

GERONTECHNOLOGY

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Understanding Older Adult Information
and Communication Technology Use

BY

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INVESTOR IN PEOPLE

To my children: for reminding me the joys of curiosity and always
giving me a reason to adventure.

To my husband: for being an equal partner (in crime).

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About the Author

Johanna L. H. Birkland is an Assistant Professor in Communication Studies at Bridgewater College in Bridgewater, Virginia, USA. An interdisciplinary Gerontechnology scholar, she uses a mixture of approaches to study how technology use changes over the life course as well as intergenerational technology use and communication.

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Chapter 1

Understanding Older Adult Technology Use: An Introduction to the ICT User Typology

Gwen,¹ born in 1946, is a retired administrative assistant who wants all the technologies that “young people have.” She has a large family, with five children, over 20 grandchildren, and several great-grandchildren. Highly involved in her community, she volunteers 20 hours a week as a teacher’s aide in an inner-city school, is active in her multi-generational church, and runs a small food pantry for her neighbors out of her apartment closet. Many of the neighborhood children in her low-income housing complex call her “Grandma Gwen.” Gwen is very interested in the technologies that young people use to communicate, including cell phones, social media, and texting. She is a prolific user of these communication technologies and mimics the use of the young people she knows:

I am the queen of texting. I have to text. I’m forced to do texting because some of my grandchildren just will not answer the telephone. They have their phones on vibrate so they just will not talk on the phone. So, if I want to ever talk to them I have to text. I’m a great texter and I know all the abbreviations. I make some of them up myself and I have them ask me what they mean [...] I don’t know what they say or think about me doing all this texting, but I love to do it. And I have to do it. (Gwen)

Margaret, born in 1938, has recently retired from her work as an administrative assistant, a role she returned to in the 1980s when she divorced after 20 years of staying home with her children. She enjoys gardening and attending her book club and has just volunteered for a political campaign. Margaret carefully regulates her use of the computer, the Internet, and her simple flip phone, often setting a timer to limit how long she stays on her computer. She fears that without such restrictions, she could be “sucked in” – losing track of time and disengaging from the world around her – a potential problem she sees with all technology use, including the television and telephone. She keeps her computer

¹All participants’ names are pseudonyms.

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in the basement den and a television in the smallest spare bedroom to keep her main living space technology-free. She is cautious about technology and feels that it is often overused:

I feel that there's a need, there's definite need for all this modern technology. There's a need for it but I think it's just like many, many things it's overdone. I think it's absolutely mind-boggling ridiculous that cars now have TVs in them. Look out the window. Enjoy, see what you're seeing. It's removing them [technology users] from a part of life that I think is important [...] you go to the mall and you see people walking around and they're just talking on the cell phones. Talk, talk, talk on the cell phone. I thought you went to the mall to go shopping. So, I think that people go overboard on all that stuff. (Margaret)

Why are these two women so different? Why has Gwen embraced technology with such enthusiasm, but Margaret is cautious and controls her use of computers and cell phones? How do these women's different approaches toward technology impact their lives, and how did the meanings they hold for Information and Communication Technologies (ICTs) develop?

This book presents a theory of ICT use by older adults, the ICT User Typology, which not only explains the diversity in older adult ICT use, but also helps practitioners, scholars, and designers to understand the older adult population's needs and wants when it comes to technological interactions. This data-driven theory emerged from the findings of a rigorous, in-depth interpretative interactionist (Denzin, 2001) series of comparative case studies (Yin, 2009) of the use of ICTs by community-dwelling older adults (ages 65–75) in their everyday lives. The ICT User Typology describes five ICT user types – each of which has a unique view on technology and uses it in different ways. The focus of this book is in detailing these five types and understanding their fundamental traits. While the ICT User Typology is a data-driven theory, it has many practical applications for those who work with or design for older adults, including suggesting targeted design and marketing opportunities and identifying those older adults who are likely to take part in (or be excluded by) technological initiatives. (Practical applications of the theory are outlined in Chapter 10.)

The ICT User Typology: The Five User Types

The ICT User Typology is a theory of older adult ICT use that explains, describes, and predicts an older adult's use of multiple ICT forms across various life contexts: family, work, leisure, and community. The ICT User Typology was developed from an intensive series of dialogic case studies of 17 older adult members of the Lucky Few generation, including over 156 hours of intensive interviews with these older adults and their friends, family members, and coworkers about ICT use; numerous observations of their homes and workplaces and

of the older adults using technologies; and careful review of the documents that the older adults used in conjunction with their ICTs. The typology allows us to understand how and why there is such diversity in older adults' ICT use and provides guidance in implementing customized services and products to meet the needs of our aging societies. In particular, the ICT User Typology categorizes older adults' ICT use into one of five user types, each of which has a unique pattern of ICT introduction, use, display, and meaning they ascribe to technologies:

The *Enthusiast* user type thinks ICTs and other forms of technology are great fun toys. They have wonderful memories of using ICTs as children, including being encouraged by adults to “tinker” and “play” with technology. They carry this love of ICTs throughout their lives, often choosing technical careers. They surround themselves with other Enthusiasts as friends and, in some cases, become romantically involved with other Enthusiasts.

The *Practicalist* user type views ICTs as tools that are used to get a job done, for a specific purpose. They are typically exposed to ICTs in their work and they tend to hold jobs in which technology is heavily used. They are easily able to categorize their ICT device use into predominantly being used for one life context, such as being able to state that they use the Internet mostly for work, rather than in their leisure, family, or community lives.

The *Socializer* user type tends to have large intergenerational networks and be highly involved in their communities, often through religious organizations and/or large families. They view ICTs as connectors between people and tend to prefer mobile communication technology. Socializers, in order to keep in touch with their youngest contacts, learn to use the ICTs that their younger counterparts are using.

The *Traditionalist* user type also speaks about their love for ICTs. However, the technologies that Traditionalists love are the ones from their young adulthood (in the case of the older adults spoken about in this book, the television, radio, and telephone). They have a tendency toward nostalgia and find themselves so in love with these more traditional technologies that they have little room in their lives for more modern forms (e.g., computers and cell phones).

The *Guardian* user type tends to view *all* ICTs with suspicion, as they believe that technology can bring out the negative traits in individuals – traits such as gluttony and laziness. While they use many modern forms of advanced ICTs, they tend to be very cautious and regulated in how and how much they use them. They view themselves as protectors, or guardians, of society in its use of ICTs.

Why Is a Theory of Older Adult ICT Use Necessary?

Why do we need to understand older adult ICT use? The short answer is that the vast majority of our societies are aging. The worldwide older adult population (those age 65 and older) is projected to nearly double in the first third of

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this new century – from only 6.9% in 2000 to 12% in 2030. The more detailed figures are striking: the population percentage of older adults is expected to increase from 15.5% to 24.3% in Europe, 12.6% to 20.3% in North America, 5.5% to 11.6% in Latin America and the Caribbean, and 6.0% to 12.0% in Asia during those same three decades. Even in sub-Saharan Africa, where high fertility rates have continually bolstered the younger population, the percentage of older adults is still expected to increase from 2.9% in 2000 to 3.7% in 2030 (Kinsella & Velkoff, 2001).

At the same time, our aging societies are facing an increasingly digitalized world. Services and organizations, including governments, have increasingly moved information and resources online – and in some cases, these can only be accessed digitally (Wright & Hill, 2009). Older adults (those aged 65 and older) report significantly lower usage of advanced ICTs such as computers and smartphones when compared to younger individuals (Heinz et al., 2013; Reizenwitz, Iyer, Kuhlmeier, & Eastman, 2007; van Deursen & Helsper, 2015; Van Volkom, Stapley, & Amaturro, 2014). These two phenomena taken together – lower use rates and increasing digitalization – have led to concerns that a “gray digital divide” will exclude elders (Friemel, 2016; Millward, 2003) and has been portrayed as part of the larger “aging crisis” facing our societies (Wright & Hill, 2009).

But do our aging societies represent a crisis, or an opportunity? Are older adults able to get access to the digital products and services they need, and what about the products and services they want? How can organizations take advantage of this growing market? How can we understand older adult technology use, and how can we understand the diversity in such use? What *are* the characteristics of the older adult market for ICT² services and devices?

The power of the ICT User Typology is that it allows classification of older adults into one of these five user types, helping us to understand how each of these types is introduced to, uses, and finds meaning in technology. For researchers, the ICT User Typology presents a theory of ICT adoption and use that may be insightful to apply in their own studies. For practitioners who work with older adults, the ICT User Typology presents an overview of the different

²The ICT User Typology was developed based upon the study of ICTs that are marketed to the general public. This includes both physical ICTs (e.g., cell phones and computers) and software and applications (e.g., social networking applications and computer programs). ICTs include technologies such as computers, telephones (landlines), cell phones, Internet, email, social networking software and applications, radio, television, and print media (magazines, catalogs, and newspapers). Internet and computer applications are also considered ICTs, such as Skype, word processing, digital image software, and so on. The theory also encapsulates assistive technologies that allow individuals to access the information or communication potential of these devices or media, such as “TV Ears” (a device that allows a hard of hearing listener to listen to a television). Assistive devices that do not allow a person to access a communication or information device (such as ramps, wheelchairs, and oxygen tanks) are not included.

ways older adults approach ICTs in their daily lives, illustrating which older adults are likely to take advantage of digital products and services and which older adults are at risk of exclusion, particularly if such use is required. For designers, the ICT User Typology guides the targeted and customized development of ICT products and services for the older adult market.

The ICT User Typology: Use as Domestication Patterns

The ICT User Typology suggests that there are five unique and easily identifiable domestication patterns among older adults. Domestication is the process by which ICTs are brought from the larger outer world into individuals' lives, developing routines of use and meaning (Silverstone & Hirsch, 1992; Silverstone, Hirsch, & Morley, 1994). Domestication looks beyond the simple adoption or ownership of a device to understand ICT use in a context-rich environment (Haddon, 2007; Lie & Sørensen, 1996; Silverstone & Haddon, 1996; Silverstone et al., 1994) as a series of steps:

- ICTs are first *introduced* to, or “appropriated” into a setting. During this time, ICTs are removed from the “public sphere” to acquire meaning in the “private sphere” of the home. Meanings in the private and public spheres are not necessarily similar: The same ICT can have vastly different meanings to different people.
- The ICT is *displayed* and arranged in the home, and through the process of objectification, certain individuals in the home come to identify with and feel comfortable with these technologies, while others do not.
- The ICT is *used (or not)*, and this use is impacted by larger contextual factors in the home.
- The ICT and its placement in the home (or on the person) develop *meaning* to both the individual and the larger social society and help in both self-identification and the identification of others, as users and non-users.

As a broad theory of ICT domestication, the ICT User Typology demonstrates the importance of taking a multiple ICT perspective to understand the older adult use and non-use. While a few studies have examined how older adults use multiple ICTs (Hilt & Lipschultz, 2004), the existing literature has typically focused on exploring use and non-use of a single ICT per study (typically computers and the Internet (van Deursen & Helsper, 2015; Xie & Jaeger, 2008)). Such a perspective does not illustrate how a non-user compensates for non-use or how older adults integrate the use of various ICTs together. Instead, The ICT User Typology focuses on how older adults incorporate, reject, and integrate the spectrum of ICTs into their lives. For instance, the Traditionalist user type in older age relies on one or two “point people” to access the more modern ICTs they do not use, while they deeply appreciate and heavily use the more traditional ICTs of their youth (radio, television, and telephone).

The ICT User Typology: A Context-rich Gerontechnological Theory

The ICT User Typology explores ICT use across older adults' entire life contexts: their family, work, community, and leisure lives. Most importantly, it captures and describes older adults' perspectives on their use, what makes them want to (or not want to) use a device, and what motivates them and why in their own words.

Gerontechnology, or the interdisciplinary study of gerontology and technology, has existed since 1989 (Graafmans & Brouwers, 1989). Gerontechnologists come from a diversity of fields, ranging from the sciences to social sciences; and span academics, clinicians, and other practitioners. As can be imagined, the literature in this area is quite diverse, being influenced both by the background of the researcher(s) and by the vast number of questions that can be asked about aging and technology.

The goals of Gerontechnology research and application include not only preventing, accommodating for, and delaying the cognitive and physical declines related to aging, but also for using technology to enhance the lives of older adults. Beyond the fundamentals of being well-cared for, Gerontechnology also includes studies of how technology can be used to promote older adults' life satisfaction, communication, social connectivity, and volunteerism (Fozard, Rietsema, Bourma, & Graafmans, 2000). Gerontechnology has tackled using technological solutions to provide health care to our aging population (Czaja, 2016; Fischer, David, Crotty, Dierks, & Safran, 2014), smart home solutions (Majumder et al., 2017), and general guidelines for creating adaptive and inclusive technologies (Bouma, 2001). Gerontechnology has called for researchers to study all the areas of older adults' lives: their health, family, community, leisure, and work lives (van Bronswijk, Bouma, & Fozard, 2002; van Bronswijk et al., 2009). Recently, there have been calls for Gerontechnologists to not just understand what ICTs older adults are adopting, but how and why they are using them (Schulz et al., 2015). The ICT User Typology addresses both the *how* and the *why* of older adult ICT use.

One important contribution that the field of Gerontology has made to the study of Gerontechnology has been the importance of understanding ICT use in terms of generations. Birth cohorts are groups of individuals who, by consequence of being born closely together, experience historical events at a similar life stage, developing a shared generational consciousness (Carlson, 2009; Edmunds & Turner, 2002; Eyerman & Turner, 1998). Media and technology is an important part of any generation's experience (Naab & Schwarzenegger, 2017). The ICT User Typology was developed using generational sensitive sampling of the youngest generation of individuals who had reached older adulthood in the United States: the Lucky Few (participants ranged in age from 66 to 76 at the time of the study (born in 1936–1946)). The Lucky Few are a small generation born during the Great Depression and World War II (WWII). They tended to serve in the military during peacetime, while enjoying the benefits created for the WWII Generation that served before them, such as the GI Educational Bill.

The Lucky Few women made tremendous strides in joining the workforce compared to previous generations; however, this was mainly in “pink-collared” professions (as nurses, administrative assistants, teachers, etc.) (Carlson, 2008).

Although the ICT User Typology was developed using a single generation of older adults, it is applicable to all generations/birth cohorts. Evidence from interviews with the older adults’ families, friends, and coworkers indicates that these five user types are universal and likely found in all generations at mid-adulthood and beyond. These additional individuals interviewed in this study ranged in age from 27 to 85 (Millennials to the WWII Generation), and their perspectives on ICT use echoed the five user types described in this book. It is likely that a person’s user type is influenced by childhood and early adulthood interactions with technology, regardless of a person’s generation/birth cohort.

While technological advances do not influence the essence of the types (Guardians will always be suspicious of all technology; Enthusiasts will always want the latest and greatest devices), the technologies an individual of a specific type prefers will reference their generational technological experiences. For instance, Traditionalists prefer the technologies of their youth. For members of the Lucky Few birth cohort (born in 1929–1946), the technologies of their youth were radio, television, and telephones. For members of the Millennial birth cohort (born in 1983–2001), the technologies of their youth were computers, cell phones (including smartphones), and social media (in addition to television and radio). Therefore, a Millennial Traditionalist will prefer the media of his/her youth (cell phones, social media, etc.) rather than newer technologies that develop in the future. What makes a Traditionalist is *not* their non-use of computers, but instead, the fact that they reject forms of technology that were not available in their youth. Chapter 8 explores the implications of the user typology for younger generations in-depth. Since the influences of childhood and early adulthood are incredibly important in shaping individual’s tendencies to become one type over another, Chapter 10 details the implications of the ICT User Typology for both gerontologists and childhood educational programs.

Chapters 2 through 6 deal with an extensive description of each of the five user types: the Enthusiast, Practicalist, Socializer, Traditionalist, and the Guardian. In these chapters, we hear directly from older adults. We peek into their homes and workspaces and come to understand ICT use from their own perspectives. Chapter 7 summarizes and contrasts the five user types. Chapter 8 explores the applicability of the ICT User Typology beyond the Lucky Few generation, exploring its impacts across generations. Chapter 9 grounds the ICT User Typology within other theoretical perspectives, understanding its fit within the gerontechnological and technology use literature. Chapter 10 provides recommendations for applying the user typology for practitioners and scholars. Chapter 11 provides a detailed methodological description of how the ICT User Typology was developed, allowing further study and possible replication not only in older adult populations, but also in younger populations as well. A Glossary of terms is included.

The next chapter takes us into the lives of Enthusiasts to understand their love of “all things with plugs” (Alice).