THE 21ST CENTURY SENIOR LIVING COMMUNITY

BUILDING A PLATFORM FOR THE FUTURE OF SENIOR LIVING

Dear Senior Housing Readers,

In a profession where the care of your residents takes precedence over all things, it is hard to imagine how technology could actually empower you to have more time to care for your residents. At CDW, we liken it to the years when Baby Boomer children began crowding the classrooms and there were not enough teachers to support the various disabilities and diverse learning styles of the students—schools looked to technology to re-imagine how they were teaching and transforming the learning experience. CDW was there to build the infrastructure and technology solutions to introduce and design digital classrooms across the country—a concept called the "21st century classroom."

Senior housing is at this very crossroads today. The lack of technology literacy and the growing shortage of caregivers are pushing senior housing to view technology in a new way—as a vehicle to support a growing tech savvy population and optimize workflow to do more with less. And once again, CDW is here to scale, build and transform the experience of a "person-centered" profession with technology. The playbook is similar—same goals, different players. Innovation and applications need to be built on a solid foundation of best-in-class infrastructure. Senior Housing needs a trusted advisor to re-imagine senior care and build the "21st century community."

CDW's VP of Healthcare, Bob Rossi, and I started this conversation when education was starting to roll out one-to-one computing—an initiative where schools provide a device for every enrolled student. At that time, I was working with large senior care providers on how to engage and empower residents with technology in my role as National Director of Innovation and Resident Technology. CDW Healthcare was the partner who helped me build scalable solutions that made a difference with my residents. It was not about the "new shiny" technology, but rather technology solutions that drove meaning and purpose by connecting loved ones to families and bridging the digital world to an analog and paper-only senior living community.

Our view on technology is not as a replacement to skilled associates and caregivers in the communities, but to provide the platform that allows senior living operators and care staff to focus on more engagement, and add more time for their residents. Most importantly, technology should enable you to make the best difference for every resident with whom you are entrusted.

The assortment of technology stories, wisdom and solutions that follow is here to help you imagine the possibilities of how technology can begin to transform your senior care community. We dare you to start re-imagining what your community should look like for the 21st Century senior care.

Thank you for allowing us to share,

Ginna Baik
Strategic Business Development Executive
CDW-Healthcare

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ABOUT
CDW

CDW is a leading multi–brand technology solutions provider to business, government, education and healthcare organizations in the United States, Canada and the United Kingdom. A Fortune 500 company with multinational capabilities, CDW was founded in 1984 and employs approximately 8,500 coworkers. Our broad array of offerings range from discrete hardware and software products to integrated IT solutions such as mobility, security, cloud, data center and collaboration.

CDW Healthcare is focused exclusively on serving the healthcare marketplace. The dedicated healthcare team leverages the expertise of CDW solution architects to deliver best–in–class solutions from data center infrastructure through the point of patient care.

ABOUT
SENIOR HOUSING NEWS

Senior Housing News (SHN) is the leading source of news and information about the senior housing industry.

With a national reach of more than 30,000 professionals, SHN readership includes senior housing operators, developers, banking institutions, real estate investment trusts, private equity firms and service providers that cater to the industry.

SHN provides a cutting–edge and targeted platform unlike any other publication, giving you the opportunity to reach decision–makers every day.

KEY
TAKEAWAYS

The 21st century senior living community may seem like a far-off dream, but with a focused plan and the proper framework, it's entirely within reach. Here are a few key takeaways to keep in mind as you push to bring your community into the 21st century.

1
The 21st century senior living community is not Grandma's nursing home.
The long-standing notion of drab, dreary, old-fashioned nursing homes as places where Grandma and other seniors live is a thing of the past. The 21st senior living community stands as a thriving tech ecosystem, where devices interact with one another to enhance resident and staff experiences—and this is what providers should strive for.

2
Technology must be implemented with purpose.
In order to achieve success as a 21st century senior living community, providers must completely understand how technology products work, where they fit into their facilities and how they would benefit residents. This requires determining company initiatives, strategic planning and appropriate budgets, to achieve both individual and all-encompassing goals.

3
Be sure to consider the many facets of the 21st century senior living community.
Providing residents with tablets and calling it a day isn't the way to reach 21st century senior living community status. Rather, there are many areas in which providers need to concentrate their efforts to improve the resident experience and operational efficiencies, including wellness and health care, resident communication, safety and security, entertainment and staffing.

4
Infrastructure comes first, no matter what.
Senior living providers can have all of the latest and greatest technology, but if they don't have the proper infrastructure to support it, their efforts will certainly fall short. Installing a blend of hardware, software, networks and IT departments allows providers the means to launch new technology initiatives, but it all starts with the needs of the community itself—and depends largely on what future residents will demand.

5
Remain flexible—there's no one single formula for 21st century senior living communities.
Considering the needs of today's senior living residents and thinking ahead to the desires of future residents are challenges that all providers face in implementing technology. To truly achieve the distinction of 21st century senior living communities, operators need to plan for change and create environments that can quickly adapt to new technologies.

THE 21ST CENTURY SENIOR LIVING COMMUNITY

The turn of the century brought with it tremendous innovation in technology.

The Internet has become a staple for all ages, and seemingly everything has gone mobile as information is shared over smartphones and other devices. Artificial intelligence is no longer a far-fetched idea—rather, it's an increasingly plausible solution for some of the world's biggest problems and daily activities.

In the 21st century, it's as though nothing can be completed without some form of technology involved.

"Technology is the hallmark of everything that we do in reality," says Majd Alwan, senior vice president of technology and executive director of the LeadingAge Center for Aging Services Technology (CAST). "Technology has crept up on all of us and has become part of the fabric of our daily lives, even if we were reluctant at first."

The rate of innovation and the constant introduction of new devices has left the senior living industry scrambling to keep up. Paper job applications and care documentation don't cut it when it comes to recruiting and retaining millennial staff, just as bingo won't keep residents engaged, and once-a-day check-ins don't suffice to maintain their optimal health and wellness.

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> Senior Vice President of Technology and Executive Director of the LeadingAge Center for Aging Services Technology (CAST)

Senior living needs to make the ultimate push into the 21st century. With that push, providers can't ignore technology.

"The market is going to demand it, and not only the residents, but their families, their children, their grandchildren and millennial caregivers," says Dean Maddalena, President of studioSIX5, a Austin, Texas-based senior living interior design firm. "It's part of everyday life, and we want these communities to mimic everyday life as much as possible."

Currently, 61% of the Silent Generation—people born between 1925 and 1945—uses the Internet, according to 2016 data from the Pew Research Center, which comprises the majority of senior living residents today. Internet use among older and younger baby boomers, at 78% and 83% respectively, offers a glimpse of what future senior living residents

will expect, and nearly universal Internet adoption among their adult children paint an even clearer picture of what communities need to provide.

The oldest baby boomers turned 70 in 2016, according to AARP, meaning more and more members of this approximately 76.4–million–strong population will be reaching retirement age and considering senior living options in the years ahead, and they'll bring their different expectations when exploring their options.
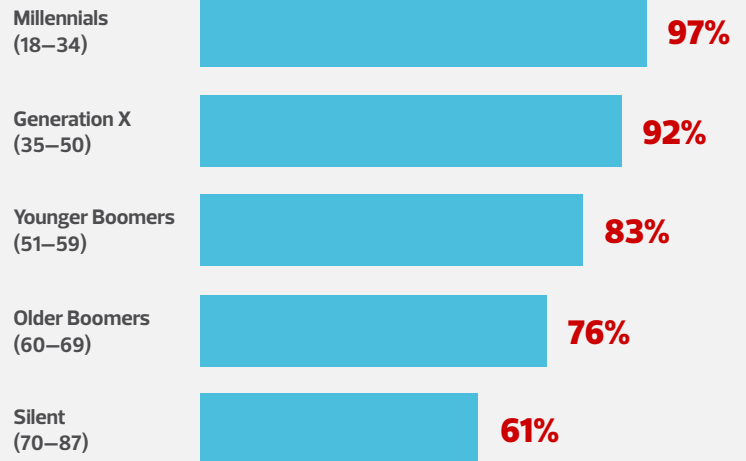
Industry players must strive to create a vibrant 21st–century senior living community in order to remain competitive amid changes in the health care landscape and client expectations.

From electronic health records (EHRs) and smart homes to virtual reality and wearables, the senior living industry is poised for a dramatic shift.

INTERNET USERS BY GENERATION

Source: Pew Research Center

Generation	Percentage
Millennials (18—34)	97%
Generation X (35—50)	92%
Younger Boomers (51—59)	83%
Older Boomers (60—69)	76%
Silent (70—87)	61%

But Wi–Fi and individual devices alone won't cut it for senior living providers. The community of the future is not grandma's nursing home, and technology here and there will not suffice. Rather, the 21st–century senior living community is a fully functioning tech ecosystem where devices communicate with one another to improve the lives of staff and residents, largely hinging on the Internet of things (IoT), where all devices and communications are interconnected. It's a complete reimagination of what senior living entails, and it's poised to change the industry as it stands today.

THE VISION:

Mapping the 21st Century Senior Living Community

THE VISION: MAPPING THE 21ST CENTURY SENIOR LIVING COMMUNITY

The 21st century senior living community has many components, and defining it varies greatly by provider and perspective.

Overall, the vision largely deals with integrating technologies to:

- Increase efficiencies
- Optimize workflows
- Adhere to current residents' desires
- Prepare for future populations

Another crucial aspect of the 21st century senior living community is the Internet of things, and how it focuses specifically on connections—from staff to resident, resident to resident, resident to family and friends, resident to caregiver and more. Today, the proliferation of interactive devices geared toward senior care have made this level of connectivity even more achievable.

"For Ohio Living, it's trying to meet seniors where they are today, but also bringing things in to provide for the next generation of seniors," says Joyce Miller, Chief Information Officer for Ohio Living. "It's not leaving anyone behind, but also trying to look forward."

That means planning for change by creating environments that can adapt quickly to accommodate new technologies, according to studioSIX5's Maddalena.

"To me, it's going to be more about flexibility, because change is accelerating," he says. "Next year, you don't know what everyone is going to want."

Senior living providers will also be called on more and more to deliver on-demand, customized experiences for the people they serve, according to Kari Olson, chief innovation and technology officer for Front Porch and President of the

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> **Joyce Miller**
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Front Porch Center for Innovation and Wellbeing. This puts pressure on the traditional community model.

"In terms of how we operate, it's going to be a challenge for us to transform our businesses and what we can do on–demand," Olson says. "Technology has a huge role to play in enabling and supporting that."

Additionally, 21st century senior housing should be a place where technology fosters shared experience and an overall sense of community. And senior living of tomorrow will feature increasingly integrated technology, Olson says.

"What I see going forward is the integration into one overall system of services and supports for people," she says. "The end point is making sure the customers are connected to the right people at the right time, in a personalized way."

No matter how tech savvy seniors are today or will be in the future, though, it's important to consider the sheer amount of downsizing that occurs time and again in the aging process, as has happened with all other generations. That's not to say they won't want technology at all, but it's unlikely that they'll want a plethora of gizmos and gadgets at their disposal, says Suzanne Viox, executive director of Link–age Connect. And anything that is implemented should be as unobtrusive as possible.

Beyond the resident experience, there are business considerations to take into account, and the role technology can play in establishing senior living as a viable player in the health care industry as a whole.

"The 21st century seniors housing community is based on the idea that, whether we want to admit it or not, senior housing will become more and more a part of the post–acute continuum of care," says Charles Turner, president of PinPoint Senior Living, a developer and owner with 13 senior living properties in four states, and its operating company,

LifeWell Senior Living. "We will become a de facto partner with hospital systems, other post-acute providers and the medical community. As an industry, we need to provide more information to the marketplace to show how we care for our residents."

As a result, PinPoint looks to invest in technologies that show a quantitative outcome depicting efforts to improve quality of life for residents. That information then becomes a powerful tool as PinPoint communicates and forges relationships with the outside world.

Likewise, Steve Hopkins, former COO of Evangelical Homes of Michigan and president of Curo Technologies, sees technology as a means of being proactive rather than reactive in terms of seniors' health care, by collecting data about their day-to-day activities.

"We're trying to gather important information about how people are doing when no one is there," he says. "It's the recipe for future efficiency and cost reduction."

Senior living has historically lagged behind other industries when it comes to tech adoption—as of August 2015, 91% of providers had a wireless infrastructure on campus, according to a survey of almost 180 senior living CFOs from Chicago-based specialty investment bank Ziegler. But that percentage represents a recent sea change: The same study found that the percentage of communities that invested in Internet connectivity doubled between 2012 and 2013. And the quality and depth of the Wi-Fi offered may very well fall behind what's needed in the communities.
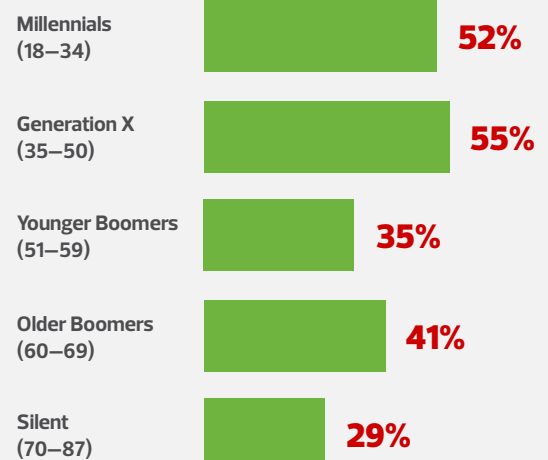
Although seniors have typically been associated with lack of interest in tech adoption, older adults who are coming of age for retirement will expect it. Only 25% of those in the silent generation use smartphones, as compared with 46% of older baby boomers and 59% of younger baby boomers. Tablet use is slightly more scattered, at 29% for the silent generation, 41% for older boomers and 35% for younger boomers.

TABLET USE BY GENERATION

Source: Pew Research Center

Generation	Percentage
Millennials (18–34)	52%
Generation X (35–50)	55%
Younger Boomers (51–59)	35%
Older Boomers (60–69)	41%
Silent (70–87)	29%

Moving forward, the senior living sector must think ahead and bring communities up to speed if they want to remain competitive now and in the future.

"It's really waking up and realizing where the world is heading," says Chris Guay, president and CEO of Vitality Senior Living. "It's important to adapt to provide something seniors really want."

What exactly they want, though, is the ever-persistent question. It requires not only paying attention to what current senior living residents desire in terms of technology, but also what prospective residents might be seeking, as well as those who will consider senior living in five, 10 and even 20 years. It also means looking outside the senior care industry for the latest technology for the latest technology trends in the hospitality, restaurant and retail sectors.

In any case, providers are taking various approaches to reach the ultimate goal of the 21st century senior living community, and that means contemplating innovative technology products, debating their use and benefits, and incorporating them as they see fit.

21st Century Senior Living Elements

SMARTPHONE USE BY GENERATION

Source: Pew Research Center

Generation	Percentage
Millennials (18—34)	88%
Generation X (35—50)	77%
Younger Boomers (51—59)	59%
Older Boomers (60—69)	46%
Silent (70—87)	25%

There's no surefire way to bring senior living communities into the 21st century, but there are certainly elements that propel them toward that goal. And providers have become increasingly creative in the types of technology they're deploying—the ways they're implementing the new hardware and software into their communities.

"Smart apartments"—a popular buzzphrase in the industry—can include a wide variety of Internet-connected devices, such as:
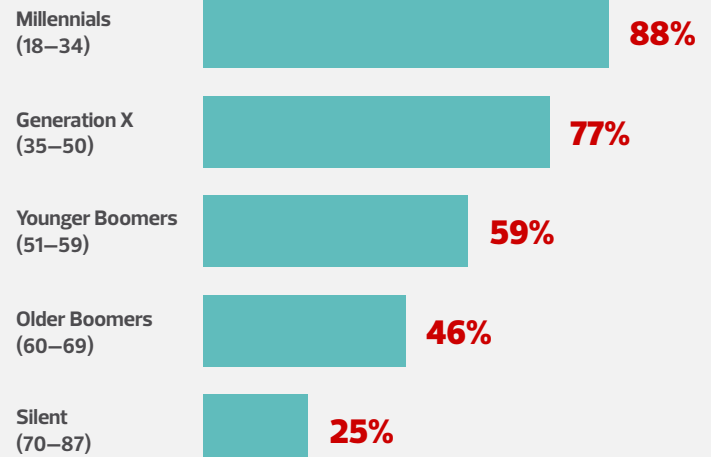
· Automatic light and water shut offs
· Digital reminders
· Routine health monitoring via sensors
· Wearables to keep residents active, with fitness, medical and nutrition data all tracked and integrated with an EHR, which in turn gives family members and health care providers real-time access to information
· Instant connections between a caregiver's device and beacon within the apartment to record visits, with sensors recording each touchpoint throughout the visit

Other possible 21st century senior living community elements include:

· **Virtual reality**: This is certain to be a hot trend in senior living in the coming years, and more providers are turning to such technology as a means of engaging residents, triggering memories, providing training and even fostering

Lifespace Communities resident Jay Cawley leads a class
PHOTO COURTESY OF LIFESPACE COMMUNITIES

understanding of different ailments.

- **Keyless entry**: Similar to the latest technology in the automotive world, providers are looking at ways that key fobs can permit access to residents' rooms. It holds the potential to revolutionize the resident experience, and can even be combined with wearables.
- **Digital signs**: Say goodbye to paper newsletters and whiteboard menus. Digital signs incorporated throughout a community prove a streamlined, effective means of distributing news and information.
- **Tablets**: Tablets and other mobile devices can be loaded with residents' favorite apps, and configured for an improved resident experience.
- **Video conferencing**: More and more, providers are turning to video chats not only to connect their residents, but also to establish relationships among staff members at different communities.

No matter what, the name of the game with each and every element is integration.

"No one company can keep up with the level of integration necessary in any industry," PinPoint's Turner says. "We'd rather go with a product from a small company that can integrate with others than a large company trying to be all things to all people. Do they have a reputation for playing well in the sandbox with others?"

Incorporating Technology for Residents and Staff

THE APPLICATION: INCORPORATING TECHNOLOGY FOR RESIDENTS AND STAFF

When implementing technology and the various elements that make up the 21st century senior living community, it doesn't do the community any good to bring them in for just any reason, says Laurie Orlov, founder of Aging in Place Technology Watch, a consultancy firm for technology for older adults. That's why it's important to fully understand how products work, where they would benefit residents and the company, and processes to accommodate them.

Front Porch's Olson agrees that there always has to be a need. Providers should listen closely to the people they serve, determine the solutions that could meet their concerns or desires and sort through the growing set of technology available to pinpoint what's truly right for the organization and who they serve.

From there, it's necessary to embrace the direction the company is heading and plan accordingly, Olson says. This means allocating budget, time and resources.

"It's important to understand that this is ongoing," she says. "Once you're on the journey, you will keep going."

But it goes beyond residents in communities now. Providers need to pay attention to technology in other industries and future customers as well.

From voice-assisted technology, to remote monitoring and digital signage, providers are investing in creative approaches to solving some of senior living's most pressing concerns and meeting emerging trends head on.

> From voice-assisted technology, to remote monitoring and digital signage, providers are **investing in creative approaches** to solving some of senior living's most pressing concerns and meeting emerging trends head on.

1 Wellness and Health Care

Senior living providers focus heavily on wellness and health care, especially as resident acuity rises and health concerns remain a main factor that compels people to move into seniors housing.

That's the case for Tucson, Arizona–based Watermark Retirement Communities, which is why the company is looking at wearables and sensors to be more on the preventative side of resident care rather than the reactive side. Watermark, an operator with 40 communities in 20 states, is heavily involved in research right now to locate products that boast an integrative platform that can build a comprehensive profile of all different areas of wellness—physical, spiritual, social and more—to establish a measurement of overall well being, according to Watermark President/CEO David Barnes.

Des Moines, Iowa–based Lifespace Communities, which has 12 continuing care retirement communities (CCRCs) in seven states, is positioning itself to take technology to the next level in 2017 with a 21st century approach. With an aim to pilot new technologies, Lifespace Communities wants to bring in cutting–edge products that add value to residents' lives through technology–connected apartments, medication management and more.

Lifespace is in good company: Implementation of medication monitoring technology increased 5% to almost 45% in 2016 among the 2016 LeadingAge/Ziegler 150.

Technology that promotes continued health and brain fitness is crucial for future research and innovation. And because technology will continue to be critical in facilitating and enhancing transitions of care, systems that can connect multiple players—such as physicians, referring hospitals, and rehabilitation facilities—will be increasingly vital.

"When residents can graphically see themselves getting stronger—measurements you can see—it actually improves quality of life for seniors," Turner says.

COMPANY HIGHLIGHT
Friendship Village of South Hills

Friendship Village of South Hills, a Lifespace Communities CCRC in Upper St. Clair, Pennsylvania, was awarded the state's Behavioral Health and Aging Coalition grant for a new program dubbed the Dementia Live Experience. Friendship Village plans to install two virtual–reality rooms that will allow visitors to experience what life is like for people with Alzheimer's disease. These will be open to the all team members, residents from any level of living and outside community members in an effort to build empathy and understanding for those who suffer from the disease, says Sarah Hamm, vice president of successful aging and health services with Lifespace Communities.

COMPANY HIGHLIGHT
PinPoint Senior Living

PinPoint Senior Living residents have chips that allow them entry into their rooms and also logs them into exercise equipment, which knows who they are and can track their workouts. The fitness programs have led to improvements of overall physical strength by an average of 286% amongst active participants, according to data mined from the machines.

Keyless entry for PinPoint/LifeWell Senior Living residents; PinPoint/LifeWell Senior Living workout equipment monitors resident success   **PHOTOS COURTESY OF PINPOINT SENIOR LIVING/LIFEWELL SENIOR LIVING**

This focus is mirrored by a 3% year-over-year increase of the adoption of physical exercise and rehabilitation technologies to 63% among the 2016 LeadingAge/Ziegler 150 not-for-profit providers.

PinPoint's operating company, LifeWell also announced it is developing and deploying a wearables program for all upcoming communities, and will integrate the program into existing communities, alongside technology company CarePredict. The wearables, called Tempo, employ machine-learning algorithms and smart location technology will combine everything that Fitbit does—such as activity and sleep monitoring—with resident monitoring for daily activities like toileting, hydration and socialization. With geofencing capabilities, Tempo allows staff to locate residents in the community, and workers can also intervene prior to acute episodes.

"We look at it as, what's trending in my community?" Turner says. "Are residents' quality of life improving or declining?"

Nearly half of seniors believe wearables increase their motivation to live healthfully, at 45%, according to a CDW Healthcare white paper titled "Technology Innovations in Senior Care." And they have the potential to help caregivers identify potential issues among residents, which could save them thousands of dollars in the long run, as the average cost of treatment when a senior falls and requires hospitalization is $30,000.

Meanwhile, EHRs, which serve as a means of streamlining care and managing residents, reached an 80% adoption rate across the 2016 LeadingAge/Ziegler 150, a survey of the largest nonprofit systems providing senior living in the United States. Telehealth and telemonitoring also jumped in adoption among these providers, to about 21% and 19%, respectively.

Care coordination is yet another powerful tool, as it brings the right people together to support one another in living well, Front Porch's Olson says. Care management and coordination technology was adopted by 55% of the largest nonprofit

providers, according to the 2016 LeadingAge/Ziegler 150.

And in the health care sector, one of the biggest opportunities is to go beyond data collection to data mining for decision support. That's the impetus behind remote monitoring software and devices, which allows providers to collect information in an unobtrusive manner.

"This gives us early insight versus a reach when something looks different than normal—it's an extraordinary game-changer," Hopkins says.

Curo Technologies products are prime examples. The technology includes Bluetooth-type sensors, including motion sensors on a bookshelf or kitchen counter to track movement, and others placed on items like refrigerators, pill boxes or toilets to collect further behavior information. This allows those monitoring to establish a baseline for normal activities and keep an eye out for deviations, Hopkins says.

Plus, technology has allowed the industry as a whole— not just communities—to play a larger role in the health care continuum by demonstrating favorable outcomes.

> **These are not foreign concepts. Other industries have leveraged far more than senior living to this point. We'll get more sophisticated with this as we go. It's the only way we'll be able to deliver on-demand, and do it cost effectively.**
>
> **Kari Olson**
> Chief Innovation and Technology Officer for Front Porch and President of Front Porch Center for Innovation and Wellbeing

What's more, industries outside of health care have adapted to incorporate technology. Education, for example, depends upon technology to support students with disabilities and accommodate its changing user population. The same must be done in senior care.

"These are not foreign concepts," Olson says. "Other industries have leveraged far more than senior living to this point. We'll get more sophisticated with this as we go. It's the only way we'll be able to deliver on-demand, and do it cost effectively."
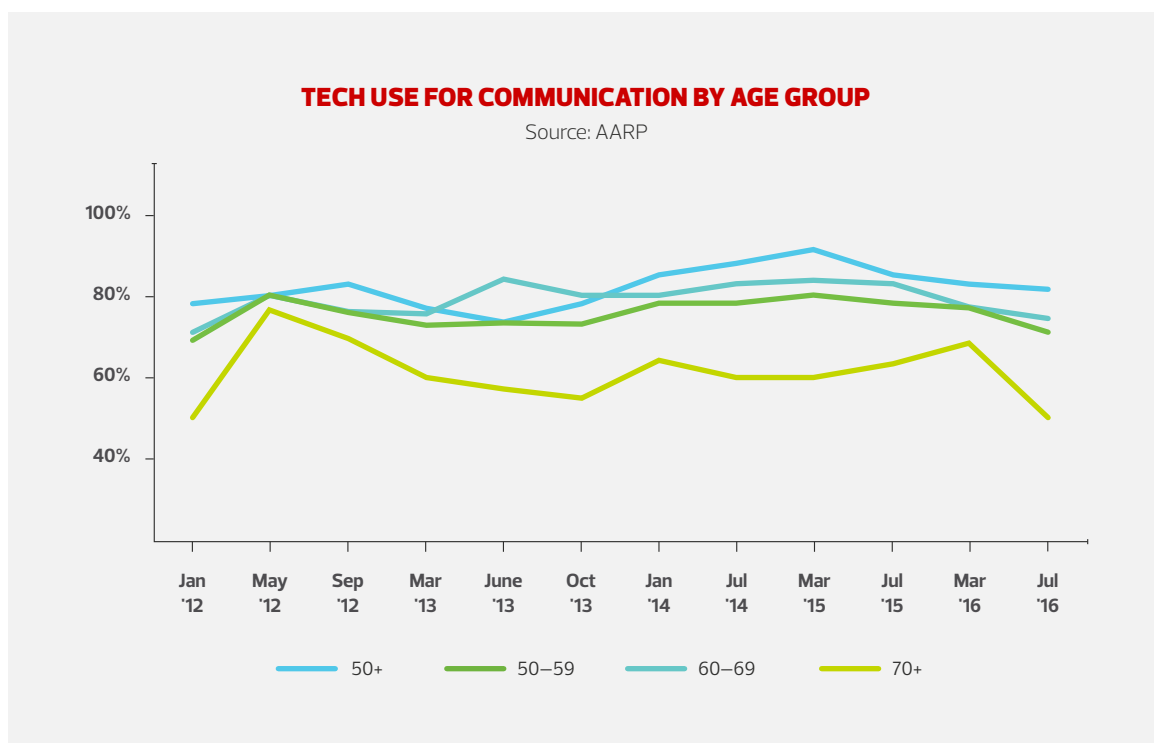
2 Resident Communication

From a care coordination perspective, digital portals help to keep families informed of their loved ones' health status and the activities available to them on a daily basis, as they can log in to quickly and easily access such information from wherever they might be. In a household with two working adults who have children and also need to keep in touch with their parents' care, integrating families is key, Link-age Connect's Viox says.

Digital frames at Tribute at Heritage Village in Gainesville, VA
PHOTOS COURTESY OF STUDIOSIX5

Further, technology stands to connect residents inside the community with family and friends outside, with one example being the use of video conferencing to involve them in their grandchildren's birthday parties or other events. In fact, 71% of adults over age 50 rely on technology to stay connected with loved ones, according to July 2016 data from AARP. Meanwhile, 51% of those over age 70 use tech to stay connected.

TECH USE FOR COMMUNICATION BY AGE GROUP
Source: AARP

Technology helps residents communicate with family, and it also helps communities stay in touch with residents. Digital screens have been installed at the majority of Lifespace Communities buildings to act as bulletin boards, including the

day's menu, upcoming events and other daily news. Residents can keep up to date on such information on their own mobile devices.

Technology companies have taken heed of the desire among residents to use technology to communicate with one another and those outside the community, as well, working to make the user experience easier to follow. For example, Samsung has developed Breezie tablets that have incorporated customizations that go beyond making icons bigger. Instead, the device is reconfigured so that seniors can simply hit a video call button and call up the correct platform for reaching a certain person, such as Skype or Google Hangouts.

"Seniors having to remember all these different apps and logins is complicated—that in itself is a barrier," says Dr. David Rhew, chief medical officer for Samsung. And one main goal with anything Samsung deploys, whether geared toward communication and connectivity or otherwise, it to remove barriers, he says.

What's more, research from Stanford University shows adults over age 80 who use information and communication technology are more apt to feel engaged and satisfied. Specifically, the seniors in the study said they use technology to connect with friends and family, and those who did so rated their mental well–being highly. And of the 445 participants between ages 80 and 93, most said they use at least one technological device daily.

"I was going into it a little bit skeptical," Tamara Sims, lead researcher on the study and a research scientist at the Stanford Center on Longevity, told Stanford News. "Part of me wondered whether the use of technology would make much of a difference for this population because pervasive stereotypes characterize this age group as technologically inept, in addition to being physically and cognitively frail."

COMPANY HIGHLIGHT
Tribute at Heritage Village

Tribute at Heritage Village in Gainesville, Virginia—Digital frames serve to communicate in a different way with memory care residents, too, according to studioSIX5's Maddalena, as a spin on the traditional memory boxes outside of residents' rooms. These serve as a cue for residents to know the room is in fact their own, typically featuring photos and knickknacks that might jog some recognition. The electronic version of this involves a tablet in a frame that's programmed with photos. It can be set up so that when a resident approaches his or her room, the tablet lights up and slowly circles through the images that have some meaning to him or her.

COMPANY HIGHLIGHT
Lifespace Communities

Lifespace Communities intends to roll out a chatting feature on its community app so that residents can easily communicate with each other. The Lifespace Foundation even issued grants to help two communities purchase 73 tablets so that residents can use the technology to its fullest potential, and the organization wants to expand these grants across all 12 of its locations in the years ahead. Additionally, Lifespace Communities introduced a new telephone system at select properties that transmits voice data through the Internet as opposed to using landlines, with a goal of upgrading all communities with this new phone technology.

A Lifespace Communities resident teaches a class
PHOTO COURTESY OF LIFESPACE COMMUNITIES

3 Safety and Security

Before all else in any community comes technology around safety and security for residents, Orlov says. There need to be systems in place that detect when residents have left the community walls, but not in a crude or obnoxious fashion. This is especially necessary in memory care settings, where devices for fall detection or wanderers can be alarming and set off an undesired pattern of behavior.

It's also important that the personal emergency response systems (PERS) come in the form of devices that residents won't remove, yet aren't intrusive, either. A secure wrist or ankle band solves the problem of removal, but it can be obnoxious for a resident to wear, Viox says.

The largest nonprofit senior living providers are increasingly implementing access control or wander management systems, according to the 2016 LeadingAge/Ziegler 150. Multi-site organizations saw such technology adoption go up to 77% in 2016. However, the adoption rate of traditional PERS

Multi-site organizations saw such technology adoption go up to **77%** in 2016.

Source: LeadingAge/Ziegler

PinPoint/LifeWell residents show off their wearables
PHOTO COURTESY OF PINPOINT SENIOR LIVING/LIFEWELL SENIOR LIVING

fell percentage points to 73%, while automatic fall detector adoption increased by 12% to a rate of 36%.

The new wearables program soon to be unveiled at PinPoint Senior Living allows workers to have a finger on the pulse of community and know where any resident is at any given time. And such wearables are well liked by seniors, as 77% report that they have the potential to be useful, according to the CDW Healthcare white paper.

Remote monitoring also serves to keep residents safe, according to Hopkins. When he was with Evangelical Homes of Michigan, Hopkins helped to launch a "CCRC without walls" concept, in which sensors placed in clients' homes collected information in the background of their day-to-day lives and alerted them to any changes in behavior that may mean clients aren't safe, so that the provider could take action.

"You don't want to have surprises with clients—surprises mean expenses," Hopkins says.

75% of nursing homes, **76% of residential care facilities** and **44% of home health facilities** provide resident access to computers, tablets and/or smartphones.

Source: CDW Healthcare

4 Entertainment

Technology is a tremendous tool in many areas of daily life and especially so in senior living settings. Of course, it contributes to entertainment, too, and residents can benefit from providers introducing platforms meant purely for their enjoyment.

Tablets, in particular, have major benefits for seniors, according to Jeh Kazimi, founder of Breezie. Those include access to social media to keep in touch with loved ones, content for leisure and learning, online shopping and games that promote mental engagement.

By the time residents "graduated" from Watermark's Engage! tablet program (see callout box), they had figured out how to video-chat with residents at The Fountains at The Carlotta in Palm Desert, California, another Watermark community.

COMPANY HIGHLIGHT

Watermark Engage! Powered by Google

Watermark rolled out this program at The Fountains at La Cholla, buying 14 residents their own Chromebooks to use as they please. Over the course of the weeks-long program, which involved workshops on topics like surfing the Internet, using apps, sending emails and video chatting through Google Hangouts, different Google representatives participated in teaching about Chromebooks and other Google tools.

The second phase of Watermark Engage! began in September 2016, when the residents who originally participated acted as additional teachers and buddies for the new students. Jack Herklotz, director of IT at Watermark, is also working on a curriculum to distribute to all Watermark communities, so that they can participate, too.

Ultimately, the goal is figuring out a way to connect communities virtually and create strong relationships, according to Watermark's Barnes. If a conversational Greek class is taking place at a community in Philadelphia, for instance, then residents elsewhere can participate via Google Hangouts. As such, it can serve as a tool beyond social connection.

"This is one area where we're taking a simple technology—Wi-Fi—and seeing what we can do with it that's powerful for our residents," Barnes says.

The company is also testing Internet-enabled smart TVs in a way that delivers diagnosis-specific or educational content to skilled nursing residents in an effort to customize their recovery experiences, and they give independent living residents access to streaming platforms like Netflix and Spotify.

Virtual reality is another area where entertainment really comes into focus. Front Porch is in the early stages of exploring

Watermark rolled out its Engage! program after buying 14 residents their own Google Chromebooks.
PHOTO COURTESY OF WATERMARK RETIREMENT COMMUNITIES

how virtual reality can be used in group settings, as well as how they can stimulate reminiscing. Through focus groups, residents in different locations all watch the same movie, and afterward have discussions, which fosters a sense of connection and engagement.

"Not only is it really cool, but it could be meaningful in terms of giving people shared experiences and opportunities to explore," Olson says. "We're working hard to figure out how we build this tool into the fabric of what we offer."

Virtual reality is the focus for Rendever Health, a startup by two MIT graduate students that revolves around developing virtual reality programs to provide entertainment in assisted living facilities. The technology was tested at senior centers, first at Landmark at Longwood in Boston, where residents took virtual trips to the Grand Canyon, discovered the solar system from within a rocketship and painted like van Gogh from his viewpoint.

"We started to notice once they were done with the demo, they would go back to their friends at their table and talk about what they experienced," Reed Hayes, one of the two who founded Rendever Health, told the Boston Globe in 2016. "It was social, it lit a spark. Can you imagine coming up with a new conversation after being there for 10 years and you haven't been out?"

Surveying residents who have tried out the technology depicted a 40% increase in stated happiness, according to CEO and co-founder Dennis Lally.

> Surveying residents who have tried out [virtual reality] technology depicted a **40%** increase in stated happiness.
>
> Source: Rendever Health

Front Porch residents try out virtual reality headsets
PHOTO COURTESY OF FRONT PORCH

Rendever Health uses Gear VR headsets from Samsung powered by virtual reality technology from Oculus, an American technology company. Millions of people used virtual reality for the first time in 2016, and Oculus has more than 700 virtual reality titles available, the company reported at the end of the year.

Additionally, Hayes and Lally have developed their own software platform for adventures like first-hand experiences with Cirque du Soleil performers or trips to Paris. In addition, the duo added 360-degree virtual reality video cameras, so that residents could partake in family events like weddings from their assisted living facilities.

Rendever Health provides the facilities with the headsets and offers subscription services. The virtual reality is now available to communities and individuals across the U.S, and costs a few thousand dollars upfront and a few hundred per month for software, updates, new content, support and insurance, Lally says.

"Technology is a broad term for different kinds of mediums that allow us to engage with the world and others in new, faster, easier and even better ways," Lally says. "Having [virtual reality] accessible for individuals living in communities provides a way to stay connected and leads to improved quality of life."

> " **Technology is a broad term for different kinds of mediums that allow us to engage with the world and others in new, faster, easier and even better ways.** "
>
> **Dennis Lally**
> CEO and Co-Founder of Rendever Health

Implementing technology for entertainment can even be as simple as purchasing a Nintendo Wii video game console, hooking it up to a TV in a common area and engaging residents in bowling or golf tournaments, Viox says. Smart TVs,

which allow for video streaming via the Internet, are yet another commonplace item in typical households that have a place in seniors housing.

"There's technology out there that's really mainstream in American homes, and we need to retrofit that to senior living, to truly enhance the lifestyle and keep residents vibrant," she says.

5 Ease for Staff

Technology is a major player when it comes to staffing and operational efficiencies.

In addition to a host of technology initiatives (see callout box, right), Watermark's Connect, the company's intranet, automatically knows who the employee logging in is and automatically connects to learning experiences, policies and procedures specific to them. Watermark Connect recently launched in a multilingual format, as well, translating the content as the company expands its reach around the globe to keep all workers connected.

Videoconferencing was installed at all Lifespace Communities properties and the company's headquarters, as well, to facilitate connections among team members.

Front Porch similarly views technology as a collaboration tool for employees, and is taking advantage of voice and video applications. Going mobile is another area Front Porch is going big on, too.

"The more we can harness mobile technologies to put information at the fingertips of our folks and allow them to work wherever they need to has certainly been a priority for Front Porch," Olson says.

PinPoint/Chartwell residents play video game bowling
**PHOTO COURTESY OF PINPOINT SENIOR LIVING/LIFEWELL SENIOR LIVING**

COMPANY HIGHLIGHT
Watermark

In addition to using Chromebooks for residents, Watermark is also releasing a platform that uses Google technology for associates across the company, allowing them to engage in dynamic workgroups. Any of Watermark's 5,000 employees can post a local or company problem, opening issues up for collaboration throughout the country. This is designed to tear down the physical walls of the communities and the geographical distance between workers to take advantage of their intelligence and know–how, Barnes says. Without technology, it wouldn't be possible.
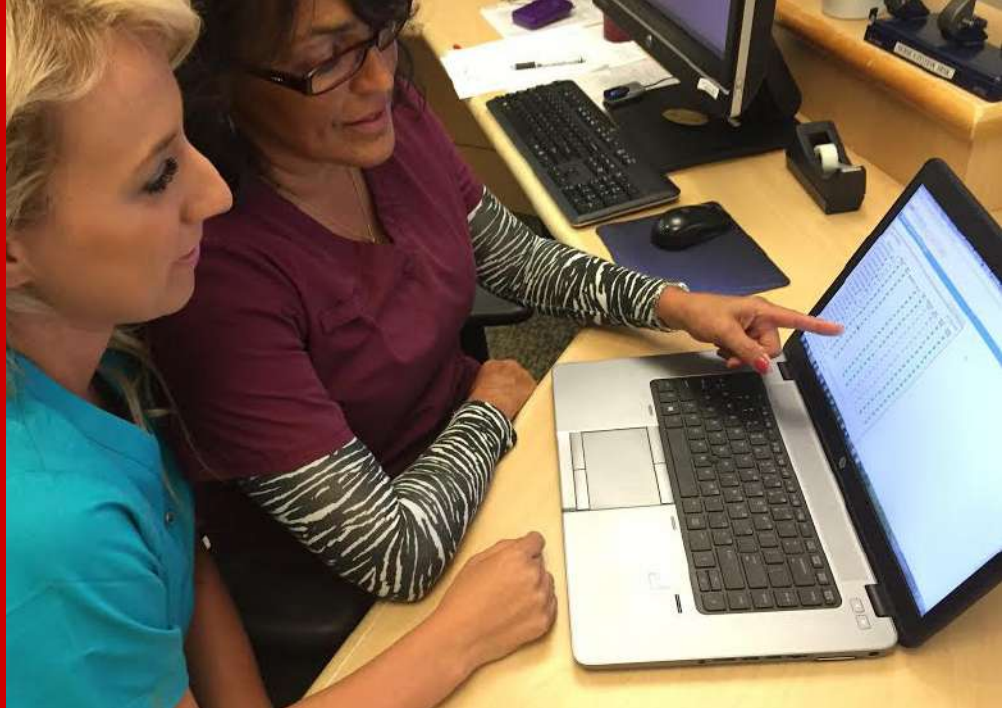
Front Porch workers use technology for day-to-day responsibilities and problem-solving
PHOTO COURTESY OF FRONT PORCH

That's why Front Porch let its sales force loose with iPads, with any resources necessary available on the device. This way, they can conduct their work at any time from anywhere, and not be stuck behind a desk.

Moving forward, Rendever Health plans to offer virtual reality community tours that the sales and marketing staff can deploy. The company is also looking at immersive educational employee training content.

And a main philosophy for PinPoint Senior Living and LifeWell Senior Living is enabling the frontline caregiver, which is why all resident care plans are tracked through mobile devices. They're set up for real-time feedback, so management can see when and how they're performing care, and can check on labor distribution in order to take action on whether to staff up or down according to demand. That's why workers will also wear LifeWell's Tempo wearable to monitor staff activity.

About 76% of the largest nonprofit senior living providers employ point of care documentation technology, according to the 2016 LeadingAge/Ziegler 150.

Data collection via remote monitoring helps caregivers make the most of their time with patients and residents, too, Curo's Hopkins says. Before entering the room, caregivers can quickly check on behavior patterns to see if anything is out of the norm.

About **76%** of the largest nonprofit senior living providers employ point of care documentation, according to the 2016 Leading Age/Ziegler 150.

"It makes interaction valuable and efficient—caregivers who walk in the door already know what's going and, and then interact about things that would be beneficial," Hopkins says.

Technology also serves as a tool to attract new workers to the senior living industry overall. Millennial workers, along with newcomers from generation Z, are used to working in digital environments, so senior living providers who deploy the necessary technology kind of a bold claim are certain to draw in job candidates.

"You can imagine that technology for recruiting is good for keeping a pipeline of possible recruits, and understand the profiles of staff members to provide them with information they would find useful or recognition specific to them," Orlov says. "How people are managed, how people are communicated to and creative ways of providing rewards are all part of management's job in order to keep people, as is figuring out new sources of talent to recruit."

Staffing management platforms are also incredibly useful in that they allow for scheduling automation and and quicker communication, Vitality's Guay says. The onboarding process can be further streamlined for efficiency, saving staff resources and giving the trainee a better experience overall.

"Technology is a real opportunity to show we're a current and modern work environment," he says.

> **Technology is a real opportunity to show we're a current and modern work environment.**
>
> **Chris Guay**
> President and CEO of Vitality Senior Living

HOW VOICE-ASSISTED TECHNOLOGY ENHANCES SENIOR CARE

One major consideration for many senior living providers is whether—and how—to utilize voice-assisted technologies such as the Amazon Echo, Google Home and Microsoft Cortana.

Some providers might view services provided by voice-activated devices as a cheap alternative to senior living, Vitality's Guay says. All of a sudden, with one tool, people can order groceries, call out for help, ask for information or request a ride—all of which cut into the business of senior living. But it can also be a great opportunity.

"It comes down to, what kind of technology are we using to feel more connected than if they had stayed at home?" Guay says.

In February, Front Porch deployed 20 to 25 devices in one community in San Diego, with some connected devices like temperature controls, and others not, in order to do a deep dive on what it's like to adopt the technology.

"Which applications make sense?" Olson says. "Where are the gaps? How well does this work in a senior living setting? Then we can leverage those results to better offer the service."

The technology currently on the market compelled Dennis Fontane to create and found LifePod, which interfaces with Amazon Echoes connected to the Alexa Voice Service. Caregivers, family members or the users themselves can pre-program routines and voice commands. This might mean reminders to take medicine, turning out the lights at night or checking in to see how seniors are doing—or if the person in question has dementia, the device can ask different questions throughout the day to track cognitive abilities. And if a senior falls, he or she can call out for help, and the device will automatically contact a loved one or emergency services.

In a senior living setting, LifePod stands to promote independence among residents, and also ease the workloads of staff, according to Fontane.

"What this will do in senior living is give the nurses and workers there the opportunity to better use their time," Fontane says. "It will inform them that Mr. Jones needs help, but Mrs. Smith doesn't, rather than trying to guess who needs help when."

Laying the Groundwork for Technology Installation
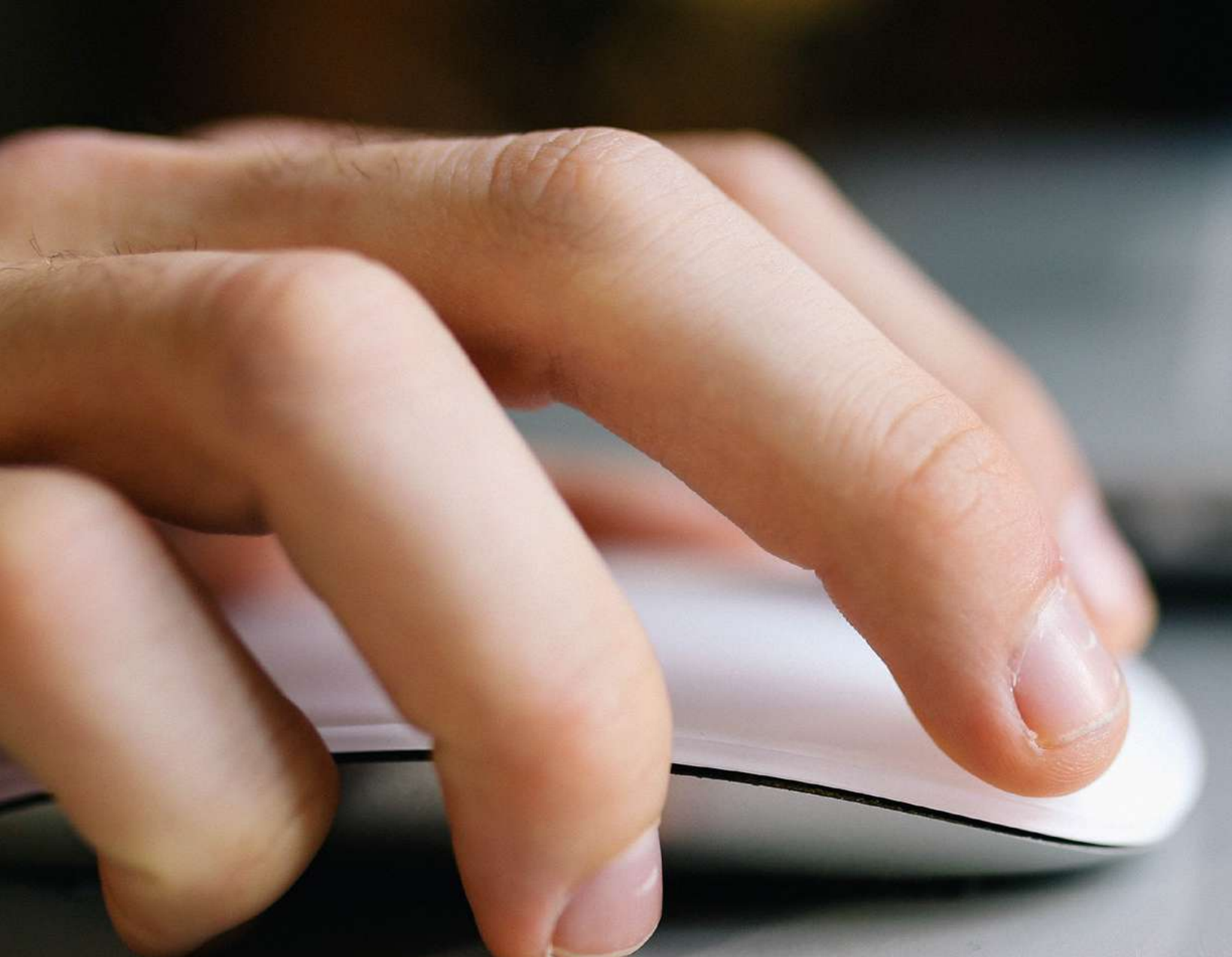
THE FOUNDATION: LAYING THE GROUNDWORK FOR TECHNOLOGY INSTALLATION

Incorporating new technology is great in theory, but without the proper infrastructure, new initiatives will surely struggle.

Generally speaking, infrastructure includes a blend of hardware, software, network and IT departments, which work together to support new technology initiatives.

In getting started with a wireless network, CDW Healthcare suggests the following steps to begin to determine a community's needs:

- **Assess current wireless coverage.** This entails looking at the specifics of any current wireless coverage—such as when it was first installed, whether residents have access, what the bandwidth of the network is and any challenges around access, speed or connectivity. It's also crucial to look at how access to the wireless network is managed, and the authentication process to access the network in general.

- **Understand wireless needs and goals.** This requires that providers think about why and how they plan to use their wireless services. It means thinking about how many people might be connected to the network, the types of devices used, any future expansion plans and compliance issues, among other items.

- **Get a wireless assessment.** Once a community assesses the current situation and evaluates wireless goals, it helps to get a wireless assessment in order to get the right wireless network up and running. This way, communities can pinpoint their ideal IT options to optimize their investments.

LeadingAge CAST's Alwan likewise recommends developing a strong strategic plan for a community's infrastructure, with room for additional technological growth in the future.

> " **You can buy all the greatest technology, but if you don't have the foundation to run those platforms, then they're not worth anything.** "
>
> **Chris Guay**
> President and CEO of Vitality
> Senior Living

Considering that the largest Internet providers are moving away from copper wiring toward fiber, new developments would be best served by going this route. Costs are decreasing for fiber, as well, and communities can get much larger bandwidth, which means more streaming capabilities.

"The carriers are putting the line in the sand," says Ty Mayberry, a CDW solution architect. "As we move forward, we're going to find more robust services less expensively than what we were doing with copper."

The bandwidth needed depends on the applications running in the community. It will also allow a simpler infrastructure design if there's a smaller bandwidth footprint, Mayberry says.

Still, if community members or staff insist on using old-time devices, there's technology that can convert back to different telephone systems, for example. Similarly, there are converters that will help new technology applications to be layered on top of older infrastructure, or ways to simplify that older infrastructure.

Wireless and wired infrastructure + Data security + Telehealth and cloud computing = $

A flexible and robust foundation will be the key to run all cloud-based software, including EHRs and resident-facing applications, and serve communities well into the future.

Source: CDW Healthcare

The challenge is especially present for older buildings, says Watermark's Herklotz, as getting them up to the 21st century standard can be more difficult. Even if a building dates back only 20 to 30 years, Herklotz says you still need to look at the wiring and watch out for potential coverage dead zones. Upgrading network equipment and placing wireless access points comes next, and all things considered, it can take anywhere from two to four months to get the infrastructure up to par.

It's also a matter of presenting the value proposition of installing infrastructure to convince partners it's a smart thing to do. It's an expensive endeavor, so showing them the vision of what could be accomplished is key, Watermark's Barnes says. Plus, incorporating the foundation results in returns on investment in the form of higher occupancy from establishing a more competitive community.

"It's us doing a good job of communicating to our partners that investing $100,000 for access points and wiring—there's value in doing that," he says. "It's not just so that people can surf the Internet."

Front Porch resident receives tech support for her device
PHOTO COURTESY OF FRONT PORCH

Indeed, a flexible and robust foundation will be the key to run all cloud-based softwares, including EHRs and resident-facing applications, and serve communities well into the future.

In brand-new developments, Watermark communities are equipped with all of the latest access points and technology for full-campus coverage.

The average access point costs $300, and a typical community with up to 100 residents across multiple floors may need between 30 and 40 of those, Mayberry says. That means wireless access points alone could cost between $9,000 and $12,000. Ideally, walls of new communities will have less metal. Otherwise, more access points will be incorporated to get around any interruptions in service.

Lifespace Communities' commitment to technology in the years ahead required that the provider upgrade infrastructure, which entailed expanding Wi-Fi usage throughout a few communities so residents can connect to the Internet in their apartments, instead of just in common areas. In addition, all communities now have improved network bandwidth to boost connectivity speed in common areas.

Because of elevated construction costs and the time it takes to develop a new senior living community, developers must

plan for the infrastructure up front, and think ahead to what will be relevant in four to five years once the project is up and running, according to studioSIX5's Maddalena.

Vitality Senior Living is committed to robust wireless platforms, which the company wants to be buildable and adaptable for the next 20 years, in new developments and even in acquisitions, Guay says. They're also building—or ripping out and rewiring—so that it's not as costly to go in and upgrade if needed down the line, to make the upfront $100,000 or so investment worthwhile.

Hardware aside, there needs to be support in place to manage devices and technology add-ons. This means providing technical troubleshooting for residents, education around viruses and assistance to update software, according to Orlov with Aging in Place Technology Watch.

Among 2016 LeadingAge/Ziegler 150 providers, one-third now have a chief information or technology officer, and this role was the second-highest new corporate position created for the year.

In order to find a cost-effective way of providing tech support for residents, Front Porch conducted a pilot program with Home Tech, a Geek Squad-style company designed for seniors. The results were tremendous at a community in Santa Barbara, California, Olson says. Residents were delighted with workshops and office hours where residents could go with any of their technology problems, and the company provided remote tech support 24 hours a day. In addition, residents could purchase personalized support services.

In any case, it's not necessarily possible to be "future proof," Guay says. Rather, it's an attempt to be "future ready," which means investing more upfront.

"You can buy all the greatest technology, but if you don't have the foundation to run those platforms, then they're not worth anything," he says.

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Among 2016 LeadingAge/ Ziegler 150 providers, **one-third now have a chief information or technology officer**, and this role was the second-highest new corporate position created for the year.

TECHNOLOGY IN THE 21ST CENTURY

Technology in the 21st century is far reaching and encompasses many purposes. Providers are consistently more innovative in their approaches, the types of technology they use and their ultimate goals.

It helps in terms of collecting data and creating actionable goals for an organization, and supports the labor shortage in the industry by optimizing workflows and assisting in recruiting tech-savvier employees.

It helps to direct residents to more services, as resident data gathered via technology allows operators to have conversations with family to justify adding new or extra services to enhance care. Residents and families can see their health outcomes, which in turn can decrease hospital readmissions, and technology makes communities safer, as well.

It also helps to position senior living more firmly in the health care continuum, as data generated through technology platforms proves senior living's role in achieving favorable outcomes, like reduced hospital readmissions and more.

Part of Lifespace Communities' two-pronged technology roadmap looks at corporate solutions and reporting tools to determine whether they'll help to successfully manage the business, says John Couture, vice president of information technology. That way, technology will make communities safer while also opening a window into how employees spend their time, and identifying challenges to speed resolutions.

"By building parallel roadmaps, for residents and team members, it's more appealing and attractive to future team members," he says.

> " **The people we serve have choices, and providers who don't implement technology will not be relevant when people are making those choices. The consumers are changing, the industry is changing and the regulations are changing. Nothing is standing still, so we can't either. We need to do our best to get out ahead of the game.** "
>
> **Kari Olson**
> Chief Innovation and Technology Officer for Front Porch and President of the Front Porch Center for Innovation and Wellbeing

TO CHARGE OR NOT TO CHARGE: HOW RESIDENTS WILL PAY FOR TECH UPGRADES

As for how residents pay for different technology add-ons, approaches vary by company. At PinPoint Senior Living, Turner believes it might be best to pass costs through the base rent to ensure adoption of different devices, rather than giving residents a clear-cut way to opt out.

Even so, the possibility of charging for the use of devices stands, but there needs to be some sort of assurance that residents will indeed fork over the cash.

"I'm mixed on that," Guay says. "For years, I've always said we'll add things and people will pay. More times than not, they didn't pay. You have to be so confident in the service provided that you know you can charge for it."

At Curo Technologies, Hopkins says he's seen many approaches, all depending on what providers' goals are.

"If it's because you need to get more efficient at serving the people we serve, it's probably a story that tech pays for itself for you," he says. "If the goal is that you want to produce a market advantage on campus, it can slide into the amenity bucket, and be presented to older adults and families as an extra charge. We also see where a company sees some value, but also partially offsets costs with a monetized price point."

However, moving forward, providers are going to have to consider what will simply be expected of them from residents as opposed to directly charging them.

"How much of this is what we should just be doing—an expectation—versus what is something we can or should charge for?" Front Porch's Olson says.

Taking a hard look at the different ways technology in the 21st century can help senior living is one thing, but it's another thing to factor in exactly what results will be, and how the technology will behave.

"The big questions for us are—is the technology scalable?" says PinPoint's Turner. "Can we implement it, adopt it quickly and deploy it rapidly? And then, can information be integrated with other systems for a more holistic view of all residents? Does it produce measurable results for how we care for our seniors?"

At the end of the day, though, it's critical that senior living providers stay on their toes and be prepared to adapt—and swiftly.

"The people we serve have choices, and providers who don't implement technology will not be relevant when people are making those choices," Front Porch's Olson says. "The consumers are changing, the industry is changing and the regulations are changing. Nothing is standing still, so we can't either. We need to do our best to get out ahead of the game."

Majd Alwan

LeadingAge Senior Vice President of Technology and Executive Director of the LeadingAge Center for Aging Services Technology (CAST)

It's long been known that technology would disrupt how the senior living industry delivers aging services, and as providers forge their paths into the future of senior care, major industry associations have made it a priority to bring tech to the forefront of the conversation.

That's where the LeadingAge Center for Aging Services Technology (CAST) comes into play, a program of industry association LeadingAge that officially formed in 2003. The center's mission revolves around raising awareness about technology solutions, along with facilitating partnerships between aging service operators and vendors and providing research about how technology can improve the aging experience.

Here, Majd Alwan, the senior vice president of technology for LeadingAge and executive director of CAST, offers his take on the 21st century senior living community—what it entails, what role technology plays and the goals associated with bringing tech solutions into the fold.

Q: What is your definition of the 21st century senior living community?

A: Technology has disrupted many industries and sectors, and senior living is not immune. Technology is a strategic investment and must be incorporated in planning and operations to meet a number of demands.

The first is the increasing trend of aging in place. Technology enables seniors to live to the best of their abilities, in terms of their functionality and health and wellness outcomes, as well as engaging them to be active members of their communities.

The second major demand involves the pressures we're seeing on reimbursement. There's pressure on providers to be connected to and coordinating with others.

The third is the importance of person-centeredness. It's taking into consideration the patient's and the patient's family's opinion, and how that may affect payment.

There's also the improvement of timeliness, accuracy and comprehensiveness of care documentation. Technology can be geared toward prevention and getting ahead of rising health issues. There is also additional health and wellness-focused technology, and none are effective unless we put them in a context of social engagement or incorporate a gamification aspect to makes these activities fun or ensure there is a social network involved to provide support.

Q: What is the most important type of technology in senior living right now?

A: None of these technologies would deliver unless you have the right foundation, the right pipes—the

information and communication infrastructure. That includes high-speed Internet. We're living in an age where mobility is taking over, and mobility is also key for engaging staff, especially since we have a significant shortage of caregivers and frontline staff.

I would recommend that the infrastructure is built and updated once and for all, to cater for the other tech applications to be layered on top of it. The only way you can do this is by looking at the strategic plan and determining what direction you're going—what you'll be specializing in and how that can be built off the infrastructure.

Q: How does technology support the labor shortage in the industry?

A: Technology is an efficiency tool. That's proven in many sectors now.

Technology helps the care professional have much more information and a comprehensive understanding of the context surrounding the individual.

The second aspect is if we really want to overcome the shortage, we have to make sure that we have the tech as an attraction. Millennials are comfortable using technology. They live and interact on these devices all day outside of work. It would be absurd that they'd be willing to come into a long-term care community and do their work without technology. I firmly believe that technology could be one key element used to attract millennials to work in the space, and ensure that we compete with other providers, as well as the acute care systems that are more technologically advanced and appealing.

Q: What are your thoughts on creating amenities packages and upgrades to rents based on technology add-ons?

A: It is an option—frankly, maybe in the short term. Can you imagine someone who is now in their 60s coming into a retirement community if they don't have access to technology that's already become part of their daily lives? My advice is to not invest in Band-Aid solutions for the short term. If embarking on an investment in upgrading, expanding or building a new community, it's worth ensuring everything is in place that will make the community attractive to future residents and future staff.

Q: What's the overall goal with implementing technology and bringing senior living communities into the 21st century?

A: It's the key to thriving and competing in the future, because future residents, care delivery models and staff are going to demand that we have these technologies.

With this shift that we've seen over the past few years, from paying for service to paying for performance, we now have to demonstrate data, quality and patient satisfaction to show our referral sources like hospitals, accountable care organizations and more that we have better quality than our competitors. Imagine what it would take to track all of these, without technology and without an EHR. And even with the EHR, imagine how much easier it would be if you had something advanced with the ability to monitor medications and clinical decision support systems.

The other piece is improving quality as a result of sharing information during transitions of care. Two people could have the same condition and background, but different treatment goals, so having that information exchange and care planning is key.

Q: What is your advice to a community on how to get a technology program started?

A: I think the only advice I have is, we need to, as parties of or stakeholders in long-term post-acute care, take advantage of technology and disrupt ourselves. Otherwise, we'll see external disruptors pulling the rug from under our feet and eating our lunch, just as Uber and Lyft did for the cab industry. That would be my only advice—act quickly before it's too late.

BRINGING SENIOR LIVING INTO THE 21ST CENTURY

Seniors have long been viewed as a population that is disinterested in or oblivious to technology, but looking at their lifespan, they've lived through a great deal of technological evolutions. Most senior living residents today were born in the 1930s and, 40s, and they've experienced quite a lot since the days of the radio, including the introduction of televisions, the first computers and more.

"They have adopted and adapted to more technology than we can fathom," Viox says. "It's now more of what do they want the technology for."

That's why senior living operators need to seriously consider what it means for their communities to truly enter the 21st century, both now and in the future. And there's no cover-all approach they can employ.

"I don't think there is a one-set formula," Watermark's Herklotz says. "In all the years I've worked for Watermark, I've realized each community is different. If you have to go over a wide spectrum of communities, keep the technology enterprise-level so that you can manage it properly but also provide a good experience."

> " **Sometimes the question around return on investment is not the right question—it becomes more binary. Are you going to win that next resident that is touring your community or are you not? Either I invest, or I don't. Either I prove how I care for my residents, or I don't. And ROI starts to go away.** "
>
> **Charles Turner**
> President of PinPoint Senior Living

Implementing technology also requires a different way of thinking, which doesn't revolve solely around what money can be made, but also around attracting residents and how to best care for them.

"Sometimes the question around return on investment is not the right question—it becomes more binary," PinPoint's Turner says. "Are you going to win that next resident that is touring your community or are you not? Either I invest, or I don't. Either I prove how I care for my residents, or I don't. And ROI starts to go away."

Creating the 21st century senior living community is imperative. The stereotypical idea of Grandma's nursing home is long gone, and today's providers must be up to the task of incorporating new technological strategies to draw in the resident of tomorrow.

EXECUTIVES INTERVIEWED

Majd Alwan
Senior Vice President of Technology and Executive Director of CAST (LeadingAge Center for Aging Services Technology)

David Barnes
President/CEO of Watermark Retirement Communities

John Couture
Vice President of Information Technology at Lifespace Communities

Dennis Fontane
Creator and Founder of LifePod

Chris Guay
President and CEO of Vitality Senior Living

Sara Hamm
Vice President of Successful Aging and Health Services at Lifespace Communities

Jack Herklotz
Director of IT at Watermark Retirement Communities

Dennis Lally
CEO and Co-Founder of Rendever Health

Dean Maddalena
President of studioSIX5

Ty Mayberry
CDW Solution Architect

Joyce Miller
Chief Information Officer at Ohio Living Corporate

Kari Olson
Chief Innovation and Technology Officer for Front Porch and President of Front Porch Center for Innovation and Wellbeing

Laurie Orlov
Founder of Aging in Place Technology Watch

Charles Turner
President of PinPoint Senior Living

Suzanne Viox
Executive Director of Link-age Connect

CONTACT

For more information, please give us a call or visit our website.

PHONE   800.500.4239

WEB   www.cdwcommunit.com

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