Boomers and Technology:
An Extended Conversation

Sponsored and prepared by AARP and Microsoft
October 2009

AARP®

Microsoft®

About AARP
AARP is a nonprofit, nonpartisan membership organization that helps people 50+ have independence, choice and control in ways that are beneficial and affordable to them and society as a whole. AARP does not endorse candidates for public office or make contributions to either political campaigns or candidates. We produce AARP The Magazine, the definitive voice for 50+ Americans and the world's largest-circulation magazine with over 35.5 million readers; AARP Bulletin, the go-to news source for AARP's 40 million members and Americans 50+; AARP Segunda Juventud, the only bilingual U.S. publication dedicated exclusively to the 50+ Hispanic community; and our website, AARP.org. AARP Foundation is an affiliated charity that provides security, protection, and empowerment to older persons in need with support from thousands of volunteers, donors, and sponsors. We have staffed offices in all 50 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands.

About Microsoft
Founded in 1975, Microsoft (Nasdaq "MSFT") is the worldwide leader in software, services and solutions that help people and businesses realize their full potential.

The views expressed herein are intended for information, debate, and discussion. These views do not necessarily represent official policies of AARP; of Microsoft Corp, or any of the other contributors named below.

Background
Baby boomers have a unique relationship to technology—different than any generation before or since—and they are actively shaping the devices, software and services of tomorrow by the choices they are making today, according to this new research report about baby boomers and technology from AARP and Microsoft.

Curious to understand more about how baby boomers view and use technology, AARP and Microsoft decided to ask. In May 2009, the two organizations sponsored a series of focus group-like discussions with baby boomers in four U.S. cities: San Francisco, Phoenix, Chicago and New York. Author and futurist Michael Rogers led the sessions as the baby boomers shared "their thoughts, enthusiasms, frustrations and hopes about modern technology." The result is *Boomers and Technology: An Extended Conversation*, a report that "offers fresh perspective on a generation often not considered when experts chart consumer appetites for technology" and "creates some compelling forecasts for how boomers will use technology in the years ahead."

Acknowledgements
The report was written by Michael Rogers, of Practical Futurist located in New York City. The author is grateful to AARP members in San Francisco, Phoenix, Chicago and New York for sharing their candid insights during the research process.

Special thanks go to the following AARP staff for their input regarding the report: Paul Anderson, Linda Barrett, Hugh Delehanty, Elinor Ginzler, Jeff Love and Adam Sohn. Microsoft

special thanks to Larry West, Monica Rodriguez, Bonnie Kearney, Pamela Portin, Gary Moulton and LaDeana Huyler.

Boomers and Technology: An Extended Conversation
By Michael Rogers

Introduction

This May, in four major U.S. cities — San Francisco, Phoenix, Chicago and New York — more than 60 Baby Boomers dined together and then talked into the night, sharing their thoughts, enthusiasms, frustrations and hopes about what modern technology means to them. Those conversations, sponsored by AARP and Microsoft Corp., were striking both for their frankness and for revealing the thoughtful and complex relationship this generation has with technology.

The dinner participants varied widely in their experience with technology — from career software engineers to full-time moms — although all had broadband Internet access, as does nearly two-thirds of their age group.[1] They represented a generation that's often not considered when experts chart consumer appetites for leading-edge technology and the next big thing — even though by next year one-third of the U.S. population will be over 50.[2]

That's close to 106 million Americans[2] controlling 50 percent of the country's discretionary spending and outspending younger adults by $1 trillion in 2010.[3] Consumers in their fifties show the highest intent to purchase consumer electronics among any age group.[4] It's an enormous market, in short, and the results of those May discussion evenings revealed that the boomers are in fact active adopters of new technology — but with a unique style driven by two aspects of their character.

The first is that this generation lives at the midpoint of life's cycles: often with children at home, yet also responsible for aging parents. From this center-court vantage point, they see the technology wants and needs of their children and also of their own parents. They're likely to experience, in daily life, both the brash enthusiasm of youthful early adopters and the deliberate caution of older adults.

The second unique aspect is their historical perspective. Baby boomers grew up with technology: they were in their teens to early 30s when the first IBM PCs and Apples appeared, and were the innovators and early adopters of that era (one dinner participant still has the manual for Windows 1.0). Yet they also recall a time when all telephones had wires and were rented monthly from Ma Bell — a time when there were a handful of television stations, and if you turned on the set in the middle of the night, you saw a test pattern. They created their social lives before the advent of ubiquitous communication, when physical distance meant true separation, and if your parents moved to a new state you'd likely lose touch with old pals.

The consistent theme in this diverse group is that boomers want to bring their own values to technology. Boomer ideals were forged in an era when human rights and individual freedoms were central concerns, and boomers apply that perspective to technology as well. They fear that their children, perhaps unwittingly, allow technology to shape their lives rather than using

technology to help create the lives they want. Boomers want technology to fit the lives they have made and the values they hold dear.

The boomers thus occupy a unique niche. If their children are the technology pioneers, the first to explore new territory, boomers are the settlers, arriving a bit later to set up schools and libraries, churches and hospitals, to sink deep roots and build permanent structures. With one foot in the future and the other in the past, they are inventing a world for the 50-year-old of the future. The choices they make, the devices, software and services they embrace, will directly inform what is available as the next generation grows older.

What follows is a composite portrait of a generation intent on defining the future for itself.

1 – **Boomers Like to Learn New Technologies and Share Their Knowledge**

The stereotype is often true: Boomers do learn about technology from their children. "I have a 14-year-old daughter," said a Phoenix participant, "and if you call, she won't call back, but she'll answer texts." Sometimes it's other young people: "I text-only to my nieces and nephews in their 20s, because I really don't want them to have any idea how old their aunt is." When a New York teacher's cell phone buzzed with his first text message — from a niece — he had to ask one of his students to show him how to answer it, "and since I don't allow texting in class, I said, 'I need a volunteer and please don't tell the principal.'" Or social networking: "I'd be talking to my niece in Texas and I'd say, 'Oh, send me a picture of this,' and she'd go, 'Just go on Facebook, it's easy.'"

Once boomers learn a technology, they actively share with their peers. An example of "techno peer pressure" came in Phoenix: "My niece said: 'Guess who's on Facebook: Uncle Eddy and Aunt Jane.' So she's trying to tell us, all your agemates are on Facebook too, even Grandma and Grandpa. Finally my *mother* calls and asks if I saw her new pictures on Facebook. My husband broke down and signed up."

Variations on the pass-it-along theme popped up at every dinner. "I had a young co-worker teach me how to use the T-9 word recognizer for when I text, and now I teach that to my friends," said one New Yorker. Said another: "I learned Office 2007 in a class. It was a good experience and I enjoyed learning it. Then I went to my brother-in-law's house and he said, oh, I have 2007, how do you do this? I told him, 'it's easy,'" she said with pleasure. One participant learned texting from a rock-and-roll friend: "We were at a concert in different seats and trying to stay in touch. But it was so loud we couldn't even hear ourselves on our phones. So she said, 'let's text instead.'"

In short, when it comes to new technology, boomers share. And in all the dinner sessions, that dynamic was much in evidence. One participant would talk about a new technology — personal videoconferencing, for example, or an unusual Web site — and others at the table would immediately ask for more details.

2 – **Boomers Want Technology to Be Safer and Easier to Use — Now!**

The dinner participants rejected the notion that they were somehow inherently less capable of learning technology than their children. (Research supports that the difference is not vast: While 33 percent of boomers report frustration with technology, 24 percent of those 18–49 report the same.[4]) "That's not my worry," said one boomer. "I've had a computer in my house since the Commodore 64 came out. And before that we had an Atari." From Chicago: "I've been in computers for 30 years, and I have trouble with this stuff — it's a disgrace to the industry, to every manufacturer." Said another: "We're all smart enough to read instructions — just make sure it's in English."

Boomers blame manufacturers for creating unnecessary complexity; according to research, "Too many features" is the primary reason for frustration among 57 percent of boomers.[4] "My little digital camera, which fits in my pocket, came with an instruction manual that was bigger than the one that came with my Subaru." There was agreement in Phoenix: "If every piece of technology came with one page of instructions that assumed you could read English and follow directions, that would be very good. If you can't explain it in one page, then you need to make it simpler."

On balance, however, many participants agreed that overall, "technology is getting easier to use." Most don't mind some degree of a learning curve — and are delighted when they discover functions they didn't know existed. The owner of that digital camera with the huge instruction manual gave an example: "Sometimes when you discover the features, they turn out to be very useful. Like the fact that my camera makes sepia-toned pictures. Why, I don't know, but they look really neat."

The group made it clear that there are two aspects to ease of use. The first is learning how a device operates. The second is fixing it when something goes wrong. And boomers know from experience that something *will* go wrong. Often they take it in stride: "I love my GPS, although every once in a while it's really, really wrong. But I wouldn't get rid of it. When it's wrong, I just think it's like driving with a spacey friend. 'Turn here!' Where's *here*?"

Once something does go wrong, however, boomers don't appreciate more unnecessary complication: "Is it my computer, or my cable provider in a meltdown, or the program I've loaded, or a virus they haven't caught yet?" One study found that boomers are self-reliant when it comes to technology: 63 percent attempt to solve computer problems by themselves.[5] In what would become a recurring theme, many boomers said they are already learning to use technology to fix technology: "We find the most arcane answers on the Internet, doing a search, because there's always someone who has the same problem."

Interestingly, boomers in several cities came up with the same solution for misbehaving technology in the future: devices should be able to heal themselves. One participant in Phoenix put it this way: "You'd have this little angel or shadow that follows you along, and keeps your computer working, remembers everything that's been done to the machine. It would be like my station wagon that says it's time for an oil change." Another took it a step farther: "Or the

computer talks to you. 'Oh no, this wasn't my problem, it was the cable company.'" Which made one boomer invoke vintage television: "It could just say, 'Danger, danger, Will Robinson!'"

Boomers are also very aware of online hazards, such as viruses, worms and phishing. "There's always a good side and a bad side," said one participant in Phoenix. "There are people sitting up all night thinking to do harm to us — identity theft or whatever. So there is that fear factor." Those concerns don't keep boomers offline, but they do create a clear expectation. Boomers want to extend the idea of self-healing computers to include devices that will be smart enough to protect themselves and their owners from online threats. And, of course, some think new regulations may be in order as well: "Spamming," as one San Franciscan said, "should be a capital offense."

A final issue that concerns boomers is security and privacy. A late 2008 study found those concerns increase with age: from 67.3 percent among those 18–24 to 85.7 percent for those 55 and older.[6] "Everything comes back to privacy," said one New Yorker. "We grew up reading *1984* and *Brave New World*. I don't know if kids in high school even have to read these anymore. *1984* sounds like a history book. But it's still valid — those futuristic environments in which everything is known and controlled."

When privacy is directly addressed, boomers are reassured: In one recent study, only 34 percent of boomers were comfortable about privacy with Internet sites that customized content or advertising, but that number increased to 52 percent when they were presented with clearly stated privacy policies.[7] Privacy options need to be made very clear. "If we got a one-page explanation of how to keep information private on Facebook that would be fine. But you have to go to six different places to figure out how to set the privacy level you want."

3 – **My Way: Boomers Expect Technology to Adapt to Them**

Everyone wants technology that adapts to their needs, of course, but boomers see themselves as more assertive about demanding it than their children seem to be. Rather than early adopters, then, call boomers sensible adopters, who aren't about to change the way they live to fit technology. "There's a difference between being technically inclined and just jumping on every new thing," said a San Franciscan. Yet when presented with leading-edge technology that directly addresses their needs — even products not yet widely available — boomers are enthusiastic. In other words, when a technology makes sense to them, boomers may become early adopters and help lead the way.

Consider the perennial problem of too-small visual displays that wash out in bright light. One solution that came up at the dinners was the use of miniature projectors built into cell phones, a technology already available in Asia that will soon be introduced in the United States. Many of the dinner participants immediately liked the idea of a cell phone plus projector. "That would solve a thousand problems," said one. A designer said, "My staff e-mails me designs and asks what I think. If I just look at it on my mobile phone I can't tell. But if I could project it, wherever I was, that would be very valuable."

Further out, there will even be eyeglasses that can display computer information superimposed right on the lens itself, so that the text seems to float over the image of the real world. Odd as that sounds, there were takers: "I would love it. Especially if I wore glasses already." Several noted that it would solve the oft-cited problem of displays that are unreadable in bright sunlight. "That's cool," said one boomer, "but I'd want a little light that showed your spouse you were actually paying attention to her." Which led to a lively discussion about potential abuses: "Our generation would know that wearing those glasses while driving would be wrong. But a 17-year-old might well turn them on to see what photo his friend has just sent him from Berlin."

Another option that drew strong support from the participants was voice input and output. "I like it when machines talk." one participant said. Another recalled the first time she heard voice input: "I heard someone say 'Call Susan.' I was in a public restroom and I thought they were telling me to call someone — but they were talking to their phone and I thought it was very cool." Some already use voice input regularly: "I like talking to my phone, saying 'call home,'" said a Chicagoan who also suggested another application: "I can't understand the GE oven manual that tells how you program the stove to start your roast at a certain time. I'd like to just be able to say: 'Hey oven, turn on at a certain time, then turn off.'"

But one boomer theme — that human flexibility must be incorporated into technology — continues. "I hate the voice response telephone systems today. There's no possibility for nuance, or 'none of the above.'" But if voice input really worked, "it would be great to just get up and tell your computer to turn on a screen to watch the market or get something going in the kitchen. I don't really care if it talks back. Although I certainly don't want it to have an opinion."

4 – Chip Me, Doc: Boomers Enthusiastically Embrace High-Tech Healthcare

Boomers are already early adopters in online health: They are 98 percent more likely to visit health Web sites than the average Internet user.[4] So if healthcare reformers want a constituency for electronic health records, the baby boom generation is the place to start. As long as privacy can be maintained, there was almost unanimous enthusiasm about putting properly protected healthcare information online. This is one of those areas where, for boomers, next-generation technology meets personal needs, and they're ready to go.

One participant had undergone successful heart surgery. Although he's now healthy, he says, "My heart sounds very strange. If I went into an emergency room they'd put me on oxygen right away." As a result he already has most of his medical records online so that new doctors can see immediately what they're listening to. Other participants went even farther: "If we had the option of putting a little chip in your neck, like they do with pets, with all your medical records, and they could just scan that when you go into the emergency room, I'd sign up in a second." During all the dinners, the implanted chip idea received a surprising level of support. "My dog's been chipped," said one participant. "As long as they can only be read by health professionals, I'd sign up tomorrow."

A handful of the participants were already in healthcare systems with electronic record-keeping and unanimously reported satisfaction. "I can go online and see what my blood pressure was at my last appointment. When I go to a new doctor, all my records automatically come along with me." A few loved e-mail consultations: "I can e-mail my doctor and right away he'll just tell me to do this or that, or else to come in for an appointment."

A step beyond electronic record-keeping is remote diagnosis, or telemedicine — devices in the home that record a patient's weight, blood-sugar level or lung capacity, and then send the information electronically to the hospital or doctor. While such systems are still not common, one participant was already using one: while he was recovering from congestive heart failure, his insurance company gave him a home scale that sends readings to a monitoring service and also asks questions about his activity level. "If there's a weight fluctuation," he explained, "I get a phone call: 'Are you all right? Can you function today?'"

"At first," he said, "it made me feel safer." But then, as he began to control his condition through exercise and diet, it grew frustrating. If he simply overate one night, he'd get a call in the morning after he stepped on the scale. "And once, I answered 'no' to the question, 'Did you exercise today?' and they called right away. I meant I didn't ride my bike that day; they thought I couldn't get out of bed." If systems like these are going to be widely adopted, participants agreed, they need to be far more customizable for individual users. The first generation of monitoring systems is still relatively primitive. Next-generation systems — such as clothing with sensors woven into the fabric — will be able to track physical indicators around the clock, allowing much more sensitivity to individual variations.

Participants who were caring for aging parents, however, immediately saw the benefits of telemedicine even as it exists today. One mentioned her grandmother: "A visit to the doctor is an

entire day. She gets up at six in the morning to get ready for an appointment at two in the afternoon. If we could do it at home, it would relieve a lot of anxiety."

Others were attracted by the potential cost savings that telemedicine might offer by preventing hospitalization. Incipient problems could be detected before they got worse. And physicians would also be able to get a better long-term picture of a patient's condition: "You'd go in to the doctor and he'd have three months of data to look at." And of course there would be savings on energy costs as well: "You don't have to get in the car and go to the doctor."

With telemedicine as with other technologies, the participants insisted that advanced technology must be combined with the human touch — "The physician's intuition, all those signals you pick up subconsciously." One offered this example: "Maybe you can tell a machine at home that your pain level is 5 on a scale of 10. But once when I went to my podiatrist, he asked my pain level and I said 5. He said, 'The way you walked in here I'd say it's a 9.'" The group embraced telemedicine — but as part of comprehensive healthcare, not as a substitute for caring medical professionals. A nurse in Phoenix offered the classic boomer perspective on retaining the human element: "Whatever we have in technology mustn't eliminate the people-to-people contact, the relationships. If technology is enhancing the relationship, that's the best."

Beyond telemedicine is the broader area of technology for helping elderly parents stay at home — so-called aging-in-place — especially when the caregiver is at a distance. The concept is simple: equip the senior's home with sensors that can monitor activity, from what time they get out of bed to how much they move around to whether they've taken daily medication. Some systems even include one- or two-way video communication.

For a number of participants with aging parents, this was attractive. "I would feel more secure if my mother could be protected and I could get a daily report. Sometimes parents say 'I'm fine' when they're not." Said another: "If there had been a monitor to tell me she hadn't turned off the faucet, that would have saved me about $100,000 in my mother's apartment." A nurse noted: "Aging in place is the most valuable thing that can happen. Anyone with Alzheimer's is better off in their own environment."

But many were also uncertain whether their parents would permit such monitoring, especially if it included video. "My grandmother is 105 and probably more lucid than I am, and if I told her I was going to patrol every move she made, she'd say no in a way you could hear a block away." Again, however, this is an area where technology is moving very quickly, with an eye toward much less invasive monitoring systems. One example: an "invisible fence" to track Alzheimer's patients.

Finally, talk turned to the next big step in healthcare: the use of genetic information to diagnose and predict health conditions. One company has even launched a social network to let people with similar genomic makeup talk about their health issues. Some participants had already encountered the technology: "My goddaughter had genetic testing for a cancer gene; she had the gene and at age 34 she had cancer. That knowledge saved her, because otherwise she never would have started so early with all the extra testing."

There were also a few doubts: "I think I'd only want to know if there was something I could do about it." And several participants in different cities brought up an interesting twist: "What about the power of suggestion? If you know this is your genetic map, are you going to develop in that direction? Is it a sealed fate?" But overall, a majority agreed that genetic testing was valuable — even for uses such as indicating athletic ability: "I love assessments, and if genetics could give you a sense early on of what your skills or gifts might be, that's kind of good. It's disturbing, too, in that it might take away your free will. Or maybe it would become part of your free will."

5 – **Come Together: Boomers Use Technology to Connect in New Ways**

Texting is an example of a youth-oriented technology that, once sampled, struck a chord with many boomers — sometimes for unusual reasons. "I think manners have fallen by the wayside with cell phones, and I find texting so much more polite." A Chicagoan added, "I like the option of having a sophisticated way to communicate in public places, and that's what texting is for me." Another praised the brevity of the medium: "The message is often wonderfully pithy, since they don't have much space. You don't get stuck in the peripheral stuff of the conversation that can run on forever." And there's also a typical boomer appreciation of the control that texting offers: "I like the fact that a text isn't as insistent as a ringing phone. I can let a text sit until I'm ready to look at it."

Boomers have enthusiastically embraced another aspect of connection through technology: online dating, in part because they're at an age when they're less likely to meet a variety of people in settings such as school. "It's like online auctions — it expands your exposure — and it's a shortcut over old-fashioned dating." Said another: "It's like setting yourself up on your own blind date, but you are in control."

Many boomers find online dating enjoyable: "I had a blast on dating Web sites. I'm in a relationship now from that. I had been in advertising and I wrote a great profile … I had guys write me and say, 'You're not what I'm looking for, but who writes your stuff?'" And it offers more selectivity: "You can actually filter out people. In a social environment, you can't really tell that much about the background of a person when you're sitting there talking to them. There's something really useful in being able to say, here's what's important to me, and being matched up with someone similar."

Baby boomers quickly learn their way around the online dating scene: "I used a site that also had an X-rated side … if you were interested in something other than a relationship. So when guys would e-mail me, I'd go to the X-rated side to see if they were registered there too." And in the end, there's no stigma attached to the process: "I have lots of friends who have met online, and I don't care how people meet." A Phoenix participant said: "I know two couples who got together online, but were so busy that they probably never would have met otherwise."

Perhaps the biggest communication conundrum for boomers is that technology has the potential to create new barriers between people as well as new connections. A New Yorker was blunt: "High tech can isolate you." Another agreed: "You used to be able to say hi to a stranger — but you can't if they have their pods in." But this was an issue that many participants felt was more social than technological, and that it was simply a matter of how one used the devices.

One Chicagoan summed up the new opportunities: "People have always been able to hide behind a magazine or newspaper. Now, if you want to opt out, you have these wonderful choices at your disposal. Likewise, if you're feeling isolated and you want to opt in, you can get involved through Twitter or the Internet or a multitude of media at your disposal. You have more choices that are more comfortable for people versus stepping outside the door, outside their comfort zone, and confronting humans."

Others acknowledged the irony: "Those are all the same strangers we pass on the street. Yet through this veil of technology you're willing to reach out and tell them things you wouldn't tell someone on the street. It's easier, because you don't have to meet those people face-to-face unless you want to."

For boomers, in short, technology can make *stronger* connections, and no better example emerged than personal videoconferencing, which one participant described as "like the Jetsons — something from the future that seemed totally unrealistic but now it's here." Said a Phoenix participant, "I would have told you I would never do it, but my niece spent six months in India and said, 'This is how we'll stay in touch.' It was so much different than the videoconferencing I'd done at work — it seemed so much more intimate. The whole experience was so good that I'd definitely do it again."

And video sometimes allows deeper connections than older forms of communication. "When our son went to college, we set up webcams and it really helped my wife get through the situation. At first we'd write long paragraphs, ask how he was doing, and he'd say 'Fine.' But when he was on camera he'd have plenty to say." Said another: "I resisted it for a long time, but videoconferencing really is kind of wonderful. You get all the parallel language that is facially transmitted."

That same respondent saw this as a permanent generational change: "My father had a webcam on his computer but he never got that going. But as we talk to our children, it will be more of a natural thing." In another decade, small cameras may sit atop the living room HD television as the gateway to the grandchildren. Although boomers may want to learn a little more about makeup for the camera: "My niece doesn't think twice about the webcam, but I'm aware of grooming and what things look like. Sometimes it's a distorted picture, and not very complimentary."

On balance, boomers felt that the new communication options are a clear positive: "My mom is 83 and started to use a computer when she was 78 — she didn't want to, she had to for work. But now she loves it and it's gotten her out there, more active, less isolated." The experience of the participants matches statistics showing that while only 32 percent of those under 50 say they benefit "a lot" from their online community, 47 percent of those over 50 do.[8] So it was for one of the New York participants: "When I wound up unemployed, I was burnt out from my job and ended up staying at home and not going out for days at a time. But I did have an online life, from some interest groups I'd joined. Basset hound discussion groups, to be exact."

And the new connections can happen in surprising ways: "I really like the live chats you can do on some shopping sites," said a boomer in Chicago. "On L.L. Bean I was asking about sleeve lengths at five in the morning. I ended up chatting with a woman in Maine, and it turns out her daughter lives two doors down from me."

6 – **From Manners to Multitasking: Technology Changes the Rules of Engagement**

Boomers embrace technology, but at the same time they have strong opinions about how it should be used in a social setting. "What's acceptable behavior has changed so much; what's accepted by us or by our parents is so different than what our children think is acceptable," said a San Francisco participant. From one boomer in Phoenix: "We have a guy in church, in his mid-twenties, who always has his headphones on — you never see him without them. I see a reluctance for leaders — teachers, preachers — to say please take that off, put that down, or get out." In Chicago, another participant had a simple observation about cell-phone etiquette: "There is a good reason we used to have phone booths. Phone calls were considered personal. It wasn't just a place for Superman to change his clothes."

People of any age object to loud cell-phone users in public spaces. Boomers, however, remember a time when that wasn't even a possibility. But they're also not ready to blame it all on technology: several participants suggested that some of the social changes started well before computers. "Even when I was a kid," said one San Franciscan, "my parents would say, 'Oh, you can't do anything by yourself — you need to be entertained.'" One Phoenix boomer observed that "My mother's generation was more literate than mine. My impression is that everyone, from shop people up, had a higher standard of communications. So I can't blame the decline on technology — if anything the technology should strengthen communication. It's a social priority, more than technology."

But boomers recognize that, in the midst of this change, their children are learning useful new skills as well. An exchange between boomers in San Francisco illuminated that nicely, when one noted, "Younger employees are much more familiar with technology, so that's a plus for productivity, but they probably have fewer social skills, so it's a tradeoff." Another agreed: "These days you can get a job just on smarts, and do it by telecommuting. The nerdiest guy in class is the one making the six-figure income, while the cool guys are just getting by."

The new skill most often mentioned was multitasking. "Jumping between nine things at once is something our generation isn't good at, but maybe when you start it at three years old your brain gets wired differently and you can do it effectively. Maybe it's not a bad thing." A software designer agreed: "In the current workplace, there are rewards for being able to do more than one thing at a time — that behavior is encouraged." One participant summed it up as a mixed blessing: "I go to meetings and there will be people with their laptops open, doing IM or e-mail or something. The good news is that they're getting their work done, the bad news is that they're probably not really paying attention to anything that's going on around them."

One interesting characteristic appeared throughout the dinners: Boomers are always trying to sort out whether they have legitimate concerns about social changes, or are merely showing their age. No one wants to appear to be the old fogy "who talks about walking to school in the snow." Said one participant: "In the fifties, our parents probably said, 'Gee, these kids hang out in cars. We didn't have cars in the thirties, we were broke.' So the world changes — there is still social interaction, they're just doing it differently, by IM, by text, whatever. It's not the same as what we did, but is that necessarily bad?"

7 – **Boomers See Technology as a Tool, Not a Tyrant**

A thread that ran through all of the evening discussions was that boomers don't want technology to be intrusive or a disruption in their daily lives. An example: "Instant messaging is a great support when you really need it, and the biggest nuisance when it's misused. You just need to have some boundaries around it." Another participant immediately agreed: "I call that 'interruption management.'"

Some participants felt that they have earned more control over technology: "When I was a junior salesperson I had to have both a cell phone and pager, and I was always on call. Now that I own my own business, that was one of the first things I dispensed with. I will contact you when I need you, and you can contact me but I'll respond when I wish." One teacher has two Facebook accounts, one for family and friends, and another for students. "The students really like it. You're a 24-hour teacher. But I only log on to that page when I feel like it."

Boomers are thus learning to cope with the new wealth of communication options, and the same goes for information from the Internet. "Do I need more information? The problem becomes filtering and sorting — you have all this information coming at you, what does it mean and how do you shut out the part that doesn't matter to you. And then how do you make sense of it?" Said another: "It's getting harder and harder to sift — there's far more information out there than one person can absorb."

Boomers clearly see that turning off technology isn't a desirable response to the new flood of input and information — that to do so is, in effect, to tune out the world. One 57-year-old New Yorker said, "I didn't use technology for a while, and then I thought, gee, I'm acting like I'm getting old. I have kids, I'd better update myself." Instead, many thought that, once again, technology itself will help with the issues of control and too much information: "I love things like the Amazon suggestions, and Netflix preferences. There are so many choices we have everywhere, so for someone to narrow it down for you, that appeals to me."

8 – **Show Me the (Digital) Money!**

If there is anything that reflects how comfortable boomers have become with technology, it's their relationship with money. An early 2009 survey showed that about half of boomers use online banking,[1] and that figure is rising rapidly. Almost all of the participants used online banking or investing in one form or another. Many were relatively recent adopters, like the San Franciscan who said, "I resisted it for a long time, because there was no paper and I worried about security. But now I use it and I love it." Said another: "I pay bills online directly with companies … I feel like I have more control than using the bank. I love it." One participant had online access only with the two accounts he shared with his children, and through them was beginning to see its advantages. "I notice that I tell them to be careful about their balance, and they check it every day."

More typically, one Chicagoan said, "It actually feels strange to write a check now. I have to stop and think, 'Gee, what do I put down here?'" And the rewards can be more than convenience: "It lets me transfer money between accounts only when I need it, so I can use money most efficiently."

What about centralizing all of one's financial activities on a mobile device and using the cell phone as a credit card, a practice that is common in Japan? "Why not? I bought a smartphone and got rid of my address book and calendar. We've been buying stuff online for 10 or 15 years and I've never had problems with that." Security was seen as a potential issue, but not as insurmountable: "I'd love to get rid of this wallet full of plastic. As long as it had a password or a fingerprint, some unique identifier, it would be fine."

Others weren't so sure, citing the possibility for loss, and a lingering attachment to paper. "I'm a control freak, I still want to see things on paper, I still want to have hard copy." But when other participants noted that a lost cell phone could be remotely deactivated, and that paper records could still go out at the end of the month, some skeptics softened: "Not carrying the wallet and the credit cards, that would be an advantage: scan it and off you go." One world traveler was sold: "When I leave the country, I would love to do mobile banking. I would love to do *everything* mobile. I don't want to walk down the street pressing buttons, but in general, yes!"

9 – **The Times They Are a-Changin': Boomers See Technology as Force for Good**

The dinner participants generally believed that technology has the potential to change American society for the better, in everything from community issues and local charities to the process of government itself. "Online is the only way to organize charities now," said one Chicagoan. "There's nothing to compare. It makes contacting one person easier, but for reaching large groups of people, it's enormously important." Although, another noted, "Handwritten notes still make a big difference."

Overall, however, there was agreement that online donations have greatly streamlined the process of giving, and "you can check out charities, really get to know them, with things like Charity Navigator." One participant who ran a nonprofit community group said, "We have actually gone very social with Facebook and Twitter. We're learning fast. There's an older generation of people who have the money and sit on boards, that's going away; we need new technology to recruit new people."

For many participants, the 2008 presidential election pulled them into politics online. "The Internet has really changed politics," said a Phoenix participant. "It seems to get people much more involved. I think that's a wonderful thing — we're all connected in a way that we never were before."

Many reported contributing to campaigns online: "It really changed fundraising — it made it so simple to make small donations." And many also followed the election online: "I used the Internet to download all of the candidates' position papers, printed them out, read them at my leisure." Said a Chicagoan: "I got hooked on sites like FiveThirtyEight and RealClearPolitics — I was on them three or four times a day. I think it was better information — so condensed and easy to use."

A surprising number of boomers pointed out that the Internet could change governance itself. For starters, there was strong interest in online voting, as long as the process was secure: "If we had that, we wouldn't be stuck with having to vote on Tuesday." Another participant pointed out, "Sometimes people, especially elderly people, can't get out to vote because it's too hot or cold."

Beyond that, several boomers brought up the idea of direct governance. "I look forward to the day when we have no Congress," said one participant, "and instead they say, here are the issues, here's what we'll vote on today." At several dinners, that proved the most controversial idea of the evening. Some approved: "We're far from government by the people, for the people, and that sounds more like it." Others reacted sharply. "That's a horrible idea! It would turn back the clock forever. Look what happened to Proposition 13 in California." Said another, "I'm skeptical about that. If you had a list of 20 items to vote on every day, I can't believe you'd get much of the electorate involved on a regular basis." One Chicagoan offered this: "I have a better idea. We just put shock collars on the politicians."

In the end, boomers see advanced technology as a key element of democratic society — even on a global level. One teacher runs an online video exchange program between his students and kids

in Kenya: "We can actually see them. It's not just letters and e-mails. Even though it's not always a great video connection, it's really exciting."

If there's any concern, it's that a digital divide still prevents part of society from fully experiencing the benefits. In Chicago, one participant runs computer training sessions for low-income families. "Probably 30 percent of our students don't have a computer at home. We're basically training them to turn on the machines. It's square one. But they all need to have it. We have open sessions when anyone can come in, and our computers are full all the time."

10 – Technology Opens New World of Leisure, Creativity and Learning for Boomers

Nearly one in five Americans between the ages of 50 and 70 takes classes for personal enjoyment,[9] and the discussion participants found computers and the Internet a great source of educational content. Learning a foreign language was the top educational pastime, but not the only one. "I got involved in trading resource stocks," said one boomer, "and I joined an online group and got an incredible education from people I could not have otherwise met — serious, heavy investors who gave of their time." On the other hand, he said, "my wife spends a great deal of time teaching online, as an artist."

A San Francisco boomer writes music for a hobby, then performs and uploads it to MySpace; now he's working on videos for YouTube. In New York, a part-time DJ said his favorite technology application is a smartphone program that lets him identify the music that's playing in a bar or restaurant. "I collect first edition books," said a Chicagoan. "There's a part of me that likes digging down and getting exactly what I want on the Internet. There's another part that says, it's not just getting the book, it's the thrill of the hunt."

One participant was an amateur writer. "I used to write much more slowly. I didn't want to make a mistake, because I hated using Wite-Out. Now, with the computer, I can write much faster." Another extended that thought: "If the process of using shortcuts, like word processors and calculators and spell-check, frees up a part of the brain for more creative things, that's great."

Video games are attracting renewed boomer attention. "I'm addicted to Yahoo online pool." Online pool? "You use the mouse button to make shots." The biggest interest for the future: video games that "bring the physical realm into the interaction" such as the Nintendo Wii. "I have a boxing game and a workout game, and they're the first video games I've played since 'Pong.'" Another vote: "I have a friend who played 'Wii Golf' for a long time, and found that what he learned carried over into his *real* golf game, as long as he thought, 'This is just like 'Wii Golf.'"

No matter what they do, boomers want to retain the human touch. A musician in New York talked about how she adapted to composing electronic music: "It was switching from a very hands-on thing to sitting and typing and realizing I could just do things by numbers. I had to make a switch inside my brain not to let the computer overtake my thinking. Instead, I needed to harness my thoughts and *use* the computer so that it would be my instrument, and not the other way around."

In all, Americans over 50 are 27 percent more likely than average to visit Web sites about hobbies or travel.[4] Boomers, who grew up in an era when satisfying curiosity often meant a trip to the library, clearly value the rich information connection that the Internet offers. "I love that I can go to the computer and look up anything," said one Chicago participant. "It's just incredible. I'm so glad I've been alive for this era."

11 – Stop the Presses: Boomers Are Taking Their Passion for News Online

The boomers are often characterized as the last remaining audience for newspapers. And there was considerable affection for the broadsheet, tinted with apprehension for its future. "Sometimes I feel like I should re-subscribe to the newspaper just to keep it alive," said one participant. A San Franciscan commented: "There's something really nostalgic about getting a Sunday newspaper, sitting in the living room quietly, just taking time with it. There was a ritual to it."

But there is change in the air. In Phoenix, one boomer said, "I wouldn't sit in front of my computer with my cereal to read the news," and another participant immediately responded: "I sit in front of my computer with my yogurt and blueberries and read the news." And when it comes to job hunting, the choice is clear: "When I got my last job in 1995, it was through the newspaper. This time I looked briefly, but there's nothing there. Now it's all online. And I could just stay there for hours, going from one site to another. I feel it gives me more options and it shows me the world — there are jobs out there."

Participants were clearly seeking new sources for news, from AP wire stories on their mobile phone to *The Economist* on the computer. "At my condo I see the pile of recycled newspaper and it's huge. There's something to be said for the environmental part of online." And they will consider new business models: "I would pay for a subscription online. I subscribed to the *Wall Street Journal* online and they offered me the paper version for another $20, but I didn't want it." Again, the issue of control arose: "What I like about online is that you pay attention to what you want, you're not following someone else's script."

Many are already adapting to a post-paper future. Some gradually: "I switched to *The New York Times* online, but I scan the headlines and then print out what's interesting." Some more dramatically: "I read news on my cell phone. I'm addicted to it. I can't read long stories, but for little news stories it's great."

There was wide interest in an electronic reading device that was larger than a mobile phone, still highly portable, but more like paper in its readability, and flexible enough to be rolled or folded and tucked away when not in use. "I'd love to see something that works as well as a portable music player, but for reading, rather than carrying a newspaper and getting my hands dirty. Something big, where you could switch the orientation, switch the fonts." After lively discussions, a surprising number of participants warmed to the idea of a sophisticated e-reader: "Not having to deal with all that paper wouldn't be bad."

When it comes to video, boomers are discovering online sources at a rapid rate; a late 2008 study found that more than a third of people in their fifties had watched an online video in the past week.[4] During 2009, that number has probably increased dramatically: the dinner participants were almost uniformly familiar with streaming video — sometimes, too much so: "If one more person forwards me a link to a funny YouTube video, I'm going to shoot them."

When it came to conventional television, DVRs remained popular — "a game changer" — but there were also reports of DVRs filled with shows that no one ever got around to watching. But more change may be ahead: a few boomers at each dinner mentioned using desktop or laptop computers for viewing shows they previously would have watched on television, citing control as the major motivation: "It's convenient. You can go back and look at something you've already seen." For participants who hadn't considered the idea of television on a computer, the notion of control was very attractive: "I'd love to be able to watch Charlie Rose any time I wanted."

Beyond the choice of medium, there was a deeper concern over the quality of content that might result from the current media disarray. "My worst fear is that there will be no newspapers, no magazine, no presses, and then what will we do? I worry about the credibility of what we get online." Another boomer agreed: "There's a difference between expertise and opinion." Said a New Yorker: "Will we become a post-fact society in which anyone can blog about anything and you can't tell whether it's true or not?"

Those concerns are real. But boomers are facing the realities of the new media world, and adapting with their characteristic mix of enthusiasm and caution. In Chicago, one participant offered the observation: "I love Wikipedia!" There was an immediate reaction from across the table: "Wait a minute. Does anyone feel like when they've read Wikipedia they have the definitive line on any subject?" The reply: "Of course not. It's nothing you'd want to bet your life on, but it's a good way to get started on learning something."

12 – **You've Got a Friend: Boomers Connect With Social Networking**

Boomers are moving quickly to adopt social networking — users over 55, for example, are now the fastest-growing age group on Facebook, and as of summer 2009 there were more people over 55 on that site than high school students.[10] Use of social networks by those over 50 has tripled over the past 18 months, and once boomers join a social networking site a third of them visit *at least* once a day.[4] The more than half-million registered users on AARP.org have already organized more than 2,300 separate discussion groups. Thus it was not surprising that in the evening discussions, well over half the participants used one or more social networks.

"It's not necessary to know what people are doing every minute of the day, but I find it useful to keep in touch with people in a very short period of time." A number of participants agreed that it's a very different and useful form of communication: "On Twitter and Facebook I'm connecting with people more, making new friends, with people I wouldn't be e-mailing." Or as a New Yorker put it: "On Facebook, all these people from my past life, grade school, high school, have popped up. That's the most amazing thing. And talking to them is so much easier than writing a letter and dragging out a stamp."

Even at the dinners, boomers were spreading the social word. "I'm intimidated by social networks," admitted a San Franciscan. "I have invitations to LinkedIn and Facebook all in a folder, thinking someday I have to do that, but I can't even keep up with my e-mail as it is." Another San Franciscan immediately replied: "Don't worry about it. I just go on and watch what everyone else writes. I have plenty of friends on Facebook, but I have no idea who they are. I just agree with every invitation." There was also a sense of humor about it: "Facebook is really a waste of time, but it's fun."

Fun is an important part of the social network experience, and boomers are learning to play very quickly. "You need multiple personalities," explained one participant. "For your mom you're a church-going guy, for the ladies you sail and are a wine aficionado, for your buddies you're beer and a shot and into sports. And the thing is, they're all real aspects of your personality."

Yet, it's also more than fun: the social networkers in the evening groups also used networks such as LinkedIn for business purposes — often signing up in anticipation of job changes or, in a few cases, immediately following loss of employment. Several participants used the even-newer Twitter for their own marketing. "You end up with some leakage between your personal and business lives," said one Chicagoan. "But that happens in the real world, too."

Many boomers find themselves redefining privacy in the social networking world. "I'm just amazed at how open people are." Said one San Franciscan: "I go back and forth on this. On one level it's an insane invasion of privacy and on another level it's simply people knowing people." But the boomers bring life perspective that may help them adjust to the new online ways. In Phoenix, a participant suggested, "It's not that much different than living your whole life in Beavertail, Wisconsin, where everybody knows everything about your life and exactly what you did in the fifth grade."

In social networking, boomers are once again applying their own life experience to technology. One participant who shares Facebook with her three nieces took a look at their pages and worried about their online naiveté. She intervened in the best way she knew: "I sent them notes: 'I will write you big checks if you get this information off your pages in 24 hours.'" The issue for boomers in the end is not so much loss of privacy as control over the technology: "If we got a one-page explanation of how to keep information private on these sites, that would be fine. But you have to go to six different places to figure out how to set the privacy level you want."

The boomer migration into social networking will only accelerate. Social networks will serve at least three main purposes for boomers. First, as a connection to family, as the social network becomes a powerful way to remain a part of their children's lives without intruding. Second, as a connection to friends —as a way to both meet new friends and, just as important, to re-establish connection with past friends in a way that no generation has ever been able to do before. And finally, it's very clear that as boomers redefine their roles in the work force, business-oriented social networking will become an increasingly important way to keep track of colleagues and peers, and to create new kinds of employment opportunities beyond the traditional 9-to-5 corporate roles.

13 – **Don't Stop Thinking About Tomorrow: The Boomer Vision for Technology**

Boomers are ready for *more* technology. They're actually more likely than those 18-49 — by a margin of 59 percent to 55 percent[4] — to agree with the statement "Technology will help me live a fuller life." And indeed, boomers' ideas for new technology center around health, communications and the home. Said one Phoenix participant: "How about a phone that has a feedback device to tell you if you're out of line: like you're drinking too much, or you're a little overweight, you'd better cut this out. It keeps reminding you, and when you finally straighten out it gives some positive feedback." Another participant immediately added: "Or the insurance company gives you the cell phone and it lowers your rates if you behave."

Beyond cell phones that encourage good behavior, boomers still see room for improvement in communications: They haven't forgotten the promises of their childhood Sunday comics. Like Dick Tracy, said one participant, "I want a wrist communicator." (Not long after that dinner, a Korean company, in fact, introduced the first commercial wrist communicator.). One boomer suggested that "it won't be long until a baby gets a chip implanted with their permanent phone number, like a Social Security number, and you can reach them there for life." Another responded that it was already happening: "My son moved to Turkey for work, but he uses a VoIP [voice over Internet protocol] service and still has his local number."

When it came to cars, there was a strong focus on safety. "I was badly injured in an accident 17 years ago," said one participant. "If technology can avoid such an event, then I'm all for it." The use of short-range radar for collision avoidance drew a strong positive response. "I want an automatic deer detector," said one Chicago participant. More than one participant expressed concern about the number of electronic distractions that now face drivers behind the wheel. Once again, there was a suggestion that technology itself might help provide a solution: systems that monitor driver performance and actively intervene if the driver isn't paying attention.

Robots came up often. "I'm surprised we don't have more robots by now," said one boomer, who speculated that perhaps there had been too much focus on computers. "I do have a Roomba in my loft," said a New York participant. Others warmed to the idea: "They could clean up after your pet. Cook you dinner." Another participant observed: "There's a building in Dubai that washes itself…houses could do that too." But once again, the boomer focus on human values surfaced: "I like the idea of robots doing work around the house, but what happens to the people who are doing that now?"

The general idea of home automation was well received, such as the ability to lock and unlock the front door from a distance, or turn lights on and off automatically for energy conservation. "It would be nice to have the appliances monitored for environmental reasons," said one New Yorker. "I have a 700-square-foot apartment and my power bill is as high as a whole house in Kansas. I'd love to have a monitor that told you all your power consumption — where all your big power drainers are." And smarter appliances as well: "I don't necessarily want a refrigerator to tell me when to buy milk, but it would be nice if it told me that the milk in the back should be thrown away."

14 – **Conclusion: Boomers' Relationship With Technology a Work in Progress**

One clear conclusion emerged from the evening discussions: It's a mistake to view the boomers as a generation whose technology habits will remain fixed going forward. They're nearly as likely (78 percent to 83 percent) as those 18-34 to say they're "comfortable" or "very comfortable" shopping for new technology.[4] In fact, baby boomers have a dynamic, thoughtful and ever-changing relationship with new technology, viewing the world ahead with great enthusiasm and just a touch of caution.

Repeatedly during the dinners, participants talked about new technologies they had newly discovered, or ways they had upgraded or learned new skills. A woman who had just started texting said, "The only thing I don't like is the three letters on a key. So I'm getting a phone with a slide keyboard next week." Another attendee's wife was delighted with her new e-book reader — "but she has to keep it a secret, because she works at a bookstore." A San Franciscan announced that he had finally discovered the technology for extroverts: "Putting dumb videos up on YouTube."

And it's clear that — if manufacturers listen — boomers will also change technology. Their enthusiasm for novel input and output techniques, advanced healthcare and wellness devices, smarter automobiles and homes, even better domestic robots, suggests a market with ideas for what they'd like to see, and a willingness to try new technologies that make sense in their lives.

As in other aspects of their lives, boomers remain open to new possibilities in technology. "We're in an interesting transition period at the moment," said a musician in New York. "It's like the time in music between the two World Wars when harmony exploded, and it took a while until things focused. We're in the same place with technology, where there are so many possibilities and trial and error, and in 10 years we'll know better what the answers are." The key word in that statement is *we*: the boomers plan to remain very much part of inventing the future.

15 – **A Look Ahead: The Boomer of 2019**

What do those attitudes mean for the boomer of the future? Here's a brief projection of what those lives might look like 10 years from now — in 2019, when the youngest boomer turns 55. These forecasts are based on technology that is either soon coming to market or feasible over the next decade, combined with the interests of the study participants.

Digital Fitness. Boomers will wear sensor-equipped exercise clothing to keep track of their physical condition during workouts as well as calories burned, all uploaded to an online record. Even their running shoes will contain sensors and GPS to provide additional data. Their mobile devices may even be set to (gently) remind them when they're falling behind on their exercise routines.

Chip Me, Doc. Once boomers are confident about security and privacy, they will be early adopters of electronic health records — many even choosing to have them implanted as tiny chips. And they'll start keeping their *own* records online, using digital diagnostic devices to upload their weight, blood pressure, cholesterol, even a mini-EKG.

Gene Scans. Boomers will buy low-cost gene scans that they integrate with their own health data. They'll then upload the information to new personal health social networks that privately link people with "comparables" — individuals with similar genetic makeups and backgrounds who can compare notes on health issues.

New News. Some boomers' morning breakfast routine will include reading the news with mobile devices and sophisticated e-readers, right next to the coffee and cereal. But even when boomers embrace the convenience and customizability of electronic delivery, they will still look to the major news brands for both news aggregation and credibility.

Goodbye to Tiny Screens. Boomers will demand mobile phones with built-in projectors: push a button and the image is there on the wall. Past that, we'll see data-glasses, with prescription lenses that are connected wirelessly to mobile devices. The display appears on the lower half of the lens — right in what used to be the reading part of bifocals.

Social Networks. For boomers, social networks will become as commonplace as the telephone — particularly the way social networks will link them with the lives of their children and grandchildren, in a way that's unobtrusive yet meaningful. And personal videoconferencing will be commonplace: high definition video cameras on the big screen in the living room will enable regular family-to-family chats.

Employment, Boomer-Style. Boomers who are past the 9-to-5 routine but still working part-time will become the masters of telepresence: videoconferencing with HD and surround sound. They'll move to some very pleasant locales, yet stay in the midst of the action. No longer at the water cooler, they'll instead organize their opportunities through sophisticated business-oriented social networks.

Parents. Boomers will lead the aging-in-place movement with their own parents, wiring their parents' homes with smart sensors that monitor motion, power usage, average conversation levels and footstep patterns, and then send regular updates that all is well — or else suggest a check-in to make sure the 'rents are OK.

A Safer, Kinder Internet. As boomers demand better security online, true Internet identities will become available — the equivalent of a driver's license or passport — not only improving security but also producing better online manners. Boomers, seeking trust and civility, will be the "settlers" of the current wild-west Web.

Simple, Self-Healing Computers. Boomers will expect computers to keep track of their own electronic "health" and report problems before they cause serious trouble. They'll prefer voice commands and touch screens, and mistrust any device that takes more than one page of instructions.

Money to Go. The mobile device will become both credit card and cash equivalent, and boomers will take to this as a natural progression of online banking.

Home, Green Home. The boomer dream home will have a full solar roof, plus energy monitoring that lets residents tailor their usage to maximum efficiency. Domestic robots will be increasingly common appliances and, in new homes, floor plans and kitchen layouts will be designed to be "robot friendly."

Video Game Fever. Boomers will become video-game regulars, primarily using motion-sensing video game consoles rather than old-fashioned game controllers. One favorite genre will be games that let players use real sports equipment — from ping-pong paddles to golf clubs — to work up a sweat playing online competitors on the big screen.

Key to Statistics Sources

1 – Fox, Susannah and Madden, Mary. Generations Online, Pew Internet & American Life Project, January 22, 2009, http://www.pewinternet.org/Reports/2006/Generations-Online.aspx, accessed on October 7, 2009

2 – U.S. Census Bureau, 2008

3 – U.S. Federal Reserve, 2007

4 – "Greying Gadgets: How Older Americans Shop For and Use Consumer Electronics," Consumer Electronics Association (CEA)® and Compete– a TNS Media company, 2009

5 – support.com, August 2008

6 – *The Harris Poll*® April 10, 2008, "Majority Uncomfortable with Websites Customizing Content Based Visitors Personal Profiles" Harris Interactive Inc. All rights reserved.

7 – Burst Media, "Online Privacy Still a Consumer Concern," February 2009

8 – "Surveying the Digital Future," Center for the Digital Future, USC Annenberg School, 2009

9 – U.S. Department of Education, National Center on Education Statistics, 2007

10 – iStrategyLabs, July 2009