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Satellite technology keeps consumers connected

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Satellites often are associated with radio and television, but the multimillion-dollar spacecraft control many aspects of everyday consumer life.

From transmitting broadcast signals to supporting Internet and telephone connections to helping guide airplanes and local traffic via global positioning systems, satellites support them all.

And the industry plans to do even more business directly with consumers.

"Though they may not always realize it, consumers use satellites when they swipe a credit card at a gas station, withdraw cash from an ATM or watch television," Federal Communications Commission Chairman Kevin Martin said at a Satellite Industry Association dinner during a conference this month.

"It's that critical link that nobody thinks about," said David Cavossa, executive director of the association.

Consumers with satellite dishes get their TV directly from satellites, but cable TV content also is transmitted up to a satellite and then back down to providers like Comcast and Cox that relay it into consumers' homes.

If a satellite carrying TV programming were to fail, millions of people would lose TV service in their homes. That scenario has yet to occur, but in 1998 a satellite carrying pager traffic went down and half the devices in the U.S. went down with it, Mr. Cavossa said.

"People know about cellular, wire line and wireless networks, but not satellites ... until everybody has one of those 'ah-hah' moments again," he said. "It's the invisible infrastructure."

In addition to TV and radio, satellites are used for everything from global positioning devices to aircraft landing systems, said Ali Atia, president of Orbital Sciences Corp.'s satellite unit.

Internet connectivity may start on a land-based server but usually passes through satellite circuits, as do about 30 percent of international phone calls, he said.

Orbital has a satellite control room and a 120,000-square-foot facility in Sterling, Va., dedicated to building the spacecraft, which cost about \$70 million to make and another \$60 million to launch.

Manufacturing satellites, launching them, servicing them and controlling them add up to a \$100 billion



industry. About 90 percent of the industry's revenue comes from satellites transmitting voice, video and data services for everything from DirecTV to corporate networks, Mr. Cavossa said. About 300 satellites carry those services; another 150 satellites handle telephone calls, he added.

The satellite industry has been slow to offer services directly to consumers, instead working business to business because its applications remain expensive and difficult to use, and even its bills are confusing, said Mike Antonovich, executive vice president for global sales and marketing at PanAmSat Corp.

But that could be changing.

Companies such as WildBlue Communications Inc. are selling Internet services via satellite in an attempt to compete with land-based providers.

The satellite industry is watching how the Colorado company and others perform in direct competition with telephone and cable companies because the satellite system is expensive to maintain, said D.C. Palter, a satellite industry expert and president of Apposite Technologies Inc., a network-testing company in Los Angeles.

PanAmSat, based in Wilton, Conn., transmits nearly 2,000 TV channels worldwide via 24 satellites. The company wants to move to an on-demand business model in which customers can pay for guaranteed bandwidth or use the capacity as it becomes available, Mr. Antonovich said. That will get the satellite business acting more like the cell phone business.

"People shouldn't be thinking so much about their network," Mr. Antonovich said during the Satellite 2006 conference in Washington earlier this month.

Oil, mining, broadcasting and telemedicine are just a few markets in which satellite providers can enhance their business by "getting end users directly involved," he said.

That includes the government and first responders. Events like the September 11 attacks and Hurricane Katrina generate a massive amount of traffic on cellular and landline systems that quickly become overwhelmed, but the "invisible infrastructure" continues to function.

"Satellite works when everything else doesn't," Mr. Cavossa said.

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