

# Wireless Solutions Shaping the Future of Senior Housing Communities

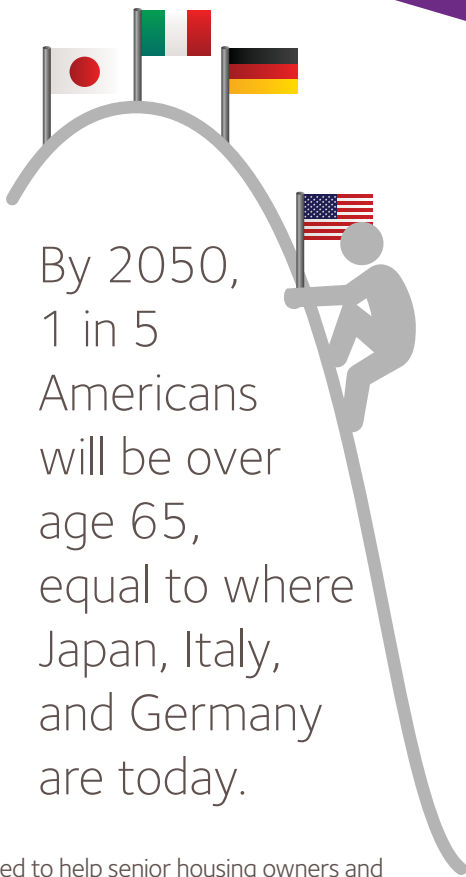
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## EXECUTIVE SUMMARY

The world's population of senior citizens is growing at a rapid pace. According to a United Nations report, there were 570 million people 65 years or older worldwide in 2013 and more than 56,000 individuals will turn age 65 or older each day until 2025. By 2050, 1 in four Chinese and 1 in 5 Americans will be 65 years or older.<sup>1</sup> This seismic demographic shift presents a huge opportunity for senior housing owners and operators as longevity continues to increase. However, industry operators will need to adjust services and facilities to attract today's more knowledgeable and educated residents. This next generation of tech-savvy residents will expect to use their smartphones, tablets, and e-readers for shopping, reading, and staying connected with their family and friends. In addition, senior housing communities will be compelled to upgrade their networks in order to support wireless-enabled solutions that improve patient care and increase efficiency such as electronic medical records (EMRs), electronic point of care, and remote monitoring.

Although senior housing communities have been slower to adopt enterprise-class wireless technology than other industries, almost all new senior construction plans include WiFi deployments. Competition for residents will increase as seniors have an expanding variety of accommodations, lifestyles, and care options from which to choose. With the growing importance of mobile devices and applications, WiFi will become a key technology for attracting and retaining residents in senior housing communities. Given limited IT budgets and resources, understanding how to deploy a cost efficient, reliable, and secure wireless network is critical. This white paper is intended to help senior housing owners and operators understand the benefits, challenges, and best practices for deploying WiFi.

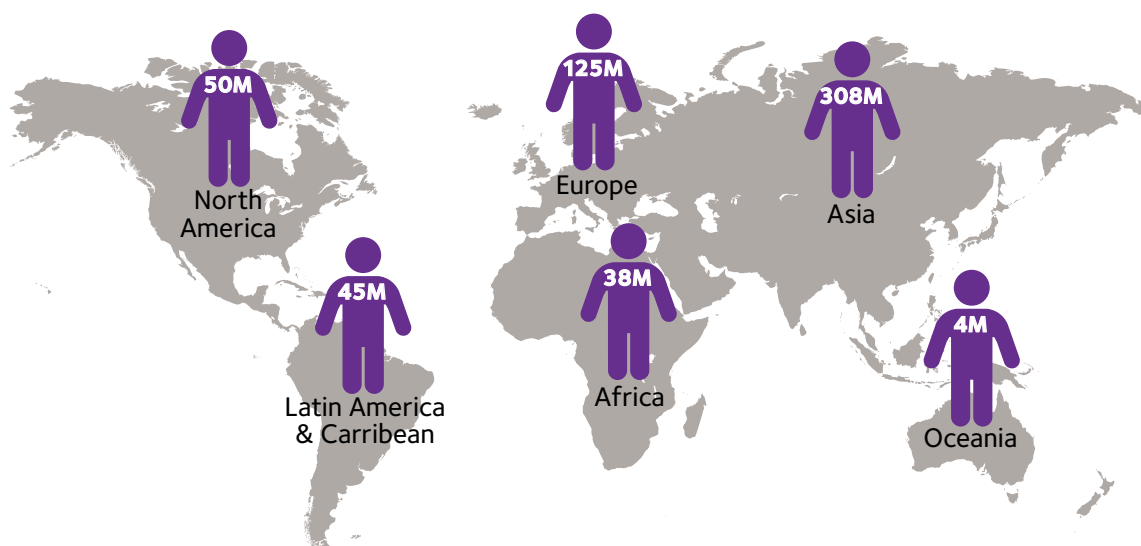


By 2050,  
1 in 5  
Americans  
will be over  
age 65,  
equal to where  
Japan, Italy,  
and Germany  
are today.

## TRENDS IMPACTING THE SENIOR HOUSING COMMUNITY

In 2047, the size of the senior citizen population will be larger than the number of children on the planet.<sup>2</sup> Due to continued advances in healthcare and medicine, life expectancy in developing countries has increased from 65 years for people born in 1950 to 78 years for those born today.<sup>3</sup> In 2013, there were 570 million people aged 65 or older and by mid-century the 85 year and older population is expected to increase to 216 million worldwide. With life expectancy continuing to increase, the burgeoning population of older adults will have to decide where and how they want to spend their remaining twenty or more years. This demographic shift presents a significant opportunity for developers, owners, and operators in the senior housing industry.<sup>4</sup>

Figure 1: Population Ages 65+ by Region



Source: United Nations

Today's older adults are looking for independent and assisted living options more than any generation before them. According to David Schless, President of the American Seniors Housing Association, up to 8% or 6 million of the baby boom generation (born between 1946 and 1964) in the U.S. will ultimately opt for senior housing. Even in China, where 20% of the 1.35 billion people are 60 years or older, cultural attitudes are moving towards spending money for senior communities as an alternative to having a younger family member leave the workforce to provide elder care. Developers in China currently forecast 5% of the senior market is a target for senior housing, which will only continue to grow with social acceptance of independent living.<sup>4</sup>

Approximately 70% of residents in senior housing communities use their personal wealth from sources such as home equity or investment portfolios to fund their entry into retirement communities.<sup>5</sup> With the Dow Jones Industrial Average reaching new highs this year and home prices up over 10% year-over-year, more retirees will be able to afford the lifestyle and care offered by senior housing communities.<sup>6</sup>

## THE GROWING IMPORTANCE OF WIFI IN SENIOR HOUSING

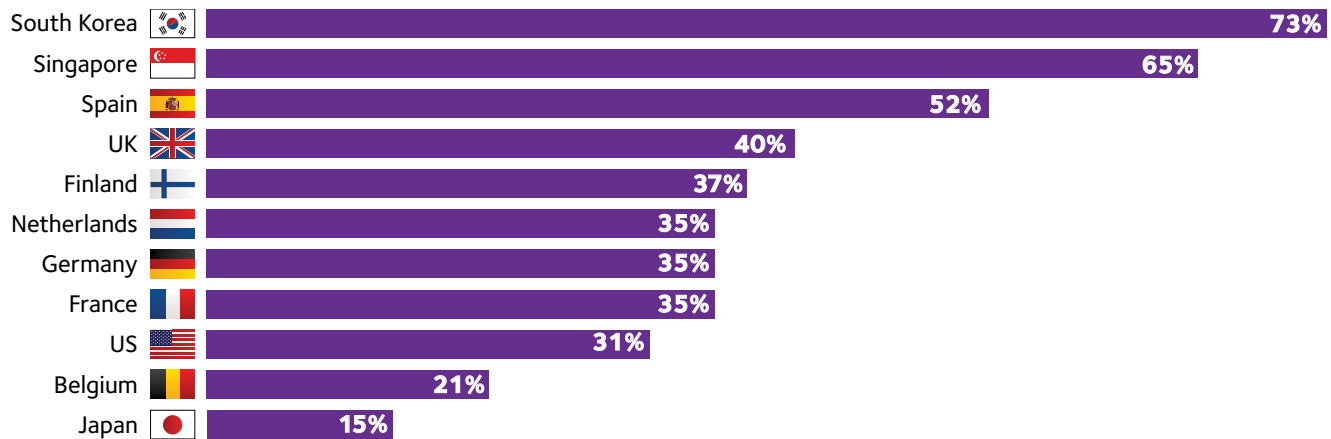
A recent analyst report indicates that the rapid increase in the world's aging population will drive senior housing construction to more than double to \$127 billion by 2023, a CAGR of 8% over the next decade.<sup>7</sup> A significant portion of this investment will be focused on technology innovations that leverage wireless networks to create better resident experiences, lower costs, and increase operational efficiencies such as:

- **Electronic Medical Records (EMRs)** – enable immediate, electronic access to an individual's health record
- **Electronic Point of Care** – mobile devices used by caregivers to collect vital signs whether the resident is in their room, a hallway, or lounge
- **Remote Monitoring** – passive monitoring of sensors helps caregivers proactively manage chronic conditions and identify health changes among residents
- **GPS Devices** – wireless tracking devices or smartphone applications alert caregivers to the location of a resident that may be lost or in need of urgent care

As senior communities are heavily dependent upon occupancy rates to ensure profitability, industry operators must appeal to older adults that are more at ease using technology than ever before. According to a recent report published by Pew Research Center, more than half of all seniors are now online and 71% of them go online every day or almost every day. Internet usage rises to 90% among seniors with a household income of \$75,000 or more or those with a college degree.<sup>8</sup>

Although smartphone adoption among older adults is still below average, worldwide usage has grown from 1 in 5 seniors to 1 in 3 seniors in just one year.<sup>9</sup> Smartphones are not only crucial for helping residents in senior housing communities to stay connected with friends and family, they can also be used for critical healthcare applications such as medication reminders.

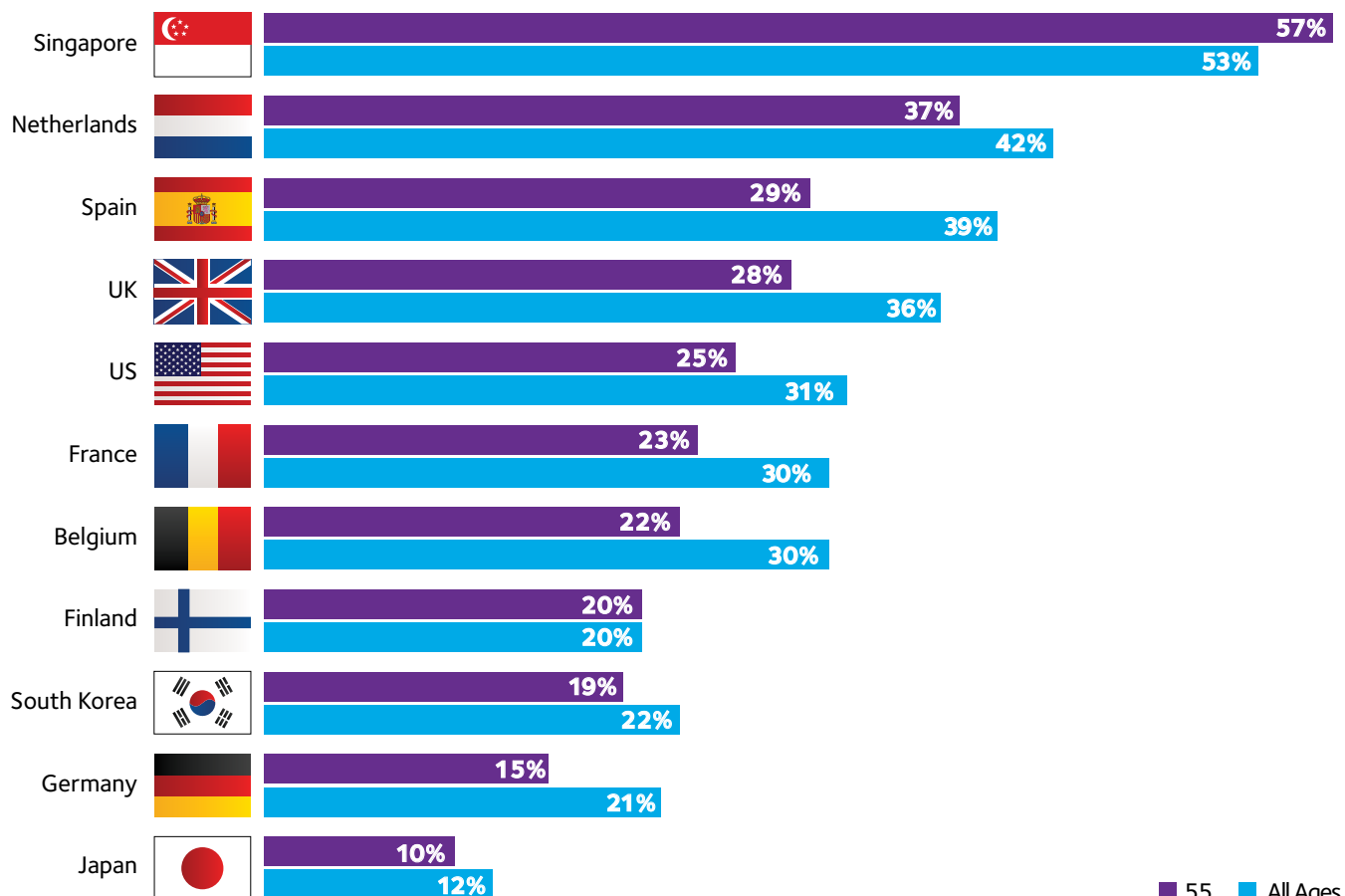
Figure 2: Smartphone Adoption Ages 55+



Source: Deloitte

Adoption of tablets and e-readers adoption among seniors is increasing faster than smartphones, most likely due to their larger form factors and easy to use touch screens. Deloitte recently reported that among seniors in most countries, tablet usage is now just slightly below average and e-reader usage is actually higher than average.<sup>10</sup> As older adults make the transition to senior housing communities, these devices will become essential vehicles for residents to stay connected with their social circles and to maintain their mental acuity through online access to photographs, news, games, and books.

Figure 3: Tablet Adoption Ages 55+



■ 55 ■ All Ages

Source: Deloitte

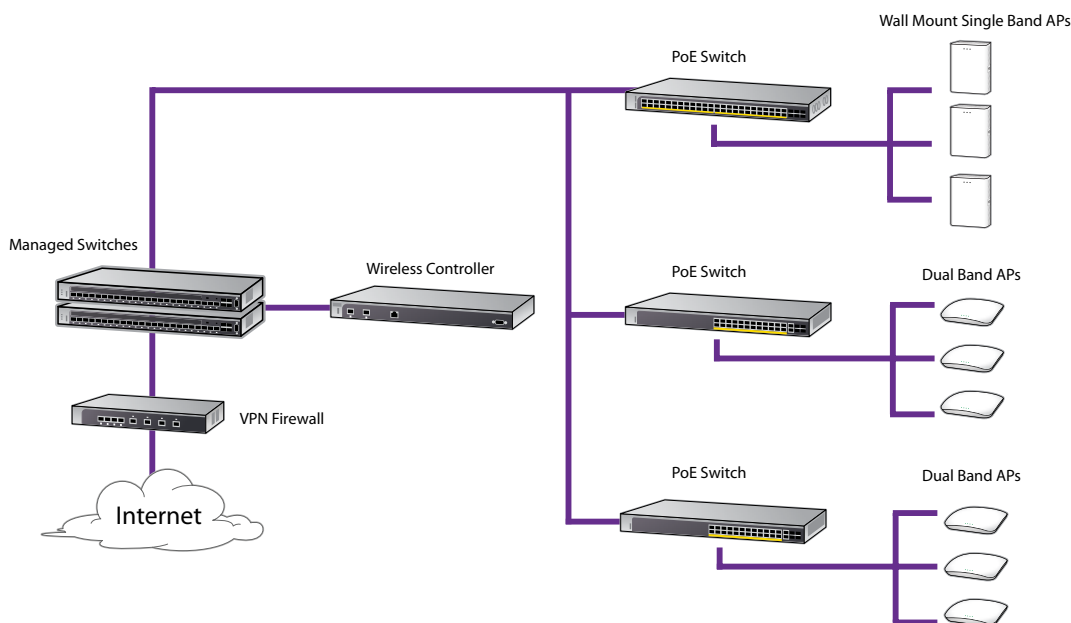
## BEST PRACTICES FOR DEPLOYING WIFI

Deploying WiFi in senior housing communities is fast becoming an imperative given the rising demand among residents for constant connectivity and a growing dependence on mobile devices and web-based solutions designed to improve the quality and operational efficiency of senior living care. Despite the growing recognition that installing enterprise-grade wireless technology is a high priority, most senior housing owners and operators struggle with constrained budgets and a lack of dedicated IT staff. While there are a myriad of options available, selecting a WiFi solution that is easy to set up/maintain, reliable, and affordable can be a major challenge.

Whether senior living communities are looking to upgrade their wireless network or are starting from scratch with new construction, there are several important factors to consider when planning a WiFi deployment such as the number, optimal placement, and type of access points (APs). As most senior housing residents don't own multiple devices or require high bandwidth for downloading content from the internet, providing breadth of wireless coverage across the property is more important than high density. For a 100-unit community, deploying 5 to 20 APs is typical but will vary based on anticipated bandwidth traffic and number of devices that can potentially be attached to the network. A wireless controller with a centralized network management system (NMS) that optimizes all AP settings is the key to ensuring maximum coverage quality throughout the property.

An onsite or remote survey should be conducted to identify and troubleshoot any forms of potential interference from existing WiFi or other sources such as walls or building materials. There are some areas where it may be impossible to deploy APs. Wall mounted access points offer a sleek design and can be installed in such areas or to provide coverage in resident rooms without any technical skills or knowledge. A survey report will include information such as recommendations for AP locations, type of APs, controller types, and signal strength heat maps. Figure 4 shows a typical wireless deployment for a senior housing community.

Figure 4: Example of Senior Housing Wireless Deployment



**WNDAP360:** dual band access point for broad area coverage

**WNAP320:** single band access point with full enterprise security features

**WN370:** wall mount access point for in-room coverage

**WC7520:** centralized wireless controller for single point of management

Residents of senior housing facilities expect to have the same high-speed wireless services they enjoyed in their own homes for personal and visitor use. However, ease of installation/configuration and total cost of ownership are critical considerations for senior housing communities that are looking to meet resident needs for connectivity and leverage WiFi-enabled solutions to improve resident care while reducing operating expenses. Below is a check list of core features and attributes designed for owners and operators to use when evaluating solutions from various wireless vendors:

- ✓ Low to medium usage capacity for hundreds of clients
- ✓ Controller for centralized management
- ✓ Wireless isolation to protect corporate assets and clients on the network
- ✓ Basic firewall
- ✓ WPA2-PSK authentication (uses a plain-English passphrase to generate unique encryption keys)
- ✓ 2 SSIDs (1 open for guests, 1 for staff and residents with basic security)
- ✓ Seamless roaming to avoid dropped connections when residents and staff move between APs
- ✓ Onsite (or remote) wireless site survey and planning services

## CONCLUSION

Favorable trends such as the increasing size of the elder adult population and improvements in the global economy will drive future growth in the senior housing community industry. No longer a novelty, WiFi-enabled living communities will be a business imperative for seniors that depend on mobile devices for social connections, health, and wellness. Senior living communities are increasingly relying on advanced technology and wireless networks to improve resident care and reduce costs via electronic medical records to document care, collect vital signs, and provide real time updates to doctors and pharmacies. The use of remote monitoring sensors or location tracking devices can help to avoid and/or delay movement to higher levels of critical care, increasing the average tenure of residents in senior housing communities.

Despite the significant lifestyle, health/wellness, and financial benefits associated with wireless networks, most senior housing communities still face significant challenges upgrading or deploying WiFi with limited access to IT staff and capital. Feature rich solutions, designed for large enterprises, are often too complex and costly. Careful consideration should be given to selecting a WiFi solution that will not only deliver the fast, reliable, and secure connectivity that residents demand and caregivers/staff need to provide best in class care, but one that is also affordable and easy to use.

## ABOUT NETGEAR

NETGEAR is a global networking company that delivers innovative products to consumers, small businesses, and service providers. Its line of ProSAFE® business-class wireless products include secure, reliable, affordable solutions specifically designed for ease of implementation and maintenance in small to mid-sized senior housing communities. Whether you are in the exploration, project definition, implementation, or expansion stage for WiFi, NETGEAR can provide guidance and advice to help design robust, secure, flexible and cost effective wireless networks through our extensive and experienced reseller network. For more information, go to [www.netgear.com](http://www.netgear.com).

## ABOUT DEBRA CHIN

Debra joined Palmer Research in 2006 as Senior Vice President. Her background includes over 15 years of experience in executive level marketing and research positions for leading consumer packaged goods and high tech companies. She holds an MBA from Columbia Business School and a BSE in Economics from the Wharton School of Business. Founded in 2001, Palmer Research delivers the information and intelligence IT decision makers and high tech companies need to better understand market dynamics and meet their business objectives. The company is located in Los Altos, CA. For more information, go to [www.palmerresearchgroup.com](http://www.palmerresearchgroup.com).

### Footnotes:

<sup>1</sup> World Population Ageing Report, United Nations Department of Economic and Social Affairs Department 2013

<sup>2</sup> Ibid

<sup>3</sup> Ibid

<sup>4</sup> "China is Getting Old Fast, And Business Couldn't Be Happier", Benjamin Shobert 2014, [www.forbes.com](http://www.forbes.com)

<sup>5</sup> Retirement Communities in the US: Market Research Report, IBISWorld July 2014

<sup>6</sup> S&P/Case-Shiller Home Price Indices, March 2014

<sup>7</sup> Future of Construction: Influence of Megatrends, Lux Research 2013

<sup>8</sup> Older Adults and Technology Use, Pew Research Center, April 2014

<sup>9</sup> The State of the Global Mobile Consumer, Deloitte 2013

<sup>10</sup> The State of the Global Mobile Consumer, Deloitte 2013

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