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BUILDERS, REAL ESTATE DEVELOPERS AND FIBER-TO-THE-HOME

DSI NATIONWIDE

Virtually every large developer of single-family homes, condos and rental properties has an active program to add FTTH to new properties. Most are working on retrofitting old properties as well. So what do these major players know that smaller developers may not realize? FTTH adds about \$5,000 to the price of a home.

Nevertheless, some smaller developers were on the sidelines until recently, but now that's changing. By mid-2006 it was clear that FTTH was economically viable in developments with as few as 100 single-family homes. As fiber costs have come down and copper costs have increased, the break-even point has sunk lower and lower. It now costs about \$800 to pass a home with fiber.

QUESTIONS REAL ESTATE DEVELOPERS ASK ABOUT FTTH

Q: My architects, contractors, technicians and building managers are used to coax. At the point in construction that the coax should be installed, I call the guys up and they come and lay wiring. FTTH is new to them. I need to hire an engineering firm to design the installation, don't I?

A: Most FTTH systems up to now have been engineer-designed. But the balance appears to be tipping toward less formal design regimes thanks to increasing

standardization during 2006 along with the growth of distributor-supplied design help and an expanding corps of qualified technicians. There were more than 150 colleges with courses for fiber technician by the end of 2006. Overall, the various FTTH technologies differ only in detail, with one or another offering advantages in specific situations.

Q: What about other labor on my site? I hear that fiber is fragile and can be damaged before walls and trenches are closed.

A: Fiber vendors have evolved many ways to protect the thin fibers from harm. Contractors can route cheap "microduct"—hollow plastic tubes—through walls before they're closed in sheetrock or other material. The microducts are easily repairable. After everything else is done, thin fiber can be blown through the microduct for hundreds of feet.

Q: How about building codes? The stuff seems inert.

A: Yes, all the regular fire and life safety issues apply. For instance, just as copper with PVC insulation would be considered a life-safety hazard because of the combustion products produced when it burns, so would various plastics used in fiber that is meant for outside installation. Indoors, look for LSZH cables (Low Smoke Zero Halogen). Microduct should be labeled Halogen-Free Flame Retardant.

Q: I'm building new single-family and residential MDU structures, and we're using FTTH. Where should we install the users' network connections, assuming there is no specific building code or guidance document covering that?

A: You should expect users to want broadband connections in virtually any room in the house—bedrooms, offices, dens and the kitchen. Internet connections accommodate telephones, TV's, computers and unforeseen technology. Also consider home security, monitors for fire, smoke and household utilities. Down the road, things like a telemedicine connection to the refrigerator and alarm in the bathroom.

Q: In a single-family home, I frequently see the ONT box hung on the outside wall. Is that the only way?

A: No. In harsh climates, for instance— where heat or heavy snow could affect the outside installation—you may mount the ONT indoors.

Q: I hear that ONT's require a backup battery, why is that? When the power goes out, after all, the phone usually keeps working.

A: Optical fiber cannot conduct electricity. Thus, to keep the network connection running at times electricity has been cut, you need a battery at the user premises. There are many standard designs for in-wall between-stud boxes that hold the battery, ONT and fiber connections.

Q: Is lightning a problem with fiber?

A: No, not at all. Fiber is non-conductive and unaffected by lightning.

DSI Technologies on Forbes.
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The Fundamentals of Fiber
to the Home (FTTH)

Bandwidth: The Inevitable

Growth of Demand

3 Reasons to go with fiber

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