaders in the number of households with computers at home. As of December 1998, 47.5 percent of California households had a computer compared to the national average of 42.1 percent.[4]

But in California, like in the rest of the nation, certain individuals are more likely to have a computer at home than others. The probability of having a computer at home varies according to the income group, educational level, age group, and race and ethnicity of the individual.

THE INCOME FACTOR

A statistical analysis comparing the relative effect of education of the head of the family, race/origin of the head of the family, geographical location, and age of the user, found income to be a significant factor, once the effect of all other factors were taken into account. *However, the education of the head of the family appears to be more significant than income.*[*]

Compared to the nation, California has a higher proportion of persons with computers in the lower income groups. Comparing by income groups, the distribution of persons with computers at home is similar in California and the nation as a whole. Families with higher income levels are more likely to have computers at home. The highest proportion of persons with home computers is found in the income group of more than $75,000. Income groups below $30,000 have the lowest proportion. There are about 10.5 million Californians with family incomes of less than $40,000 that do not have a computer at home.

[*] Results from a logistic regression to explain computer access as a function of the factors discussed in this paper.

Table 1
Persons with a Computer at Home
By Family Income

(Civilian Population Older than 3)

	California	*U.S.*
Less than $15,000	18.8%	16.0%
$15,000-Less than $30,000	31.8%	28.7%
$30,000-Less than $40,000	46.3%	45.0%
$40,000-Less than $75,000	66.8%	64.8%
More than $75,000	82.5%	83.2%

Source: CRB analysis of December 1998 CPS

THE LEVEL OF EDUCATION OF THE HEAD OF THE FAMILY

The distribution of persons with computers at home by education of the head of the family (or householder) is similar in California and the nation as a whole. Persons that live in households where the head of the family has attained higher levels of education are more likely to have computers at home than those where the householder is less educated. A significantly higher proportion of persons with home computers is found in households where the householder has at least some college education. Compared to all other factors, the education of the head of the family appears to be the most significant factor associated with the availability of computers at home.

Table 2
Persons with a Computer at Home
By Level of Education of the Householder

(Civilian Population Older than 3)

	California	*U.S.*
No HS Diploma	18.4%	16.3%
HS Diploma	39.0%	38.0%
Some College	60.5%	55.9%
Bachelors	76.6%	73.7%
MA or more	79.2%	79.1%

Source: CRB analysis of December 1998 CPS

THE USER-AGE FACTOR

There are 5.2 million persons between 3-18 years old that do not have a computer at home in California. *The younger population in this state is less likely to have a computer at home than the older age groups and less likely to have a computer at home than the U.S. younger population as a whole*. This could be explained in part by the fact that California has a high proportion of minorities, particularly Hispanics, a population that

tends to have a younger age structure, lower income, and lower education than other groups.

Another interesting finding is that Californians older than 50 have a higher probability of having a computer at home than the national average. The user age is still a significant factor when all other factors such as income, education, race, and geographic region are taken into account.

Table 3
Persons with a Computer at Home
By Age of the Person

(Civilian Population Older than 3)

	California	*U.S.*
Less than 14 years	47.0%	51.3%
14 – 18 years	54.9%	59.6%
19 – 25 years	44.5%	45.8%
26 – 35 years	52.3%	49.2%
36 – 50 years	58.7%	57.8%
More than 50 years	41.7%	33.6%

Source: CRB analysis of December 1998 CPS

THE RACE/ETHNICITY FACTOR

Compared to other race/ethnic groups, Whites and Asians are more likely to have computers at home in both California and the U.S., while Hispanics are significantly less likely to have a computer at home than other groups. The proportion of Whites with computers at home is substantially higher in California than in the nation. *The probability that Blacks have computers at home is higher in California than in the U.S. as a whole.*

In California, there are 7.2 million Hispanics that do not have home computers. The low proportion of home computers for Hispanics should not be that surprising since Hispanics tend to have lower income and education than other groups, as well as a younger age structure. However, a statistical analysis that takes all these other factors into account still indicates that race/ethnicity is very important in the explanation of availability of computers at home.

Table 4

Persons with a Computer at Home
By Race/Origin of Householder

(Civilian Population Older than 3)

	California	*U.S.*
White	62.3%	54.9%
Asian	58.2%	59.3%
Hispanic	28.5%	27.4%
Black	37.0%	26.6%
Other	36.1%	37.5%
Hispanic	28.5%	27.4%
Non-Hispanic	59.0%	50.9%

Note: Totals for White, Asian, Black, or Other exclude Hispanics
Source: CRB analysis of December 1998 CPS

The Tomas Rivera Policy Institute (TRPI) conducted focus groups in the summer of 1997 to gain insight into why Hispanics are less likely to own a computer than non-Hispanics in the same income group. Going beyond socioeconomic characteristics such as educational level and occupational status, the TRPI explored attitudes and opinions about computers among Hispanic heads of households to provide some understanding on this issue. The study found that Hispanics agree on the advantages of owning a computer. Nevertheless, they were worried about finding the right brand, the components they should buy, and whether such a purchase would be justifiable since computers need to be updated frequently. A substantial number of respondents said they believed that using a computer all the time made people antisocial. Many participants were worried about knowing how to use many computer applications. Lack of familiarity, exposure, and direct experience with computers among Hispanics result in feelings of anxiety, apprehension, and fear over the role computers play in the lives of their children.

GEOGRAPHIC LOCATION

Previous studies have found that regardless of other factors, Americans living in rural areas are lagging behind in the use of information technology, including Internet access. The National Telecommunications and Information Administration (NTIA) study for the U.S. found that at the lowest income levels, those in urban areas are more than twice as likely to have Internet access than those earning the same income in rural areas.

Due to problems with the distribution of the sample that do not allow us to obtain representative data at the county level, we aggregate the cases in three main geographic

areas, the Bay Area, Southern California, and the rest of California.[†] We found that geographic location matters. The Bay Area has a significantly higher concentration of persons with computers at home, 32 percent higher than the U.S. and 28 percent higher than California on average. *Clearly the probability of an individual having a computer at home is lower in less urbanized areas*. Our statistical tests also found geographic location to be significant, after all other factors were taken into account.

Table 5
Persons with a Computer at Home By Geographic Area

(Civilian Population Older than 3)

U.S.	48.1%
California	49.7%
Bay Area	63.6%
Southern	47.9%
Other California	42.4%

Source: CRB analysis of December 1998 CPS

[†] The CPS surveyed only 24 California counties. The Bay Area includes: Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Sonoma Counties. Southern California includes: Los Angeles, Orange, Santa Barbara, Ventura, and San Diego Counties. Other California includes: Butte, El Dorado, Kern, Merced, Placer, Sacramento, San Joaquin, Stanislaus, Tulare, Yolo, Monterey, and San Luis Obispo Counties.

Section 2. WHO USES THE INTERNET AT HOME IN CALIFORNIA AND HOW DO WE COMPARE TO THE NATION?

The proportion of persons that access the Internet at home is much lower than the proportion of persons having a computer at home. This is true for California and the nation. In California, as of December 1998, 23.3 percent (7.4 million persons) of the civilian population older than three years used the Internet at home, above the national proportion of 21.4 percent. These persons are connected to the Internet either through a computer and/or Web-TV.

THE INCOME FACTOR

A statistical analysis controlling all factors found income to be a significant factor determining the probability of individuals accessing the Internet at home. For all income groups, the use of Internet at home in California is higher than in the nation as a whole. Persons with family income below $40,000 were low users of the Internet at home. Almost half of the persons with family income above $75,000 use the Internet at home. Comparing tables 1 and 6, we see that less than one-third of the persons with home computers living in households with family income of $30,000 or less use the Internet. This compares to almost 60 percent of the persons with family incomes above $75,000.

Table 6
Percent of Persons that Access the Internet at Home By Family Income

(Civilian Population Older than 3)

	California	*U.S.*
Less than $15,000	6.0%	5.5%
$15,000-Less than $30,000	10.5%	9.7%
$30,000-Less than $40,000	18.8%	16.9%
$40,000-Less than $75,000	29.3%	28.9%
More than $75,000	46.9%	45.9%

Source: CRB analysis of December 1998 CPS

THE LEVEL OF EDUCATION OF THE HEAD OF THE FAMILY

Education of the head of the family is a major determinant in the probability of an individual having computer access at home and individuals who own a home computer are much more likely than others to use Internet technology. Persons living in families where the householder has at least some college education are much more likely to use the Internet at home. However, the proportion of persons accessing the Internet is much lower than the proportion of persons that have computers at home, no matter what the level of education of the householder. From tables 2 and 7, we can infer that less than one-third of persons use the Internet in households where the householder has educational

levels of high school or less. This compares to more than 50 percent of persons where the householder has a BA or more.

Table 7

Percent of Persons that Access the Internet at Home By Education of the Householder

(Civilian Population Older than 3)

	California	*U.S.*
No High School (HS) Diploma	4.1%	3.7%
HS Diploma	12.2%	13.5%
Some college	28.6%	24.9%
Bachelor	38.4%	37.9%
MA or more	49.8%	44.7%

Source: CRB analysis of December 1998 CPS

THE USER-AGE FACTOR

The age structure of persons with Internet in California is similar to the nation. Persons younger than 14 years old and more than 50 are much less likely to access the Internet at home than other age groups. A comparison of tables 3 and 8 shows that 56 percent of persons between 15 and 50 with computers at home connect to the Internet. The age groups below 14 years old and the older groups (above 50 years old) have a much lower proportion (22 and 38 percent respectively).

Table 8

Percent of Persons that Access the Internet at Home By Age Group

(Civilian Population Older than 3)

	California	*U.S.*
Less than 14 years	10.3%	51.3%
14 – 18 years	30.8%	59.6%
19 – 25 years	25.3%	45.8%
26 – 35 years	29.3%	49.2%
36 – 50 years	31.5%	57.8%
More than 50 years	16.0%	33.6%
All	23.3%	21.4%

Source: CRB analysis of December 1998 CPS

THE RACE/ETHNICITY FACTOR

Compared to other race/ethnic groups, Hispanics have the lowest proportion of persons accessing the Internet at home as of December 1998. In California, where the percent of

Hispanics is about three times higher than in the rest of the country, the number of Hispanics using the Internet is slightly lower than the national average, where Hispanics represent about 11 percent of the population. This contrasts with the use of the Internet in California by non-Hispanics, where it is significantly higher than the national average. About one-fourth of Hispanics that have computer access at home connect to the Internet, compared to half of Whites. (Tables 4 and 9).

Table 9

Percent of Persons that Access the Internet at Home By Race/Origin of the Householder

(Civilian Population Older than 3)

	California	*U.S.*
White	32.3%	25.7%
Asian	22.5%	23.8%
Hispanic	7.4%	8.2%
Black	14.0%	8.7%
Other	28.0%	14.4%
Hispanic	7.4%	8.2%
Non-Hispanic	28.9%	23.1%

Note: Totals for White, Asian, Black, or Other exclude Hispanics

Source: CRB analysis of December 1998 CPS

GEOGRAPHIC LOCATION

Again, the proportion of persons using the Internet is substantially lower than the proportion of persons with computer access in all three regions. Still, persons in urbanized places have a higher probability of using the Internet at home. The Bay Area leads the state in the proportion of persons using the Internet at home. This result is also consistent with the findings related to the availability of computers at home.

The proportion of persons with computer access at home that actually use the Internet is also higher in the Bay area than in the other two California regions (52 percent versus 45 percent).

Table 10

Percent of Persons that Access the Internet at Home By Region

(Civilian Population Older than 3)

California	23.3%
Bay Area	33.0%
Southern	21.0%
Other California	19.1%

Source: CRB analysis of December 1998 CPS

Section 3. DO THOSE WHO CAN ACCESS THE INTERNET ACTUALLY USE IT?

In this section we look at individuals in households that have Internet access. The objective is to evaluate whether there are differences among groups with different demographic and social characteristics in Internet use, once they actually have the tools to access it at home. We found that for the most part, regardless of the socioeconomic and demographic characteristics of the people, once they have Internet access, they use it.

THE INCOME FACTOR

Regardless of income, persons living in a household with Internet access are equally likely to use the Internet. This is true for California and the U.S.

Table 11
Percent of Persons with Internet Access Using Internet at Home By Family Income

(Civilian Population Older than 3)

	California	*U.S.*
Less than $15,000	76.2%	77.3%
$15,000-Less than $30,000	76.5%	74.5%
$30,000-Less than $40,000	72.0%	73.9%
$40,000-Less than $75,000	72.0%	73.8%
More than $75,000	76.6%	76.1%

Source: CRB analysis of December 1998 CPS

THE LEVEL OF EDUCATION OF THE HEAD OF THE FAMILY

Education still makes a difference in the use of Internet at home among those persons that have Internet access, but this effect is much lower than for computer availability. Persons living in households where the head of the family is highly educated have more probability of accessing the Internet at home.

Table 12

Percent of Persons with Internet Access Using Internet at Home By Education of the Householder

(Civilian Population Older than 3)

	California	*U.S.*
No High School (HS) Diploma	59.7%	60.6%
HS Diploma	64.9%	69.3%
Some college	74.5%	75.5%
Bachelor	76.0%	76.8%
MA or more	81.4%	78.7%

Source: CRB analysis of December 1998 CPS

THE USER-AGE FACTOR

With the exception of children under 14 years old and people over 50, there are no significant differences in the probability of using the Internet among various age groups, once they have the tools for Internet access at home. In this regard, California patterns of Internet use are similar to the national patterns. People between 26 and 35 years old in California tend to access the Internet less than the national average.

Table 13

Percent of Persons with Internet Access Using Internet at Home By Age Group

(Civilian Population Older than 3)

	California	*U.S.*
Less than 14 years	46.7%	47.4%
14 – 18 years	85.3%	86.4%
19 – 25 years	84.5%	82.3%
26 – 35 years	83.2%	87.3%
36 – 50 years	80.4%	80.6%
More than 50 years	67.2%	69.2%

Source: CRB analysis of December 1998 CPS

THE RACE/ETHNICITY FACTOR

Even those Hispanics that have Internet access tend to use the Internet less than non-Hispanics. Asians with Internet access also tend to use the Internet at home less than other ethnic groups. This is true in California and the U.S. Generally, Blacks are more likely to access the Internet than other minority groups, once they have access to it. But the differences are modest.

Table 14

Percent of Persons with Access Using Internet at Home By Race/Origin of the Householder

(Civilian Population Older than 3)

	California	*U.S.*
White	76.3%	75.4%
Asian	66.6%	66.5%
Hispanic	67.3%	67.4%
Black	73.6%	74.1%
Other	80.4%	70.3%
Hispanic	67.3%	67.4%
Non-Hispanic	74.7%	74.9%

Note: Totals for White, Asian, Black, or Other exclude Hispanics

Source: CRB analysis of December 1998 CPS

GEOGRAPHIC LOCATION

The proportion of persons living in households with the equipment to access the Internet at home that actually use it is slightly higher in the Bay Area than in the rest of California.

Table 15

Percent of Persons with Access Using Internet at Home, By Region

(Civilian Population Older than 3)

California	73.9%
Bay Area	77.0%
Southern	72.7%
Other California	72.2%

Source: CRB analysis of December 1998 CPS

Section 4. WHAT OTHER SOURCES OF INTERNET ACCESS DO CALIFORNIANS USE?

In this section we discuss outside home sources of Internet access and Internet uses. The most likely alternatives to home use of the Internet are: 1) the work place, 2) someone else's computer, 3) schools or other educational institutions, 4) libraries, and 5) community centers. About 17 percent of Californians (more than five million) accessed the Internet from places outside the home. The three most important sources are the work place, schools, and someone else's computer (friends and relatives). In 1998, the proportion of Californians accessing the Internet through libraries was slightly lower than the national average.

Table 16
Use of Internet Outside Home

	California	*U.S.*
Percent of persons Older than 3	16.1%	17.0%
Sources:		
Work	60.3%	56.3%
School (K-12)	19.1%	21.8%
Other School	10.2%	10.9%
Library	6.4%	8.2%
Community Center	1.1%	0.6%
Someone else's computer	12.8%	13.6%
Other	3.8%	2.8%

Source: CRB analysis of December 1998 CPS

Section 5. HOW DO CALIFORNIANS USE THE INTERNET?

When Californians were asked about the three main reasons for accessing the Internet at home, they indicated that by far, the most important use was electronic mail. This is similar to the U.S. as a whole. The second most important use was for educational purposes and searching for information. A much smaller proportion of Californians used the Internet to shop or other commercial activities (1.7 percent versus the national average of 3.8 percent). This picture could have changed substantially in 1999.

Table 17
Three Most Important Internet Uses by Persons with Internet Access at Home

	California	*U.S.*
For E-mail	64.4%	65.3%
To take educational courses, do research for school	13.6%	12.1%
To search for information	6.8%	6.2%
To check news, weather or sports	4.9%	0.4%
To do job-related tasks	4.6%	7.0%
Other	1.9%	1.0%
To shop, pay bills, or other commercial activities	1.7%	3.8%
To search for jobs	1.2%	1.5%
Games entertainment, fun	0.7%	2.2%
For making phone calls	0.3%	0.6%

Source: CRB analysis of December 1998 CPS

Section 6. WHAT POTENTIAL POLICY OPTIONS COULD HELP ACCELERATE COMPUTER ACCESS AND USE?

The California information technology sector is a very important engine of economic growth for both the state and the nation. With globalization, competition is keen among firms and individuals. Those with higher skills have a higher probability to compete in the future economic systems and benefit most in the current revolution in communications. Computer and Internet access are important in enhancing the educational level of the population and promoting market expansion. Our analysis shows that certain groups are falling behind the information technology race. Factors such as educational level and cultural attitudes seem particularly important in promoting the integration of various groups within the current economic system. Data show that the Hispanic community is lagging behind other groups in computer and Internet access. Hispanics are one of the fastest growing segments in California population. The integration of this group into the information technology revolution could be of great importance.

If policymakers choose to, there are three types of policy actions that would help reduce the digital divide:

1. Those increasing awareness in the low-income communities of the benefits and possibilities brought about by the use of information technology.
2. Those that enhance the use of information technology by raising the level of computer and Internet-use skills of the population.
3. Those that provide public access to information technology equipment.

These actions can be implemented through a variety of policies. Here are some examples:

States and local governments may consider providing support to community-based organizations for the creation of technology centers. Centers located in areas where the population is less likely to have access to technology (low-income neighborhoods with less educated population and a higher proportion of minorities) could play a fundamental role. These centers can offer a variety of services from providing a place for neighbors to use computers and access the Internet to educate and orient people on information technology practices and the consequent benefits to users. These types of programs are also more likely to provide computer-Internet training that relate to the specific needs and level of skills of their clients.

Community-based organizations are well positioned to bring different sectors and resources together within their communities. In general, they can better adapt their programs to the culture and level of education of their population. Examples of this type of effort already exist. For example, the California Wellness Foundation has a six-million-dollar demonstration project to attract clients into their information technology centers.

The State may consider promoting public-private partnerships to create community-based programs to enhance computer and Internet use. These programs could be addressed towards low-income communities or those with a high proportion of Hispanics and/or other minorities. Public-private partnership types of programs could range from the provision of hardware and equipment to training or designs of relevant content that truly relate to the culture of their communities.

The State may consider providing incentives for the creation of Internet content that appeals to low-income communities and specific race/ethnic groups such as Hispanics. Individuals need to understand the implications of the use of information technology in their lives and relate to the contents accessed by the Internet. If people are unable to find content relevant to their experience, culture and/or interests, it is unlikely that they will use the Internet. Once the incentives for individuals to access information technology tools are in place, the integration process will accelerate.

Policymakers may consider providing funds to increase public access to computers and the Internet through educational centers, libraries, and other public places.

The State may direct a portion of the State budget for Schools and Education (including Community Colleges and Higher Education) to finance new information technology equipment and training in computers and Internet use. Governor Gray Davis' budget has already included significant funding directed towards enhancing information technology use in schools.

Policymakers may redirect a portion of existing workforce-development funds or other pertinent programs towards technology training.

Policymakers may consider ways to promote training via adult classes in schools, churches, and community centers. Funds could be obtained from state and/or local sources as well as through private-public partnerships.

Policymakers may provide tax-credit incentives to low-income families that purchase a computer.

There may be a need for a consumer report on information technology for Hispanics. A consumer report in Spanish, in simple terms, on brands and the pros and cons of various types of computer software or hardware, in simple terms, would help Hispanics to decide on the appropriate equipment to purchase.

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ENDNOTES

[1] U.S. Department of Commerce, National Telecommunications and Information Administration (NTIA). "Falling Through the Net: Defining the Digital Divide." This report describes the demographic and regional patterns of U.S. computer and Internet users. The study relied on the December 1998 Current Population Survey (CPS) administered by the Census Bureau.

[2] Public Policy Institute of California (Mark Baldassare). "PPIC Statewide Survey: Californians and Their Government." September 1999.

[3] Neiman, Max and Richard Chabran. "Unequal Patterns of Cyber Access in the Inland Empire." University of California, Riverside. June 1999.

[4] U.S. Department of Commerce. National Telecommunications and Information Administration. "Falling Through the Net: Defining the Digital Divide." July 1999.