



Cutting the Cord

Households Dropping Land Lines for Cell Phones

by Jenny Donohue and John Baldridge

The Current Trend

Montana's landline telephone service providers are losing active lines at an annual rate of 2 to 7 percent, estimated Geoffrey Feiss, general manager of the Montana Telecommunications Association. At the same time, Montana's largest wireless provider, Verizon, invested more than \$125 million in growing Montana's wireless network over the past five years and reported wireless phone usage up an average of 32 percent in 2006.

Qwest, Montana's largest land-line provider, reported an almost 8 percent decrease in active land lines between 2006 and 2007, while during that same period, Qwest's wireless subscribers grew by almost 5 percent in the company's 14-state coverage area.

Nationwide, consumers are increasingly relying on wireless service as their primary phones, some even eliminating land-line service all together. The National Center for Health Statistics reported 15.8 percent of American households using wireless service as their only telephones as of May 2008. Andrew Arthur, vice president of market solutions for the research firm Mediamark Research and Intelligence, found that number to be as high as 16 percent in 2007. Still, the

majority of households, about 70 percent, had both wireless and land-line service.

In 2007, American households spent more on wireless phone services than land lines for the first time, reported the Associated Press. But, even more interesting, Arthur said, is that the total penetration of cell phones is now higher than land lines, meaning that the average household is more likely to have a cell phone than a land line. While not all land line losses in Montana can be directly linked to increased cell use, the correlation is significant. And although Montana's sparse population poses limitations to wireless coverage, most industry officials agree that statewide trends closely mirror what is happening nationwide.

"Montana has a tendency to think of itself as different from the rest of the country. But in reality, the economy is pretty free flowing, and we're not [so different]," said Dave Gibson, president of Montana Qwest. When it comes to consumer goods, Gibson said, Montana closely aligns with the rest of the country, and wireless trends are no different.

It is difficult to break down the numbers into state-by-state figures without compromising their credibility, especially in a state as sparsely populated as Montana, Arthur explained, because, as the number of people surveyed gets smaller, the

data become increasingly less reliable. But, in the region of Montana, Idaho, Wyoming, and Colorado, Arthur found that 20 to 25 percent of people had gone wireless-only.

"The trend in Montana is essentially the same as nationally," said Jonathan Foxman, president and CEO of Cellular One, formerly Chinook Wireless. The benefits of wireless service, including mobility, security, and convenience, are compelling, Foxman said. "When the quality and coverage is sufficient that people can rely on wireless, they begin to question why they need wire-lines."

In Montana, however, the quality and coverage haven't yet reached that point, he said. Therefore, not all Montanans have the option to go wireless. For this reason, Montana is behind the adoption curve compared to more metropolitan states.

But, he said, it is catching up quickly. Cellular One, Chinook Wireless at the time, built 50 new cell towers in Montana in 2007, and Foxman is convinced that the demand for wireless coverage in Montana is growing along with the rest of the nation.

Simply put, "It's going to happen," said Gibson of the trend toward wireless in Montana. To keep their customers, Montana land-line providers, large and small alike, must offer a variety of options, including wireless in some cases. Other services such as high-speed Internet and Voice Over Internet Protocol (VOIP), basically phone services through the Internet, also offset the loss of residential land lines. "Right now, there are more and more choices. Consumers have options, and that's a good thing," Gibson said.

Still, much of Montana remains without reliable cell service. Montana has a lot of rural miles to cover, said Bonnie Lorang, general manager of Montana Independent Telecommunications Association, and larger companies tend to follow the highways and urban centers. "Typically in Montana it has been co-ops that work to provide services to all those rural miles."

The trend hasn't significantly affected Range Telephone Cooperative, which provides land-line service to parts of eastern Montana and northeastern Wyoming, said CEO Robin Stephens. Range operates in places that companies like Qwest wouldn't go, he said, and most areas don't have wireless service.

Still, even Range has seen an annual 2 to 4 percent decrease in active land lines for the past few years, Stephens said. But other services, such as high-speed Internet, offset the losses, and he doesn't expect them to grow beyond 4 percent. The recent oil and gas boom is bringing more new customers to eastern Montana every day, most of whom won't have the option to go wireless-only. The added revenue will continue to offset the losses and keep them from growing even as more customers drop their land lines in favor of wireless, he explained.

Range did build wireless towers in 2000 and operated them for two and a half years. Ultimately the venture proved too expensive. "You have to invest millions of dollars for only 1,000 customers, which is why big companies like Verizon and Alltel don't do it," Stephens said.

But Mid-Rivers Communications, another telephone cooperative operating in eastern Montana, has been providing wireless service since 1996, said General Manager Gerry Anderson. Because larger companies don't provide services in rural Montana, Mid-Rivers is the only company operating towers in most of its coverage area, he said.

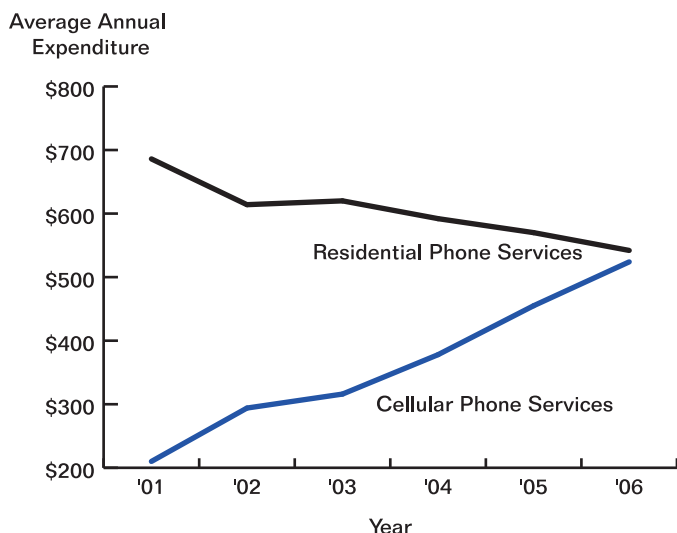
Yet even Mid-Rivers is slowly beginning to see an impact from cell use. Most Mid-Rivers customers still have both a land line and a wireless plan, Anderson said, and very few use their wireless phones as their primary phones.

"Generally in Montana, wireless is a complement to, not a substitute for land lines," said Lorang. Companies that provide phone service often provide a variety of other services, such as high-speed Internet, which requires either a phone or cable line to operate. Customers who are receiving other services are more likely to keep their phone lines, she said.

This doesn't mean land-line providers are unaffected by the increase in wireless use.

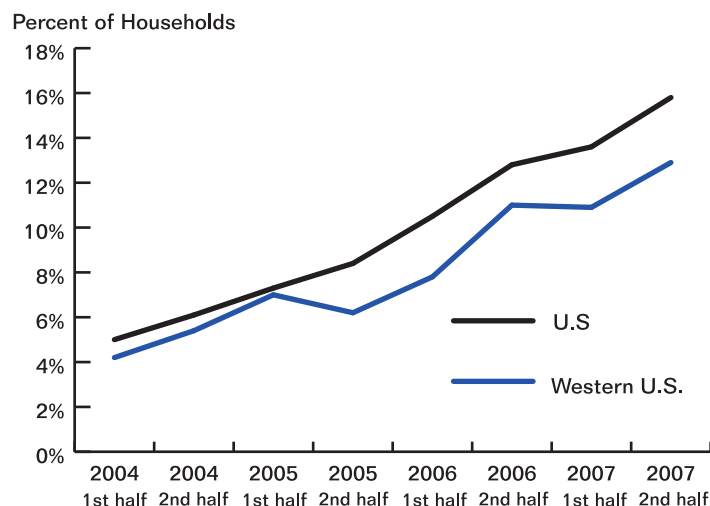
"You don't have to lose customers to lose revenue," said Feiss. While land-line providers are retaining the majority of their customers, they are losing long-distance revenues to wireless providers, which are a major component of land-line profits, he said. The price of long distance calling has decreased notably over the years. According to AT&T, the first transcontinental phone calls in 1915 cost \$20 for the first three minutes, the equivalent of approximately \$418 today.

Figure 1
Telephone Expenditures
2001 - 2006



Source: Bureau of Labor Statistics.

Figure 2
Wireless Telephone-Only Households
in the United States, 2004-2007



Source: National Health Interview Survey, July-December 2007. National Center for Health Statistics, www.cdc.gov/nchs/nhis/nhis.htm.

“There is no fundamental reason why people would want a phone tethered to a location.”

The first transatlantic calls from the United States to London cost \$75 for the first three minutes in 1927, the equivalent of approximately \$910. Today AT&T offers calls to London for nine cents a minute and unlimited calls within the country for only \$30 a month. But long distance rates still can't compete with most wireless plans, which offer free long distance.

What the Future Holds

Like the rest of the country, most Montanans have both wireless and land line phone service. The question is: Now that they have both, will consumers begin to choose one over the other? “I can't predict the future,” said Arthur, “but dual-technology households have flat-lined. They are holding steady at around 70 to 72 percent. The trends suggest that number will now begin to drop.” And it will drop because people are dropping their land lines, he said.

“The question isn't if, but over what time frame,” said Foxman. “There is no fundamental reason why people would want a phone tethered to a location.”

The Appeal of Land Lines

However, some argue there is indeed a fundamental reason for a stationary phone: reliability in emergency situations. “The most important factor to consider when deciding whether to keep your land line is the different ways your local 9-1-1 center processes land-line versus wireless calls,” wrote MSNBC's Consumer Man, Herb Weisman in 2006.

Most land lines provide the 9-1-1 center with the caller's physical street address. Cell phones provide latitude and longitude coordinates, accurate within 50 to 300 meters, according to Federal Communications Commission (FCC) requirements. FCC regulations will require wireless companies to provide more specific information by 2012, but for now, Weisman said, a number of wireless providers have been granted waivers for meeting the current 50- to 300-meter requirement.

Even when cell phones provide accurate coordinates, they cannot specify which floor someone is on in a multiple story building. And some cell phone companies use GPS systems that don't always work indoors because they can't “see” the satellites.

“A caller using a wireless phone could be calling from anywhere. While the location of the cell site closest to the caller may provide a very general indication of the caller's location,



that information is not usually specific enough for rescue personnel to deliver assistance to the caller quickly,” says the FCC Web site.

Wireless users make 50 million 9-1-1 calls each year, an estimated 30 percent of the total, says the FCC. The mobility of wireless does offer portable security that is otherwise unavailable. But they do not provide comparable security when contacting emergency services from home.

“No matter what your situation is, if you have access to a land line, use it to contact 9-1-1,” said Becky Berger, 9-1-1 program manager for the State of Montana. There is always a chance that a cell call will be dropped, Berger said. That is why Montanans should always state their phone number and location first thing, even before describing the emergency, when calling from a cell phone.

In Montana, all but nine of the 55 dispatch centers were equipped to receive location information from land-line calls as of May 1, down from 11 at the end of February. But 29 dispatch centers still did not have the technology to determine the location of wireless calls, and only 8 of those were in the process of doing so. Still, significant progress has been made; 10 centers have acquired wireless 9-1-1 capabilities from the end of February to the beginning of May. There has been a big push to upgrade all dispatch centers in Montana, and all centers were scheduled to be equipped for land-line locations by June 2008.

Before he worked for Qwest, Gibson said, he decided that his home will always have a corded, land-line phone to ensure his family has access to emergency services even in the event of power failure. Cordless phones, the popular choice for most household land lines, do not work in the event of a power outage, whereas corded phones do. “I have kids,” he said, and the security offered by land-line phones is not only compelling to him but one of the reasons land-line phones will remain competitive.

“There will always be a place for wire-line,” Feiss said. Even while wireless coverage is increasing, he explained, it still has to connect to a land line or cable at some point. Furthermore, most industry officials agree that the trend toward wireless is limited to households. “The industry will certainly evolve, and there will be more people dropping their land-line service. But that will be mostly at the retail level. We won’t see the same trend at the wholesale and business levels, where the bandwidth, speed, reliability, and quality provided by land lines are necessary.”

Gibson pointed out that some businesses are switching to VOIP. But, he said, while the industry is evolving, that is to say it is no longer just copper wire, it is still wire-line based. The technology needed to operate a medium to large business phone system still demands land-line service, he said, and we won’t see that change in the foreseeable future.

Table 1
Montana 9-1-1 Capabilities

County	Equipped to Receive Land Line Caller Locations	Equipped to Receive Wireless Caller Locations
Anaconda/Deer Lodge	No	No
Beaverhead	Yes	No
Big Horn	Yes	No
Blackfeet	No	In progress
Blaine	Yes	Yes
Broadwater	Yes	Yes
Butte/Silver Bow	Yes	Yes
Carbon	Yes	No
Cascade	Yes	Yes
Central MT	Yes	Yes
Chouteau	Yes	Yes
Custer/Garfield	Yes	No
Daniels	Yes	In progress
Dawson	Yes	In progress
Fallon/N. Carter/Wibaux/Prairie	Yes	No
Fergus	No	No
Flathead	Yes	Yes
Gallatin	Yes	Yes
Gardiner/Cooke City	No	No
Glacier	Yes	In progress
Granite	Yes	No
Hill	Yes	Yes
Jefferson	Yes	Yes
Lake	Yes	Yes
Laurel	No	No
Lewis & Clark	Yes	Yes
Liberty	Yes	In progress
Lincoln(Libby/Eureka/Troy	Yes	No
Madison	Yes	No
McCone	No	No
Meagher	Yes	In progress
Mineral	No	No
Missoula	Yes	Yes
Musselshell	Yes	Yes
Northern Cheyenne	No	No
Park	Yes	Yes
Phillips	Yes	No
Pondera	Yes	In progress
Powder River	Yes	No
Powell	Yes	No
Ravalli	Yes	Yes
Richland	Yes	No
Rocky Boy	No	No
Roosevelt	Yes	No
Rosebud/Treasure	No	No
Sanders	Yes	In Progress
Sheridan	Yes	No
Stillwater	Yes	In progress
Sweetgrass	Yes	No
Teton	Yes	No
Toole	No	No
Valley	Yes	In progress
West Yellowstone	Yes	No
Wheatland/Golden Valley	Yes	No
Yellowstone	Yes	Yes

Source: Montana: 9-1-1 Program, February 2007.



The Economy

When it comes to households, “clearly it is absolutely a reality that people are switching,” Gibson said. And industry officials agreed that the economy is a factor in that switch.

In January, Chief Executive Randall Stephenson blamed the weak economy for AT&T’s loss of a number of both land-line and home broadband customers. But, according to NPR, Stephenson said, “Wireless customers were hanging in there because cell phones are the last thing consumers would surrender.”

Nationwide, 21.6 percent of adults living in poverty are wireless-only, according to the National Center for Health Statistics December report. In addition, single people living alone or with unrelated roommates are also much more likely to be cell-only. The implication is that dual-income households can afford to keep both land-line and wireless services. But, when economics become a factor, people are choosing to cut the cord to cut costs.

Anderson said his sense is that gas prices and other economic factors have influenced the effect of wireless on Mid-Rivers. He also pointed out the importance of age in predicting which phone service a customer will choose. Older people tend to gravitate toward land lines while younger consumers more frequently choose to go wireless-only.

Age Preferences

Nationwide, 30.6 percent of 18- to 24-year-olds and 34.5 percent of 25- to 29-year-olds are wireless-only, while only 8 percent of 45- to 65-year-olds are wireless only, according to the National Center for Health Statistics December report. Those 65 and older are much more likely to be land-line only, a mere 2.2 percent opting for wireless instead. Within the region of Montana, Idaho, Wyoming, and Colorado, Arthur found that 18- to 35-year-olds were twice as likely to be cell-only as the rest of the population, while those 65 and older were three times more likely to have only a land line in 2007.

In 2006, 94 percent of The University of Montana dorm residents said they used a wireless phone as their primary means of communication, said Ron Brunell, director of Residence Life. A 2005 survey of Montana State University-Billings found as many as 92 percent of dorm residents primarily

Table 2

Demographics of Cell-Only Users

Race/Ethnicity	Percent of Cell-Only Users
Hispanic or Latino, any race(s)	19.3
Non-Hispanic white, single race	12.9
Non-Hispanic black, single race	18.3
Non-Hispanic Asian, single race	12.1
Non-Hispanic other single race	17.5
Non-Hispanic multiple race	22.8
Age	
18-24 years	30.6
25-29 years	34.5
30-44 years	15.5
45-64 years	8.0
65 years or more	2.2
Sex	
Male	15.9
Female	13.2
Education	
Some high school or less	15.4
High school graduate or GED	13.4
Some post-high school, no degree	17.0
4-year college degree or higher	12.7
Employment Status	
Working at a job or business	16.6
Keeping house	12.8
Going to school	28.9
Something else (incl. unemployed)	7.6
Household Structure	
Adult living alone	22.9
Unrelated adults, no children	56.9
Related adults, no children	11.0
Adult(s) with children	13.0
Poverty Status	
Poor	27.4
Near poor	20.8
Not poor	11.9
Geographic Region	
Northeast	10.0
Midwest	15.3
South	17.1
West	12.9
Metropolitan Status	
Metropolitan	15.5
Not metropolitan	10.0
Home Ownership	
Owned or being bought	7.3
Renting	30.9
Other arrangement	23.2

Source: CDC, Division of Health Interview Statistics, National Center for Health Statistics, May 2008.

Cell Phone Only Users Present Challenges for Survey Research

The rise in the number of people who use only cell phones presents challenges to public opinion polling and survey research, which typically rely on random samples of land-line subscribers. As households continue to drop land lines in favor of cell phones, survey and market researchers realize they are missing a major segment of the population and undoubtedly making biased estimates of business- or policy-relevant opinions and behaviors.

Interestingly, early adopters of wireless telephony (folks who go cell only) are on average quite different from their neighbors who stay with land-line phones. This is true not only when looking at demographic characteristics such as age or home ownership but also when examining certain opinions and behaviors. Steven Blumberg and Julian Luke of the National Center for Health Statistics recently found that people who live in cell phone-only households are more likely than others to smoke cigarettes, engage in binge drinking, and not seek HIV testing. In a recent BBER survey, researchers learned that Montanans who use cell phones only report less seatbelt use than their neighbors and are more likely to oppose a law that allows police officers to stop drivers for failing to wear seatbelts. These differences in opinions and behaviors simply cannot be ignored.

BBER survey researchers and others in the industry and in academia are exploring the possibility of supplementing traditional land-line telephone survey samples with cell phone numbers to get a more accurate look at the population. Survey researchers also are examining statistical methods to reduce the bias caused by leaving cell-phone-only households out of our studies. In fact, the Bureau just completed its first telephone survey that included cell phone numbers.

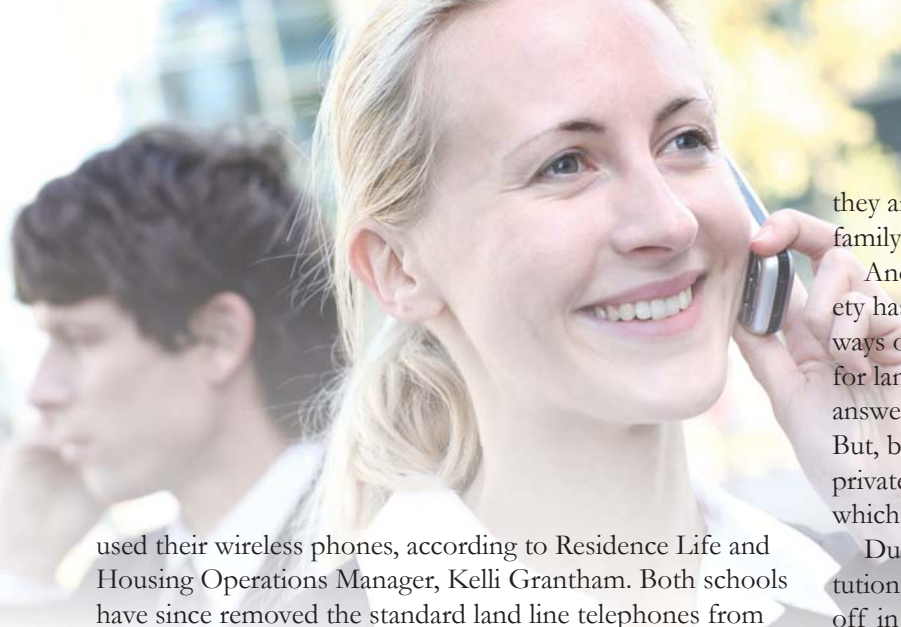
Results from the Bureau survey indicate that the cell-phone data quality was quite good, but challenges remain. More respondents refused to participate in a cell phone interview than did those called on a land line. In addition, the blocks of cell phone numbers BBER sampled yielded more non-working numbers than did comparable blocks of land-line numbers. Both of these factors increase the cost of obtaining an adequate number of survey interviews. In spite of these challenges, the Bureau views adding cell phone samples to telephone surveys as highly important.

However, adding cell phone numbers to samples is far from risk-free. Public reaction to being called on cell phones for legitimate survey research may be negative. The public

may come to view cell phone survey research in the same light as land-line telemarketing. If this happens, will the public seek a legal ban on cell phone survey research or clamor for a "do not call" list? Either of these two possibilities could cause telephone survey research as a method to obtain general population estimates of vital public opinions and behaviors to lose viability because of the bias in the results of land-line-only surveys.

Mail surveys are not an acceptable alternative because up to 40 percent of households have unlisted addresses. Old fashioned face-to-face interviews will remain an effective way to conduct general population surveys but they, too, have problems. The cost of doing face-to-face survey research often exceeds \$300 per interview, whereas telephone survey research costs about \$30 per interview. The cost of obtaining the vital information gathered for governments and businesses by survey research may increase tremendously if telephone survey research loses viability. Smaller organizations and businesses may either be required to accept biased information for a lower cost, or general population survey research will be available only to organizations that can afford it – namely the largest corporations, foundations, and the federal government.

The upcoming national election season points to yet another concern caused by the rise of cell phones. Election polls are vulnerable to bias because a large majority of election polling is conducted using traditional telephone surveys, leaving cell-phone-only households out of the picture. Much of the survey methods research done by reputable organizations like the Pew Center for the People and the Press has not yet found a significant bias in election poll results caused by cell-phone-only households. This is largely due to the fact that voter turnout among young adults, who make up the largest portion of cell-phone-only households, is much lower than among older adults. If the voting pattern changes because young people are more enthusiastic about current candidates, then many election polls may obtain biased results. For example, is it possible that Barack Obama may attract more young voters than previous presidential candidates? Given the growth in cell phone use described elsewhere in this article (about 2 additional percentage points every six months), it seems very likely that an increased share of voters will use only cell phones by November 2008. Major survey research firms are now trying to decide whether to include cell phones in election polls.



used their wireless phones, according to Residence Life and Housing Operations Manager, Kelli Grantham. Both schools have since removed the standard land line telephones from their residence halls with little complaint.

UM removed 1,387 phone lines and only received requests for 59 in the fall of 2007. Of the 390 rooms at MSU-Billings, only 65 used land lines in fall 2007 and about half of those lines belonged to staff, who are required to have a land line. "It seems cellular service is meeting the students' needs," said Judy Holbrook, former director of telecommunications for UM.

"We are seeing cell-only numbers rise because 18- to 24-year-olds are graduating from high school or college and moving on and keeping their cell-only status," said Arthur. As older Americans leave the population and younger Americans continue moving on, the number of wireless-only users will continue to increase, he explained.

The Social Impact

The implications are broad. June Ellestad, an adjunct professor in the sociology department at UM, and three of her students have been studying the effects of cell phones in western Montana for the past three years. Exactly how cell phones are reshaping society remains to be seen, but her studies have produced some interesting findings.

Ellestad found that most people, especially parents, said the primary use of their cell phones was to increase communication among their families. While more frequent communication may indeed bring families closer together, cell phones may also hinder interaction. In fact, Ellestad often observed parents on their cell phones ignoring a child's plea for attention. In some cases parents even turned their backs to children in order to focus on their calls.

Additionally, the 24/7 access made possible by cell phones means working parents are in effect "always at work" because

they are always available to employers and clients. Even on family vacations, the office is just a phone call away.

Another interesting element of cell phone use is that society hasn't fully developed social norms, or broadly accepted ways of behaving, she said. Such norms have been developed for land lines; for example, a host is expected to refrain from answering a land-line call while entertaining dinner guests. But, because land lines are in our homes, and therefore largely private, norms are not nearly as significant for cell phones, which we take with us into all types of social environments.

Due to the lack of accepted norms, we are seeing the institution of formal rules; people are asked to turn their phones off in movie theatres and refrain from talking in libraries, and some restaurants will not serve customers until they have finished their calls. But for the most part, cell phone usage is still largely up to individual discretion, which creates debate over proper etiquette.

Often, Ellestad said, cell phone users are completely unaware when those around them view their talking as rude, despite normal social cues. This is because cell phone users tend to be more aware of their conversations than their immediate environment. As Ellestad put it, "they are off in their own virtual world."

As a result, "cell phones keep us from interacting with the people around us." For example, most cell phone users still observe polite social norms such as holding the door for a stranger, yet they are so engrossed in their own conversations that they fail to recognize when that person says thank you. While the increased frequency of communication may strengthen our immediate social networks, it hinders us from interacting with those around us and meeting new people.

Social norms will develop over time based on what we learn from our experiences, Ellestad explained. As a result, maybe people will stop using their cell phones as much in public. On the other hand, it is possible that society will adapt to the expectation of less interaction, and we will lose our sense of community.

While exactly how is unclear, it is certain that cell phones are changing our communities, relationships, and family structures, Ellestad said. □

Jenny Donohue worked as the Bureau's publications assistant. She is currently the field organizer for the Max Baucus campaign. John Baldrige is the Bureau's survey development director.
