

Technology

The Not-So-Small Small Screen

Peter DaSilva for The New York Times



Loren McKechnie, far left, shows Maria Beatrice Bocciolesi and John Calkins a 90-inch screen at Axiom Home Theater Design Center, a high-end installer in Monterey, Calif.

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Samsung Electronics thought it won the bragging rights this year as maker of the world's biggest TV, with a 102-inch **plasma** screen, but Panasonic beat it by one inch. Samsung does have the largest plasma screen in stores, a 63-inch screen.



A ceiling-mounted projection system.

As it stands now, [Sharp Electronics](#) boasts of making the biggest liquid-crystal-display TV for sale, a 65-inch Aquos. It would be the biggest TV on the market if not for Samsung's 72-inch rear-projection TV. "We have the capability to build L.C.D. TV's much larger," said Bob Scaglione, senior vice president for marketing in Sharp's consumer electronics marketing group.

The title of maker of the biggest screen will constantly change hands, but one thing is certain: TV's will keep getting larger. Market analysts at Quixel Research of Portland, Ore., say many consumers now want a screen 50 to 55 inches. It projects that by 2009 the sweet spot will have shifted to a 60-inch screen. "That suggests the consumer doesn't have a maximum size," Mr. Scaglione said. "Maybe it will happen for an 80- or 90-inch screen."

Just how big is too big for a TV screen? Such an idea is anathema among TV executives.

"Can it be too large?" asked Phil Abram, [Sony's](#) vice president for television marketing. "Only in the sense that it overwhelms the room you are in. As a TV guy, I have trouble in my heart believing that a TV can overpower a room."

You wouldn't think that size matters, especially with new homes built ever bigger. The average new home is 2,434 square feet, 62 percent larger than a home built in 1970, according to the National Association of Home Builders.

But within the walls of the big new homes, changes are occurring that affect how people will watch TV. Some trends will make it easier to fit in a screen as big as 103 inches. Others will make it trickier to find the right spot for even the sought-after 50-inch screen.

A consumer might easily have space for a big screen in a home theater or media room. About 10 percent of homes are being built with a media room, the home builders' association said — although in many cases, it is just another name for the basement, or what builders in a previous era called the rumpus room or the rec room.

Another room that is increasingly conducive for big-screen TV's is the sprawling master bedroom. The dimensions of that room in the average new home is 15 by 20 feet, said Gopal Ahluwalia, staff vice president for research for the home builders' group.

All that bodes well for big TV's. But at the same time, the kitchen has opened up into the family room. Whole rooms are disappearing. "We think that in 10 years there will be no more living room," Mr. Ahluwalia said. Interior walls where a TV might be hung are gone. So now, where does the TV go?

This problem becomes clearer when you look at the mathematics of screen size. TV manufacturers measure sets on the diagonal of the screen. A 60-inch diagonal screen is about 52 inches wide and 29 inches high. That means a room needs to have an expanse of blank wall that is almost four and a half feet wide, or wider if the TV has speakers along the side of the screen or a wide-screen format.

A second consideration is viewing distance. A viewer should sit no closer than one and a half times the diagonal of a 1080p high-definition TV, the highest resolution TV available, according to the makers of high-

definition sets. (The rule of thumb is two and a half times for TV's with lower resolution.) In the case of a 60-inch TV, that is about eight feet from the screen; otherwise you will start seeing the pixels in the picture.

Almost all new homes and most older homes have 12 feet of viewing distance for such a TV in a master bedroom or a family room. It starts getting difficult to find that room in many apartments.

Move up to a 103-incher and look what happens. You need a wall at least 90 inches wide — seven and a half feet. The TV has to be at least 13 feet away from the viewers. Some experts claim that the optimum viewing distance is about twice that. Now where does it go?

George McKechnie of Axiom, a high-end home theater installer in Monterey, Calif., put in a \$24,000 Runco 3-chip DLP front projector for one customer that splashes a 100-inch or larger image on a movie screen in the room. "It's marvelous if you are sitting 16 feet away," said Mr. McKechnie, who founded the business with his son, Loren. "At 12 feet, you can see the pixels." In short, "you need a pretty big room." About 80 percent of his business is installing 50-inch TV's, and about 5 percent is for 61-inchers, he said.

John Revie, vice president for sales and marketing for visual displays at Samsung Electronics, is not worried that size will ever matter. "There is no reason why it can't get any bigger," Mr. Revie said. "It comes down to what the consumer wants and what they are willing to pay. As long as it is in reach financially, they will get the largest set possible."

Mr. McKechnie, a former clinical psychologist, is not so sure. "It's not driven by the consumer," he said. "The technology is so complex that it is driven by the perception of what the consumer wants."

Mr. Abram of Sony said the company's designers were starting to take note of size. For instance, the company's new 46-inch-diagonal rear-projection TV is only an inch wider than its 42-inch-diagonal plasma TV because the speakers are moved from the side to below the screen.

On some of its Bravia models, Sony gives owners the option of swapping the silver bezel around the screen for one that is red, white, blue, black or brown to help minimize the appearance of the TV in the room.

For rooms with controlled lighting, the front projectors may end up being the answer for many people. Front-projection TV's were the fastest-growing category last year, with a 55 percent increase in sales, according to Quixel. The units are portable — some are the size of a thick paperback book — and a screen could be pulled down from the ceiling when needed.

Robert Stephens, head of [Best Buy's](#) Geek Squad, said he had seen the future in college dormitories and fraternities. Students project movies and video games onto a large wall with special reflective paint. "If you want to see what's going to happen, watch the kids in college," Mr. Stephens said.

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