Cyber Security, Safety, and Ethics for the Net Generation
Transcript

Part 1: The Generational Divide: Digital Immigrants vs. Digital Natives

Julia Allen: Welcome to CERT's Podcast Series: Security for Business Leaders. The CERT program is part of the Software Engineering Institute, a federally-funded research and development center at Carnegie Mellon University in Pittsburgh, Pennsylvania. You can find out more about us at cert.org.

Show notes for today's conversation are available at the podcast website.

My name is Julia Allen. I'm a senior researcher at CERT working on security governance and software assurance. Today I'm pleased to welcome Rodney Petersen, a Government Relations Officer and Security Task Force Coordinator for EDUCAUSE. Today Rodney and I will be discussing effective ways to educate the Internet generation about some really critical topics: cyber-security, cyber-safety, and cyber-ethics. So welcome Rodney, really glad to have you with us today.

Rodney Petersen: My pleasure. And thanks for the opportunity to speak with your listeners.

Julia Allen: You're welcome. So some of our listeners may not be very familiar with EDUCAUSE. Can you tell us a little bit about the association and the work that it does?

Rodney Petersen: Yes, I'm happy to. EDUCAUSE is a nonprofit association. And our mission is to advance higher education by promoting intelligent uses of technology. So our membership is colleges and universities, with over 2,200 member institutions with 117,000 active members and also 250 corporations. And we have a headquarters in Boulder, Colorado, and an office in Washington, D.C. And our focus areas currently are topics such as teaching and learning, managing the enterprise, evolving role of IT in leadership, and e-research and e-scholarship.

My role supports the efforts of our Washington office to influence federal policy and regulations especially in the areas of privacy and security. So as the government relations officer, I work closely with Congress, federal agencies, and other higher ed associations, and IT trade associations to represent higher education's interests in Washington. I'm also the coordinator of the EDUCAUSE/Internet2 IT Security Task Force that has been in place since about 2000 working to improve information security and privacy across the higher education sector.

Julia Allen: Well, and for our listeners too, in the interest of full disclosure, I work closely with Rodney on the Security Task Force, and we're currently doing work in security governance, which I've really enjoyed working with some of the other universities, the chief information security officers and colleagues in the EDUCAUSE network. It's been really great.

Rodney Petersen: And we're pleased to have Carnegie Mellon's cooperation and partnership in that effort. In fact, that's a key part of what we do within the Task Force is not only partner within colleges and universities, but reach out to organizations like your own that are doing research and development, work with businesses, and certainly work with the federal government, because obviously cyber security is a national concern and cuts across sectors.

Julia Allen: So Rodney, turning to our topic today, could you start off by telling us a little bit from your perspective, who makes up NetGen, the Internet generation? What are their constituents, and tell us a little bit about them.

Rodney Petersen: Yes. So, not surprisingly, colleges and universities are very focused on generational issues because it influences our future trends and will directly impact how colleges and universities delivery education and services. So we define different generations by birth cohorts who share common location and history or common peer persona that reflects their collective identity. And of course this translates into different life experiences, attitudes, behaviors, learning styles, and perspectives on the use of the technology.

So let me just quickly summarize some of the generations as we currently see them, and then I'll specifically answer your question about the Net Generation. So we have what we call the matures or the people who were born before 1946. And generally speaking, these are probably our parents or grandparents or people of retirement age. And then secondly, we know about the baby boomers, the 1947-, the 1964-born generation, of which many of us are a part.

And then we start talking about Generation Xers, GenXers, those born between 1965 and 1980. But then we move into kind of the Net Generation age, also quite often referred to as Millennials, and those are people born specifically between 1981 and '94, and then some people talk about the post-Millennials, 1995 and beyond.

But in short, the Millennials, or the Net Generation, are those people who really grew up with the Internet and didn't have to learn about it as second nature. It's just part of who they are. So those differences are reflected by more than just age. It includes differences that are based on social, economic, environmental, political, and technological different perspectives and experiences.

Let me just also give you some quick examples of the technology experiences that are different among the ages. So mature people, the retirement age folks, were exposed to the golden age of radio. They grew up with 78 RPM records and with operators and party-line telephone systems. Whereas the boomers, like myself, grew up with television and FM stereo and mainframe computers and LP records, which by the way I still have a few of those stored in my basement.

Julia Allen: Well they're pretty valuable today.

Rodney Petersen: That's right. And then certainly, the Generation Xers are those who began playing video games and who were being introduced at the time to Unix and

email and brand names like Apple and Microsoft and certainly CDs. But again, the Net Generation, the technology they're most used to is the Internet as we know it today, the World Wide Web, technology such as mp3, DVD, PDAs, cell phones, instant messaging, blogs, social networking. I mean all terms that are at the tip of our tongue today, but that's been part of their everyday experience.

Julia Allen: So from your observation and the work of the EDUCAUSE members and constituents, what do you see? How has technology influenced the way that the Internet generation or the Millennials learn and behave? Because so many of them are starting to come into our workforce as well so we have to think about them as both students and employees.

Rodney Petersen: So another way it's been referred to is distinguishing between digital natives and digital immigrants. Today's students, and quite frankly not only students but the young adults who are in the workforce today, are native speakers of the digital language of computers, video games, and the Internet. And that means that they process information and behave differently than previous generations.

Now, Julia and I don't mean to put ages to our name but knowing both of us well, we might be referred to as digital immigrants meaning that we have to adapt. In fact, we not only have had to learn technology because it hasn't been first nature for us but some people might even say that our accents are pretty discernable because we didn't grow up using it in the same way the younger generation did.

And when you think about technology today, technology compared to previous generations, it's more available, more personal, more mobile, more powerful, more multifunctional and multimedia, more communication-centric, so that is certainly what the Net Generation of students and employees grew up with and what they're expecting.

Part 2: NetGens: How They Use Technology, How They Learn

Julia Allen: So when it comes to educating this particular generation, what do you see as some of the unique challenges, again, both in an academic setting and in the workplace?

Rodney Petersen: So let me also answer that by just giving you some statistics of what students or employees by the age 21 will have experienced. By the time they reach the age 21, they will have come to your work place or to our universities having watched 20,000 hours of TV, spent 10,000 hours on cell phones, 10,000 hours playing video games, sent and received probably close to a half a million email or text messages. But, by the way, only under 5,000 hours reading. So their experiences, their exposure, their use of technology is very different than those of us who are training, supervising, educating them as they come into our environments.

So some of the unique challenges for this generation, I think both in the school and the workplace, would include the fact that the attributes that they bring are that they are much more team oriented and much more social than perhaps previous

generations. They live in the moment, they are easy to multitask, and they really prefer experiential learning. They prefer doing than hearing and they prefer interactive learning experiences.

So in short, the NetGens' expectations have been shaped by their experiences, their service expectations, by websites like Google, Amazon.com and ebay. Their expectations include 100 percent uptime, immediate response, easy navigation, the ability to personalize their environment. And they expect everything to be online – and, by the way, everything to be free.

Julia Allen: You're right when you talk about us being immigrants. Because as I listened to you describe these various characteristics, I can remember pretty easily trying to learn to adapt to all of that way of operating.

Rodney Petersen: Right. In fact, another little anecdote – when you think about our experiences in college and university compared to today's students, today's students pick their classes on RateMyProfessors.com; they get to know their classmates through Facebook.com; they share their lives with others on MySpace.com; and increasingly, as they become professionals and enter our workforce, they connect professionally through LinkedIn.com. So a very different set of communication and networking and socialization tools than what previous generations were used to.

Julia Allen: So when it comes specifically to content or ideas relevant to this podcast series, which is focused on security concerns, what do you see, drilling down a little bit, some of the specific issues, challenges in educating this generation about topics like cyber-security, cyber-safety, cyber-ethics? As you said, they share so much more freely, they're not as concerned about privacy, transparency is the rule of the day. So what do you see in this educational realm?

Rodney Petersen: Well, first of all, they're going to come to our universities or to your workplaces with a certain set of assumptions and expectations about technology. And I think that's going to be one of our initial challenges. As I said earlier, they're going to be used to being always connected. They're going to be used to technology as a doorway to social networks and communities.

They're going to be able to process information probably faster than earlier generations. And they are visually, not textually, oriented. And when searching for information, their tendency is to go online first and look for websites versus going to the library or textbooks or other traditional sources of information. And that's why many of our students complain that compared to Google, the library tools are cumbersome and arcane.

But they live in the now and they expect the immediacy of technology. And they're the first generation to really be producers of content and not just consumers. So they bring this mindset with respect to what they're entitled to, quite frankly, with the use of technology in the universities and in the workplace. And I think we have to be prepared for those fluencies as well as perhaps some potential challenges that presents.

With respect to kind of cyber-security, cyber-safety, cyber-ethics, I think there are some challenges right away that most of our organizations are confronted with. In fact, I think universities may be the cause of some of the problems that you're going to inherit.

One is that they're going to be fairly open to high levels of freedom and openness. And they may have to reorient how they use technology in the context of work. The social, the recreational, the personal uses of technology that they've become accustomed to in their home and maybe in the K-12 setting, and certainly in the higher education setting, is perhaps not an acceptable use of corporate computers and networks. And especially if you take technological measures to control that, there's going to be a contrast, if you will, in cultures between the NetGen and your corporate culture if you will.

But secondly is the mobility and the personal use of devices that they've come accustomed to. Aside from laptops, obviously, there's an increased use in mobile phones that are not just telephones anymore but mobile data devices. And quite often, whether they're laptops or mobile data devices, they might be connecting to your network.

And we've learned firsthand in the college and university community how challenging that can be when they might bring a computer from a home that may not have the same level of software or security technology in place and they could in turn infect the network and cause problems.

But having said that, I think we need to be open to the fact that this generation of students are extremely creative, extremely engaged, and quite frankly, that energy and creativity is exactly what we need in our current corporate environment given the concerns about economic stimulus and trying to advance innovation and science and technology in America. So I think finding the right balance in the workplace between managing our employee or students' use of technology appropriately with our corporate and cultural needs will be an important factor.

Part 3: Creatively Conveying the Right Messages

Julia Allen: Well, that's a perfect segue, because I always like to end our conversations as we come to our close with something tangible in terms of steps that business leaders who are running organizations where these folks are joining and contributing, and as you say, wanting to take full advantage of their energy and creativity. But do you have some recommended steps that organizations can take to strike that right balance, address both the risk and opportunity side that this generation brings?

Rodney Petersen: Right. So let me first talk about our messages with respect to let me just say cyber-security generally. The reason I like the three C's – the cyber-security, cyber-safety, and cyber-ethics components – is that if we just focus on cyber-security, we can quickly become too technical and talk about the software, the

hardware, and all the technological fixes that students or employees need to put in place.

And I think many students are going to be used to the cyber-safety messages because we've really been emphasizing them on children and teenagers the importance of being safe online, protecting yourself from sexual predators, and being careful about who you communicate with on the Internet. So that kind of socialization of the use of technology is easy to continue in college and I think easy to continue in the workplace.

So I think you're seeing a lot of movement away from cyber-security as the message towards cyber-safety. And I think similarly, the cyber-ethics messages are important to deliver in the workplace. Because again, if you just remove the word cyber, we can never get enough discussion and training and supervision related to ethical practices in business. And obviously as our practices and our time and our energies occur more and more online, the translation of solid ethical practices in the cyber environment is increasingly important and I think people can really relate to that.

So that's why I think you see groups like the Federal Trade Commission and the National Cyber Security Alliance and others trying to simplify their messages a little bit to talk about behaviors and what we should and shouldn't do. And then secondarily talking about the kind of tools that we might use or leverage to be more safe and secure and ethical online.

But I think the second key message, which really the Net Generation will remind you of if you don't come to it first, is how we deliver awareness or education to our employees. As I said earlier, they're more graphically oriented and less text oriented. In other words, they're more inclined to react positively to multimedia and visual presentations and probably less inclined to read text that might include policies and procedures or training messages.

So we need to be creative, we need to think about how to do video and multimedia and maybe computer games to get across messages both related to this topic and maybe other aspects of the workplace. And again, that is why I think if you go to the Federal Trade Commission's website, they have the OnGuard Online series. You'll see a number of fairly fun and interesting and interactive games ranging from phishing to playing bingo and other things that really are trying to subtly get across some awareness messages but through an interactive and multimedia kind of format.

That's also why, within our EDUCAUSE/Internet2 Security Task Force the past few years, we have started a student video contest recognizing that not only is the multimedia use of video the way to reach students but the process of having students create the content instead of us creating it for them is not only going to be educational for them but certainly is going to be more inclined to relate to them in a way that they're used to.

Julia Allen: Well those are excellent suggestions. I particularly like the one of getting the students or getting the employees involved in their own educational process.

Because I notice in this community, peer-to-peer carries a lot more weight than anything they're going to hear from us.

Rodney Petersen: That's right, that's right.

Julia Allen: So Rodney, in addition to the sources that you've kindly mentioned, are there some others that you'd like to point our listeners to?

Rodney Petersen: Yes. The EDUCAUSE Learning Initiative is focused on trying to improve learning in colleges and universities. In short, historically, a lot of emphasis has been placed on preparing faculty members as teachers. And sometimes it's been referred to as the "sage on the stage." Whereas I think because of changes of the net generation, as well as just better research about how people learn, we've shifted the focus within academia to be more learner focused and focused on how students actually learn.

So again, instead of the "sage on the stage," the faculty member is now the "guide on the side." And those kind of themes, along with better understanding generational differences, are the very kinds of things the EDUCAUSE Learning Initiative are focused on. And so I highly recommend that as a resource for anyone who wants to better understand the Net Generation and what kind of adaptation to technology you might use to improve learning.

Then the second resource that I've referred to a few times is our EDUCAUSE/ Internet2 Security Task Force, which not only focuses on improving security at colleges and universities, but as a big part of what we do is try to improve and increase awareness across the campus community. And of course that includes students but it also includes traditional adults such as our faculty and staff. And so we're constantly preparing new resources and working in conjunction with organizations like the FTC and the National Cyber Security Alliance to promote the October is National Cyber Security Awareness Month. So you will find more resources there as well.

Julia Allen: Well Rodney, this has been a really fascinating conversation. I've so enjoyed exploring this with you. And thank you so much today for your time and expertise.

Rodney Petersen: You're welcome. And I'm once again very happy to participate.