



In recent years, technologies such as video chat, voice control, text-to-voice and voice-to-text have rapidly grown in popularity and have made their way into the realm of consumer electronics (CE), forever changing the ways in which we interact with our devices. In today's high tech and mobile society, devices with such capabilities are beginning to appear everywhere. From our mobile phones, to our cars, to our televisions, to our computers and even into our living rooms, these technologies are shaping up to be the face of how we interact with technology in our day to day lives. What trends are we seeing with these technologies and how are consumers utilizing them? In what ways can these technologies be improved upon as they continue to develop and evolve?

Market Size

- Over 100 million people ages 50 and over currently reside in the United States. This segment represents nearly one third of the overall U.S. population.
- This age segment is projected to increase to about 135 million people by 2030 and constitute approximately 37% of the overall U.S. population (a 5% increase).
- The highest expenditures for this age segment compared to younger age groups include healthcare, personal care, and entertainment.

Source: US Census Bureau / AARP / CEA

While American adults ages 50 and over are quite similar to younger adults regarding their CE and technology usage behaviors, there are a number of distinct differences. Therefore, it is important for CE device manufacturers and retailers, along with technology developers, to consider the unique needs and desires of adults ages 50 and over because this age segment is sizable in both their numbers and spending power.

CEA recently conducted its *Eye on Emerging Technology* study covering four technologies: video chat, voice control, text-to-voice and voice-to-text. This AARP sponsored analysis brief examines the results from that study to provide insight into how the 50+ segment of the U.S. population differs from their 18-49 year old counterparts when it comes to the four technologies, with a specific focus on voice-to-text.

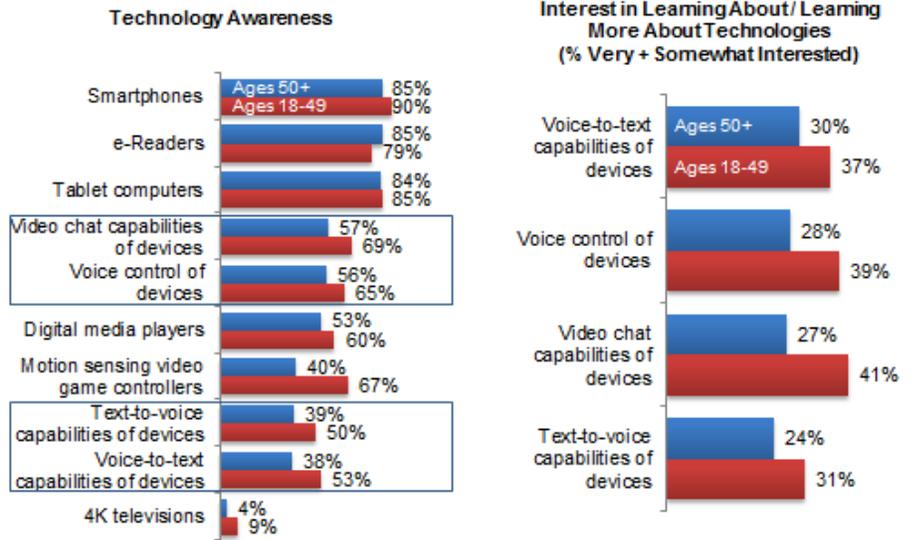
Awareness and Interest in Emerging Technology

- Awareness of video chat, voice control, text-to-voice and voice-to-text technologies often available as features on consumer electronics devices is moderate among those ages 50+ and is consistently lower than awareness among those ages 18-49.
 - Specifically looking at those ages 50+, video chat capability awareness is the highest of the four technologies with around half (57%) of older Americans aware, compared to a significantly higher 69% of Americans ages 18-49.
 - Awareness of voice control of devices closely trails with 56% of those ages 50+ aware of the capability (65% 18-49).
 - Following, four in ten (39%) older Americans are aware of text-to-voice capabilities of devices (50% 18-49).
 - Of the four technologies, awareness of voice-to-text capabilities is the lowest among the 50+ population with 38% aware, again considerably lower than that for younger Americans (53%).
- Consumers of all ages express interest in learning about or learning more about these four capabilities with highest interest shown again by younger consumers.



- Interest in learning about or learning more about the technologies is highest among older Americans for voice-to-text capabilities (30%), closely followed by voice control of devices (28%), video chat capabilities (27%) and text-to-voice capabilities (24%).

Figure 1

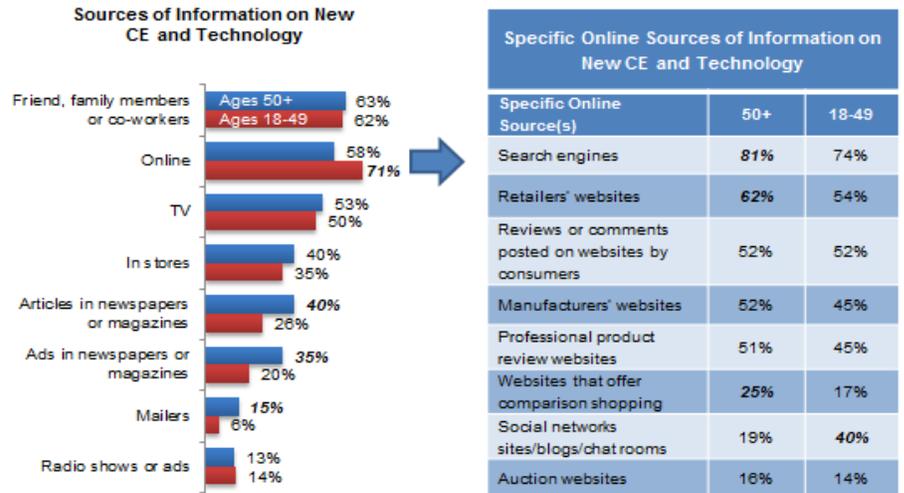


Base: Online U.S. adults (ages 50+ n=374, ages 18-49 n=665)

Q. Which of the following technologies, if any, have you seen or heard anything about in the past 12 months?

Q. How interested or uninterested are you in learning about, or learning more about, each of the following technologies?

Figure 2



Base: Online U.S. adults (ages 50+ n=374, ages 18-49 n=665)

Q. Where do you typically learn about new consumer electronics and technologies?

Base: Online U.S. adults who learn about new consumer electronics and technologies via the Internet (ages 50+ n=217, ages 18-49 n=469)

Q. You indicated typically using the Internet to learn about new consumer electronics and technologies. What types of online sources do you use?

- Among those ages 18-49, interest is greatest for video chat capabilities (41%), followed by voice control of devices (39%), voice-to-text capabilities (37%) and text-to-voice capabilities (31%), all significantly higher than interest among their 50+ counterparts.
- What sources do U.S. consumers rely upon to learn about new consumer electronics and technologies? Many turn to the Internet, friends, family members, co-workers or television.

- Older U.S. adults are significantly more likely to rely upon articles in newspapers or magazines (40%) as sources for information on new CE and technology than are those ages 18-49 (26%), as well as ads in newspapers or magazines (35% versus 20%) and mailers (15% versus 6%).

- Conversely, younger U.S. adults are significantly more likely to rely upon the Internet as a source for information on new CE and technology when compared to those ages 50+ (71% versus 58%, respectively).

- Among those who utilize the Internet in searching for information on new CE or technologies, search engines are the most popular source, regardless of age, followed by retailers' websites, reviews or comments posted on websites by consumers and manufacturers' websites.

- When looking for information on new consumer electronics, U.S. adults ages 50+ are significantly more likely to turn to search engines than are their younger counterparts (81% versus 74%, respectively), retailers' websites (62% versus 54%) and comparison shopping websites (25% versus 17%).

- On the other hand, those ages 18-49 are significantly more likely to visit social network sites, blogs or chat rooms when looking for such information than are those ages 50+ (40% versus 19%, respectively).

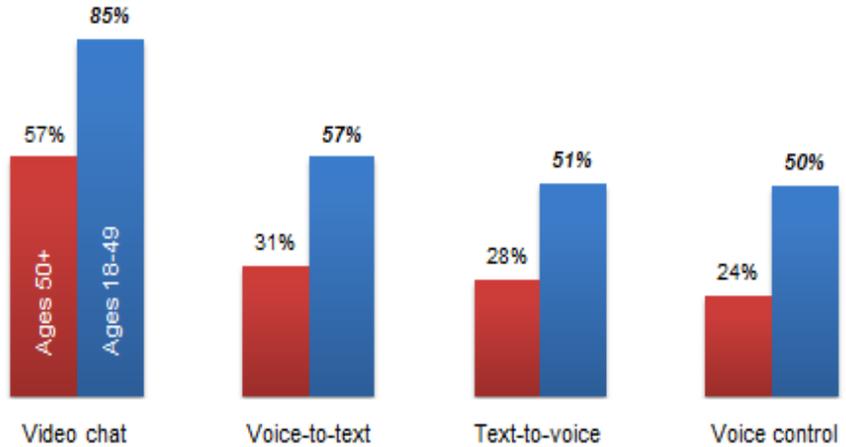


Ownership of Capable Devices

- Ownership of devices capable of the technologies included in the study (video chat, voice control, text-to-voice and voice-to-text) is significantly lower among older U.S. adults compared to younger Americans. It is noteworthy, however, that ownership is consumer-reported, meaning they may own a device that is capable, yet they could be unaware of it having such a capability.

Figure 3

Ownership of Capable Devices



Base: Online U.S. adults who own electronic devices (ages 50+ n=370, ages 18-49 n=658)
Q. Which of the devices that you own are capable of [technology]?

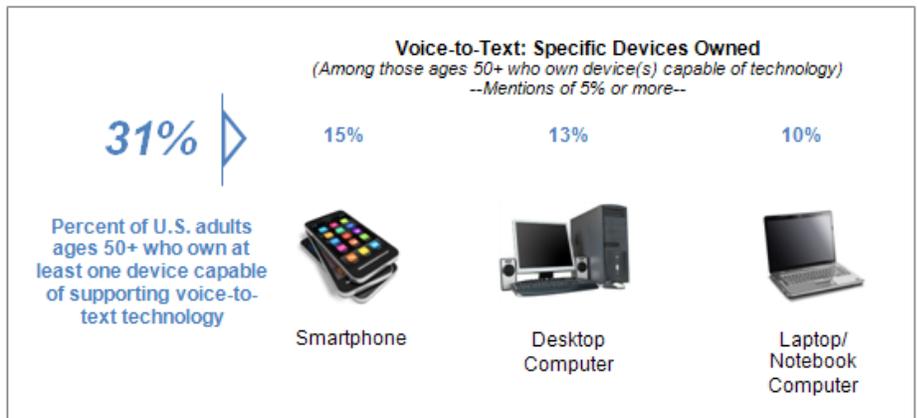
- While ownership of similar devices is significantly lower among those ages 50+, a considerable number of these consumers do own devices capable of video chat (57%), voice-to-text (31%), text-to-voice (28%) and voice control (24%).

Voice-to-Text Technology

Voice-to-text technology is more widely used by consumers ages 18-49. However, those 50+ consumers that do use the technology see great value in its ability to assist in composing text or emails and with general dictation.

- Three in ten (31%) U.S. adults over the age of 50 own at least one device capable of voice-to-text technology.
- Among them, the most common devices owned are smartphones (15%), desktop computers (13%) and laptop or notebook computers (10%).

Figure 4



Base: Online U.S. adults ages 50+ who own electronic devices (n=370)
Q. Which of the devices that you own are capable of voice-to-text or allow you to dictate speech into text?

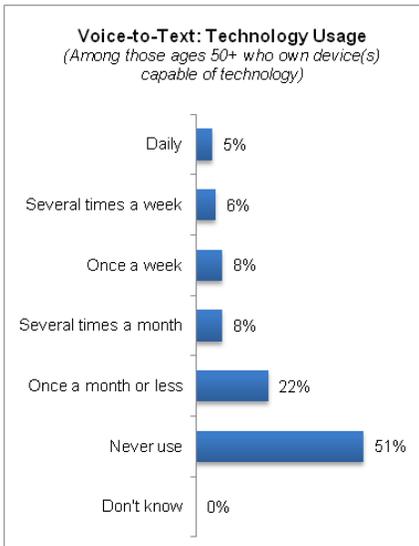
Usage

- Approximately half (49%) of 50+ voice-to-text capable device owners report they use the feature on their device(s) at least occasionally with one in ten (11%) that use the feature either daily or several times a week.
- Among those ages 50+ that are using the voice-to-text capabilities of their device(s), the majority (76%) do so while at home. Additionally, we see approximately one quarter utilizing the technology while driving or commuting (25%), while on-the-go (23%) and while at work (23%).



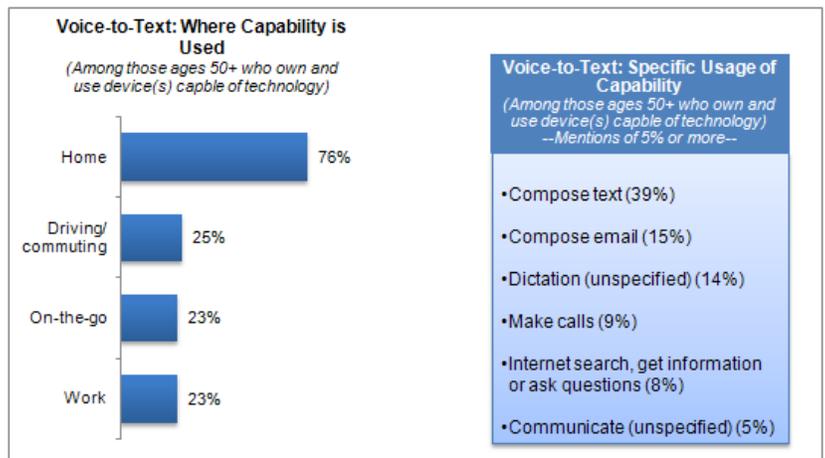
- Of particular interest, older users are significantly more likely to use the capability while at home than are their younger counterparts, who, on the other hand, are more likely to use the capability while driving/ commuting or while on-the-go.
- What are 50+ consumers using the voice-to-text capabilities of their devices to do? Composing text (39%) is the most common usage, followed by composing email (15%) and dictation (14%).
- While younger consumers are considerably more likely to use their voice-to-text capable devices for composing text and for hand-free driving purposes, consumers ages 50+ are more commonly using their devices to assist in dictation and in composing email.

Figure 5



Base: Online U.S. adults ages 50+ who own electronic devices capable of voice-to-text technology (n=111)
Q. How often do you use the voice-to-text capability of your device?

Figure 6

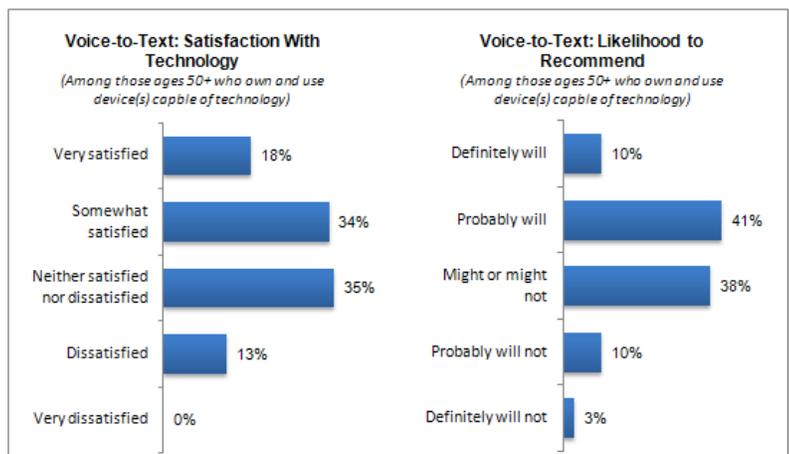


Base: Online U.S. adults ages 50+ voice-to-text capability of your device?
Q. What do you use the voice-to-text capability of your device to do?

Satisfaction and Likelihood to Recommend

- Slightly more than half (52%) of voice-to-text users ages 50+ are satisfied with the technology.
- In terms of how the voice-to-text technology can be improved in the future, the majority of users age 50+ agree that speech recognition has room for improvement (74%). Additional desired areas of improvement include reliability (40%), ease of use (24%) and speed (18%).
- When asked how likely they would be to recommend the voice-to-text technology of their device (s) to someone they know, 51% of users ages 50+ say they are likely.

Figure 7



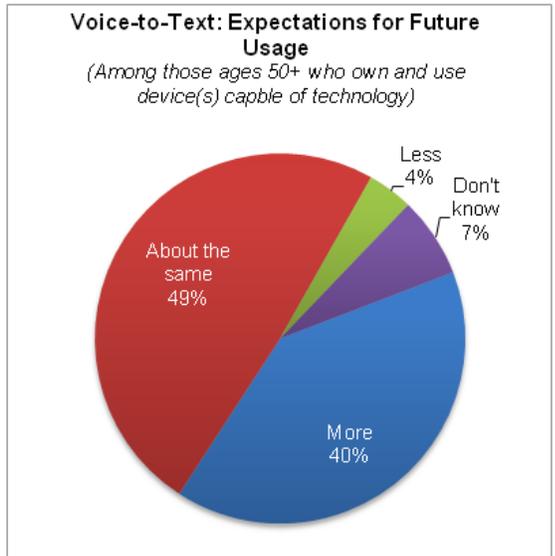
Base: Online U.S. adults ages 50+ who use the voice-to-text capability on their device(s) (n=42*)
Q. Overall, how satisfied or dissatisfied are you with using voice-to-text on your device(s)?
Q. How likely or unlikely are you to recommend the voice-to-text capability of your device to someone you



Future Usage and Adoption Trends

- Over the next 12 months, four in ten (40%) current voice-to-text users over age 50 expect to use the capability of their device(s) more often and just under half (49%) expect usage to remain the same.
- Among those over age 50 who do not currently own a device capable of voice-to-text technology, approximately one quarter (26%) express interest in future ownership, significantly lower than interest among those ages 18-49 (42%), yet still a considerable portion of the 50+ non-owning population.
- The majority of those ages 50+ who are interested in owning a device capable of voice-to-text technology would most like to have a smartphone (73%) or a laptop/notebook computer (65%). However, there are also a number of consumers ages 50+ who are interested in the technology and who would like to own a desktop (31%) or a tablet (29%) computer as a device to support the technology.
- Notably, consumers over the age of 50 who are interested in owning a capable device are significantly more interested in owning a laptop or notebook computer than are younger consumers with the same interest.

Figure 8



Base: Online U.S. adults ages 50+ who use the voice-to-text capability on their device(s) (n=48*)

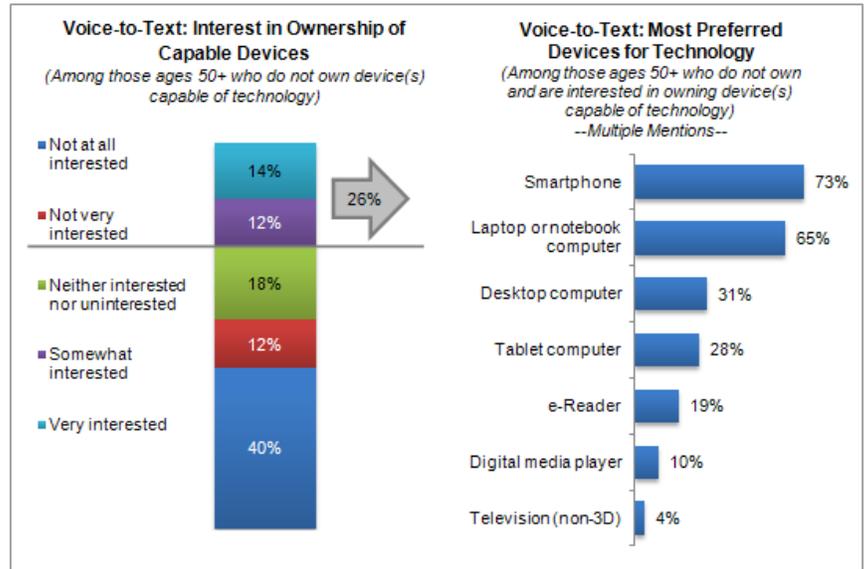
Q. Do you expect to use the voice-to-text capability of your device more, less or about the same amount 12 months from now?

Figure 9

In Summary

Awareness, Interest, and Ownership of Emerging Technology

- Awareness of video chat, voice control, text-to-voice and voice-to-text technologies often available as features on consumer electronics devices is moderate among those ages 50+ and is consistently lower than awareness among younger consumers.
 - Specifically looking at those ages 50+, video chat capability awareness (57%) is the highest of the four technologies, followed by voice control of devices (56%), text-to-voice (39%) and voice-to-text (38%) capabilities.



Base: Online U.S. adults ages 50+ who do not own devices capable of supporting voice-to-text technology (n=156)
Q. How interested would you be in having a device capable of voice-to-text?

Base: Online U.S. adults ages 50+ who do not own devices capable of supporting voice-to-text technology and are interested in owning one (n=41*)

Q. Which of these devices would you like to use for voice-to-text?

- Consumers of all ages express interest in learning about or learning more about these four capabilities with highest interest shown again by younger consumers.
 - Among the 50+ population, interest in learning about the four technologies is highest for voice-to-text capabilities (30%), but is closely followed by interest in learning more about voice control of devices (28%), video chat capabilities (27%) and text-to-voice capabilities (24%).



- Ownership of capable devices is significantly higher among younger U.S. adults across all four capabilities.
- Despite this, a considerable number of consumers over age 50 currently own devices capable of video chat (57%), voice-to-text (31%), text-to-voice (28%) and voice control (24%).

Voice-to-Text

- Three in ten (31%) U.S. adults over the age of 50 own at least one device capable of voice-to-text technology. Among them, the most common devices owned are smartphones, desktop computers and laptop or notebook computers.
- Approximately half (49%) of capable device owners over the age of 50 report they use the feature on their device(s) at least occasionally. While most are using the technology when they are at home, a sizable number are also utilizing it while driving or commuting, while on-the-go or while at work. Composing text is the most common usage, followed by composing email and general dictation.
- Slightly more than half (52%) of voice-to-text users ages 50+ are satisfied with the technology.
- In terms of how voice-to-text technology can be improved in the future, the majority of users age 50+ agree that speech recognition has room for improvement, along with reliability, ease of use and speed.
- When asked how likely they would be to recommend the voice-to-text technology of their device(s) to someone they know, 51% of users ages 50+ say they are likely.
- Nine in ten (89%) 50+ voice-to-text users expect to use the capability of their device(s) more or about the same amount over the next 12 months.
- Among those over age 50 who do not currently own a device capable of voice-to-text technology, approximately one quarter (26%) express interest in future ownership, significantly lower than interest among those ages 18-49 (42%), yet still a considerable portion of the 50+ non-owning population.

In Conclusion

Although awareness and usage of each of the four technologies – video chat, voice control, text-to-voice and voice-to-text – is considerably higher among younger U.S. adults, a sizable number of consumers over the age of 50 are taking advantage of the benefits offered by the technologies. With high satisfaction and strong likelihood to recommend among current users, coupled with considerable interest in learning about the technologies among those who are not current users, each technology is poised for strong growth within the 50+ market. Therefore, CE manufacturers and technology developers should continue to fine-tune these technologies in order to provide consumers of all ages with the best possible user experience.



CEA
Consumer Electronics Association

Spotlight on Americans 50+

Methodology

The report described herein was designed and formulated by the Consumer Electronics Association (CEA)[®]. Data from this analysis brief was sourced from CEA's *Eye on Emerging Technology* study. The quantitative study was administered via Internet web form to an online national sample of 1,039 U.S. adults between August 25 and 30, 2012. The margin of sampling error at 95% confidence for aggregate results is +/- 3.1%. For Americans 50+ the sampling error is +/- 4.8%.

CEA members can access CEA's *Eye on Emerging Technology* study reports at <http://members.CE.org>.

About CEA

The Consumer Electronics Association (CEA) is the preeminent trade association promoting growth in the \$204 billion U.S. consumer electronics industry. More than 2,000 companies enjoy the benefits of CEA membership, including legislative advocacy, market research, technical training and education, industry promotion, standards development and the fostering of business and strategic relationships. CEA also owns and produces the International CES - The Global Stage for Innovation. All profits from CES are reinvested into CEA's industry services.

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Find CEA online at www.CE.org.

About AARP

AARP is a nonprofit, nonpartisan organization with a membership that helps people age 50 and over have independence, choice and control in ways that are beneficial and affordable to them and society as a whole, ways that help people 50 and over improve their lives. Since 1958, AARP has been leading a revolution in the way people view and live life.

About AARP's Innovation@50+ initiative:

The Innovation@50+™ initiative aims to spark entrepreneurial activity across public and private sectors. Anchored by the AARP social mission – to enhance the quality of life for all as we age – the initiative enlists the expertise of visionary thinkers, entrepreneurs, the investment community, industry and not-for-profits to spur innovation to meet the needs and wants of people over 50.

On the ground, the initiative catalyzes research and helps shape a marketplace ethos by promoting core, unifying principles such as "design for all." It stimulates new business models that reflect the broad transformation in how the 50-plus life is being re-imagined. Lastly, the initiative prepares 50-plus people to communicate with, access, engage and thrive in a new "longevity economy."

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