

By Steve Setzer

# Insatiable Demand Drives Growth In One of Few Bright Markets

## Hospitals and health-care organizations fuel next big push

**A**mid a landscape of diminished opportunity in most domestic U.S. market sectors, the telecommunications infrastructure market stands out as one of the bright spots for new construction, according to analysts and top constructors in the sector. The outlook is for strong continuous growth coming out of the recession driven by an insatiable demand for more back-end computing power and Internet bandwidth.

The majority of the focus within the telecommunications sector is on building data centers, the power-hungry, industrial-strength warehouse buildings with sophisticated MEP systems that house racks of servers and network switching gear. While the sector was impacted by the economic meltdown last year, with its share of project cancellations and lingering funding problems, it is poised to recover quickly and continue strong for the foreseeable future, say contractors and industry analysts, who paint a picture of a dynamic, rapidly evolving construction market with high growth potential.

Think of it as the equivalent of building out the Interstate Highway System in the 1950s, except there is no end point. The demand for “bigger pipes” to handle everything from millions of Youtube videos to millions of cell phone calls to moving terabytes of business data across the globe is still in its infancy.

“Construction of new data centers has slowed in 2009, but demand has remained strong,” says Mark Thompson, national mission critical group leader for San Jose, Calif.-based DPR Construction. “Data centers that require developer or bank financing have slowed or stopped their projects, while owners who are financing their own facilities are moving forward.”

Rick Morgan, senior vice president and director of mission critical facilities for Holder Construction Co., Atlanta, agrees. The slowdown has been “across the board” for all sizes of data centers, says Morgan. Holder has seen five projects stopped since fall 2008 that were already in the construction phase. “But we still see a steady market going forward,” Thompson says.

Competition for top-tier data centers is generally limited to the firms listed on the ENR Top 20 telecommunications list. It is a relatively small club of contractors that work nationally with business units dedicated to serving the unique needs of the sector. Owners tend to be sophisticated and demanding. Some regional contractors are in the market based on existing relationships with a corporate owner, for example, or a local hospital system that needs a new data center. But in general, the barriers to entry are high, and it is a national-level playing field. Peak

performance on the part of contractors is a given, and owners are continuously pressing for improvements in performance.

### Evolving Owner Demands

Owners have become even more demanding in the post-recession environment. The key drivers are improving the energy efficiency of their data centers and improving the effectiveness of their capital expenditures, sources agree.

Owners are “very selective” in picking their contractors, says Holder’s Morgan. “It’s not just your corporate experience. They want to know the specific individual you’re proposing on site and whether they have the right experience.” He adds that competition for projects has intensified. Before the recession there might be four to five contenders. Now he sees 10 or more on an average procurement.

Because these projects are so expensive—in the range of \$1,200 to \$1,500 per sq ft—owners are “spending more time analyzing the design. Then they want it built as quickly as possible,” says Ben Kaplan, vice president of Hawthorne, N.Y.-based Turner Logistics. “It’s a very innovative climate in terms of process and product.” Turner is working on several initiatives to streamline procurement and delivery of these project types, he says.

Owners such as Digital Realty Trust, a large developer of leased space data centers, are “really strong in managing the vendor supply chain,” says DPR’s Thompson. “They tend to use the same firms over and over and it becomes more of a manufacturing mindset than a one-off delivery.”

As a result, DRT and other owners are “pushing us to a higher level” in terms of process,” he says. “They want a more integrated approach.” DPR has completed more than 22 facilities for DRT, including a Leadership in Energy and Environmental Design (LEED) Platinum-certified, 24,000-sq-ft facility in Comstock, Calif.

In another twist, computer hardware suppliers are attempting to assume a larger role in the overall delivery process. “The big hardware guys are selling to owners directly as a sort of integrated vendor,” says Thompson, citing IBM and Hewlett Packard as examples. “You’re hearing more about pairings and partnerships between the hardware guys and contractors. They’re pushing a soup-to-nuts approach around the hardware.” As a result, “It’s hard to tell who you are partnering with and who you’re competing with,” he says. The lines are getting blurred.”

This trend represents both a threat and an opportunity. “The construction product is becoming more integrated with the hardware,” Thompson says. “Clients are demanding it.” This is not a problem for construction firms that can adjust and add value through expertise in building information modeling (BIM), he says. But it also raises the bar higher for new firms attempting to enter into the market.

### Sizing the market

The size of the data-center market is relatively small compared to other market sectors, currently in the range of \$8 billion to \$10 billion per year, estimates Stephen Worn, CTO and managing director for North America of San Francisco-based research firm DatacenterDynamics.

Larger mega data centers and network operations centers are generally considered to be 50,000 sq ft in size and above, with power requirements of more than 10 MW. Prior to the recession, there were on average 10 to 12 these new colossal data centers under construction in the U.S., says Worn. Now he expects there will be an average of four to five mega data centers starting construction in the next 18 months.

These mega projects make up only a small segment of the market, however, says Dan Golding, vice president and research director with Tier1 Research, Bethesda, Md. “These were the ones that grabbed the headlines [such as centers built in recent years by Google or Microsoft], but they are in a class by them-

selves,” he says.

The vast majority of the market consists of smaller data centers, commissioned by corporate or institutional owners for their own use. These are generally under 10,000 sq ft, says Worn. Prior to the global recession, there were “a couple of \$20-billion years” in U.S. data-center construction, he says. The market will recover and expand gradually over time but the recession has changed the landscape in several ways, he says.

“Gone are the days of building 200,000 sq ft of white space and waiting for the network folks to populate it,” says DPR’s Thompson. Clients are looking to match their capital deployment with the ramp-up of their actual need.

## “We see health-care data-center demand doubling over the next two to four years.”

— STEPHEN SPINAZOLLA, PRINCIPAL, RTKL

One key trend is a modular approach that incorporates 5,000-sq-ft to 50,000-sq-ft “pods” into larger building shells and ties them to existing electrical-mechanical infrastructure without interrupting existing operations.

Another emerging growth area is developer-built data centers that house the operations of a number of corporate or institutional firms leasing space.

### Poised to Surge

Another major growth area within telecommunications will be data centers and infrastructure for hospital and health-care organizations. “We’re predicting an explosion in health-care related data centers,” says Stephen Spinazolla, vice president with design firm RTKL, Baltimore. “It’s going to be overwhelming.”

He says the \$19.2 billion allocated by the federal government to help the health-care industry transition to electronic medical records is just a fraction of the spending needed to meet new requirements. That funding does not include the infrastructure for handling the increased data demands. Further, EMR is only a small percentage of the data loads hospitals and insurers will require, says Spinazolla. “We see health-care data-center demand doubling over the next two to four years,” he says.

“Larger health-care providers are ahead on this, but there are so many smaller regional hospitals that require the infrastructure to implement electronic medical records that we believe this will be a large growth sector,” says DPR’s Thompson.

DataCenter Dynamics’ Worn agrees, but questions where the funding will come from. “Health care is the next Holy Grail; it’s huge,” he says. “But the funding is just not there.” Health-care systems are already strapped for cash, and funding for data centers can be a difficult process, he says. ■

THE TOP 25 IN TELECOMMUNICATIONS		
RANK*	FIRM	\$ MIL.
1	Holder Construction Co.	857.0
2	The Turner Corp.	816.3
3	Structure Tone	391.6
4	DPR Construction Inc.	315.3
5	Skanska USA Inc.	301.4
6	Bechtel	283.0
7	The Whiting-Turner Contracting Co.	162.0
8	Gilbane Building Co.	118.6
9	Mortenson Construction	96.5
10	Roebbelen	86.8
11	Ryan Cos. US Inc.	80.4
12	Michels Corp.	76.7
13	SH Group Inc.	65.6
14	Key Construction Inc.	60.0
15	J. Fletcher Creamer & Son Inc.	59.2
16	Nabholz Construction Corp.	57.0
17	Conti Communications Inc.	56.8
18	Tetra Tech Inc.	56.0
19	Fluor Corp.	51.8
20	The Cianbro Cos.	47.9
21	Hensel Phelps Construction Co.	41.9
22	Shook National Corp.	39.5
23	SpawGlass Holding LP	31.0
24	IHC Construction Cos. LLC	29.0
25	Holt Construction Corp.	25.7

\*BASED ON 2008 CONTRACTING REVENUE FROM PETROLEUM AS REPORTED IN ENR'S SURVEY OF LEADING CONTRACTORS AND DESIGN FIRMS.