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New wiring

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ANYONE who has ever hired a builder knows that even the simplest job tends to be plagued by cost overruns and delays. And the bigger the project, the bigger the problems: according to one estimate, inefficiencies, mistakes and delays account for \$200 billion of the \$650 billion spent on construction in America every year.

It is easy to see why. A building project, whether it is a hotel or a cement plant, involves dozens of businesses—architects, engineers, material suppliers—working together for month or years. Each project entails thousands of transactions, all of them currently recorded on paper. A typical \$100m building project generates 150,000 separate documents: technical drawings, legal contracts, purchase orders, requests for information and schedules. Project managers build warehouses just to store them. Federal Express reputedly garnered \$500m last year just shipping blueprints across America.

Worse, construction is a slow affair, regularly held up by building regulations, stropy unions and bad weather. Owners, architects and engineers must physically visit sites. With everything still done by fax or telephone, requests for the size of a roof tile can take weeks and seemingly minor changes can lead to long delays as bits of paper wind through approval processes. Even then, mistakes are common. Wrong supplies arrive and bills go unpaid. Given onerous shipping costs and the high value of commercial contracts, mistakes matter. Building is one of the world's most litigious industries.

Help is at hand. A group of new business-to-business companies plan to turn all construction into an efficient virtual process. Daryl Magana, chief executive of Bidcom, says his company creates a separate website for every building project for clients including the city of San Francisco, The Gap and General Electric. Everyone involved from the architect to the carpenters can then have access to this site to check blueprints and orders, change specifications and agree delivery dates. Moreover, everything from due dates to material specifications is permanently recorded.

Clients love this approach. Harlan Kelly, city engineer at the city of San Francisco, says Bidcom has cut project time by six months: "We can do things quicker, faster and better and there are fewer arguments about whether information has reached people." Charlie Kuffner, Northern California business manager for Swinerton & Walberg Builders, a large contractor, says that using Bidcom has reduced by two-thirds the time needed to deal with requests for information. Such endorsements have helped the group to attract some blue-chip investors. On January 11th Bidcom raised \$46m from, among others, GE Capital, Oracle and Internet Capital Group, a venture-capitalist group which owns 25% of the stock and is likely to push for an early public offering.

BuildNet—which focuses on residential rather than commercial construction and raised \$105m this month from investors including Kaufman and Broad, America's biggest home builder—takes a different approach. Rather than set up websites for specific projects, its software integrates the back-office systems of builders and suppliers, in the same way that modern supermarkets and their suppliers are linked. While there is some loss of flexibility—a new supplier cannot quickly be brought into a project—efficiencies are potentially huge as materials are delivered just in time and automatically, cutting out human error and cost in the ordering process.

Both of these companies aim to be much broader than mere software providers. They are turning themselves into fully fledged business-to-business Internet hubs that start by amassing content (news, prices, gossip, job opportunities) tailored to their industry, to draw buyers and sellers to their sites. Once enough are online to create liquidity, the hub turns into a marketplace, cutting out traditional middlemen and

taking a commission from the transactions it hosts.

The scale economies are potentially enormous. Mohanbir Sawhney, professor of e-commerce at Kellogg School of Management and Steven Kaplan, at the University of Chicago Business School, argue in a recent article that the value created by business-to-business hubs, where every buyer and seller can potentially link with every other, vastly exceeds that of business-to-consumer models where there are lots of buyers, but just one seller. The fragmented construction industry needs such a marketplace. Unless people start living in virtual buildings, there will always be plenty of bricks and mortar to trade.

Business

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