

World Wide Web Development

Sticker Shock

By Joe Mullich

Many eager users have learned the hard way that, as with client/server systems, creating a presence on the Web is no quick way to save money.

An executive at Compex, a legal documents firm in El Segundo, CA, had seen a magazine article that said a company could get a World Wide Web site up and running for as little as \$50. Taking a client to lunch could cost more than that. So the executive told Jason Ray, vice president of operations and information systems, to get Compex onto the Web pronto. Ray paused a moment, then began reciting all the additional costs that would come with a Web site, like updating and maintenance, until the executive finally told him to stop. His head throbbing with dollar signs, he told Ray to forget the whole thing.

This case is far from unique. Amid the hype over the Internet, companies

are being caught off guard by the hidden costs of Web development. IDC/Link, a subsidiary of International Data Corp. based in New York City, conducted interviews with Webmasters from 20 companies that sell products over the Internet as either a core business or an extension of their core business. IDC found that their development costs ran up to four times more than expected, often because companies underestimated the number of people and equipment required to mount a Web site.

Recent surveys are pegging the expense of Web development to be much higher than the costs reported in the past. Companies and vendors don't want competitors or future clients to know that Web site costs are so much higher than they expect. IDC also found that many companies fudge their numbers by counting some expenses against overall corporate costs, rather than tying them to the Web budget.

What's more, Forrester Research of Cambridge, MA, predicts that over the next two years, Internet development costs will rise by 52 percent to 231 percent. Increasing staff costs, new Web security and interactive technologies, and rising consumer expectations are among the factors that will drive costs up.

What does it really cost to develop a Web site? The answer can be a tangled Web indeed.

Too Busy to Think

The cost of a Web site ranges widely because the purposes of a site can vary so dramatically. If you merely want a static page to give out marketing material, you can develop a Web site for \$5,000 to \$10,000. For a site that provides sophisticated transaction capabilities, the cost could rise to millions of dollars. In between the high and low ends are hundreds of decision points, all adding or subtracting costs. "You have to decide how much you will differentiate yourself from competitors," says John Celestian, CEO of Internet Media Service, a Web design and consulting firm in Palo Alto, CA. "It's one thing to have a Web site. It's another to have a unique Web site that blazes a new trail. Those bring very different lines of costs."

The first step in determining Web costs is to ask specific questions about what you hope to accomplish. Doing so you may unearth surprise factors that otherwise would not surface until the imple-

mentation. What goals are you trying to achieve with the site? What material needs to be on the site and what doesn't? These seem like obvious questions, but Web development is often too frenzied to permit this kind of deliberation.

"People have an extreme sense of wanting to get the Web site done quickly, as much from a preemptive competitive position as anything else," says Pamela Kostka, director of product marketing for Connect, Inc., a maker of online service software in Mountain View, CA. "The pace of innovation is fast, and product launches coming out every day are hard to assimilate. Normal business cycles are shortened by a factor of seven or 10 when dealing with the Web."

Internet commerce sites, especially, are "crash programs" and companies "do not have time to think about cost while they rush to build the site," according to IDC. The rush to have hardware and software delivered overnight can add many thousands of dollars to a project's cost. While executives say the compressed time lines make one year in the Internet business like seven in a normal business, IDC comments that those "executives seem undisturbed by spending in one year resources that could last as long as seven."

IDC found that the technology procurement process for Internet projects tends to be "nontraditional, unplanned and haphazard." Only two of the 20 companies interviewed by IDC used a formal request for proposal process. "The implementation process is really a discovery process," says Kostka. "These are the people who see wide swings in what they thought the cost would be versus what it actually was."

Rockwell Automation, a major industrial automation supplier based in Mayfield Heights, OH, avoided this frenzied approach, opting for the kind of deliberateness successful Web implementation requires. In November 1994, members of Rockwell's IS department wanted to put up a site containing basic company information like the annual report. That site could easily have been built for \$10,000. But when IS broached the idea, Steve Gokorsch, Rockwell marketing manager, didn't see the point of simply plopping some material online. Gokorsch decided to survey customers and ask what they wanted to see at Rockwell's Web site. Of the 24 items the customers were asked to rank, the annual report came in dead last. What customers wanted most was hard technical data. That kind of site is much more expen-

sive to launch and maintain, but it also meets a need. A \$10,000 site containing an annual report would have been ignored.

Consequently, Rockwell spent extra cash on redundant servers and multiple high-bandwidth data lines. According to Gokorsch, Rockwell determined that the Web site could be a key way of interfacing with customers; therefore it had to be staffed and equipped to be reliable. "If you're looking for technical documentation, the last thing you want is to click on a site and have it say the server is unavailable," says Gokorsch. "If you really want to make a customer mad, tell him he can get the specifications he wants online and then [offer] an unreliable service."

Where the Money Goes

The type of site and its importance to a firm can cause dramatic differences in price. A *promotional site*, which creates awareness or customer loyalty, is the cheapest type (its typical cost, according to Forrester, is \$304,000). A *content site*, which provides entertainment or information, is more expensive (\$1.3 million). A *transaction site*, in which the online service is used to sell goods or provide services, is the most expensive (\$3.4 million).

Of course, those numbers aren't hard and fast, but they reflect the upward trend of Web costs. According to IDC's survey of large and Internet-exclusive companies, the cost of a site in its first year runs \$840,000 to \$1,250,000, not including internal training costs and marketing or public relations costs. (For a breakdown, see the table below). The largest cost may be the unexpected one of developing custom software, which can add up to \$500,000 to \$800,000. According to IDC, 20 percent of IT purchases for a Web site

goes for hardware and off-the-shelf software, and 80 percent goes into adapting those packages for a particular site. "People think there are complete turnkey solutions, and when they see the amount of glue code that needs to be written, they're surprised," says Kostka of Connect.

In general, according to experts, the most hidden costs lie in content and service. For example, in Forrester's survey, companies spent anywhere from \$10,000 to \$1 million for the rights to outside content—a cost that could easily be overlooked in the initial estimates. The site enhancement fund and ongoing programming costs are other key areas where hidden costs can mount. "Ultimately, a site is interesting or not depending on content," says Ray Katz, copartner of i-site web design, a Web design and consulting firm in Philadelphia. "If the site contains information you care about and is well-written, it could be a significant site even if it's just black text on a gray background."

However, some companies wrongly assume they can use existing written material as is. At many sites, companies simply took a thick documentation set, ran it through an HTML converter and flung it on the Web. They are likely to spend much more than they imagined when they realize no one is going to the site and the whole thing needs reengineering.

"People have this idea a Web site is a brochure," says Katz. "Even if it's not an active site, it's not a brochure, any more than a TV commercial is a video brochure. It's a different medium that requires different kinds of material." Taking this difference into account requires forethought. For example, you have to decide what kind of material Web visi-

Typical Cost Structures in Electronic Commerce Sites	
Hardware	\$150,000-\$200,000
Software (off the shelf)	\$10,000-\$50,000
Staffing, custom development and design	\$500,000-\$800,000
Support and maintenance (for 12 months)	\$180,000-\$200,000
Total	\$840,000-\$1,250,000

IDC/Link estimates that a large percentage of first-year Web costs is found in personnel and the custom work they do.
Source: IDC/Link

tors will want, what information you want to guide them to, what length of material will people read on screen and what is easily downloadable.

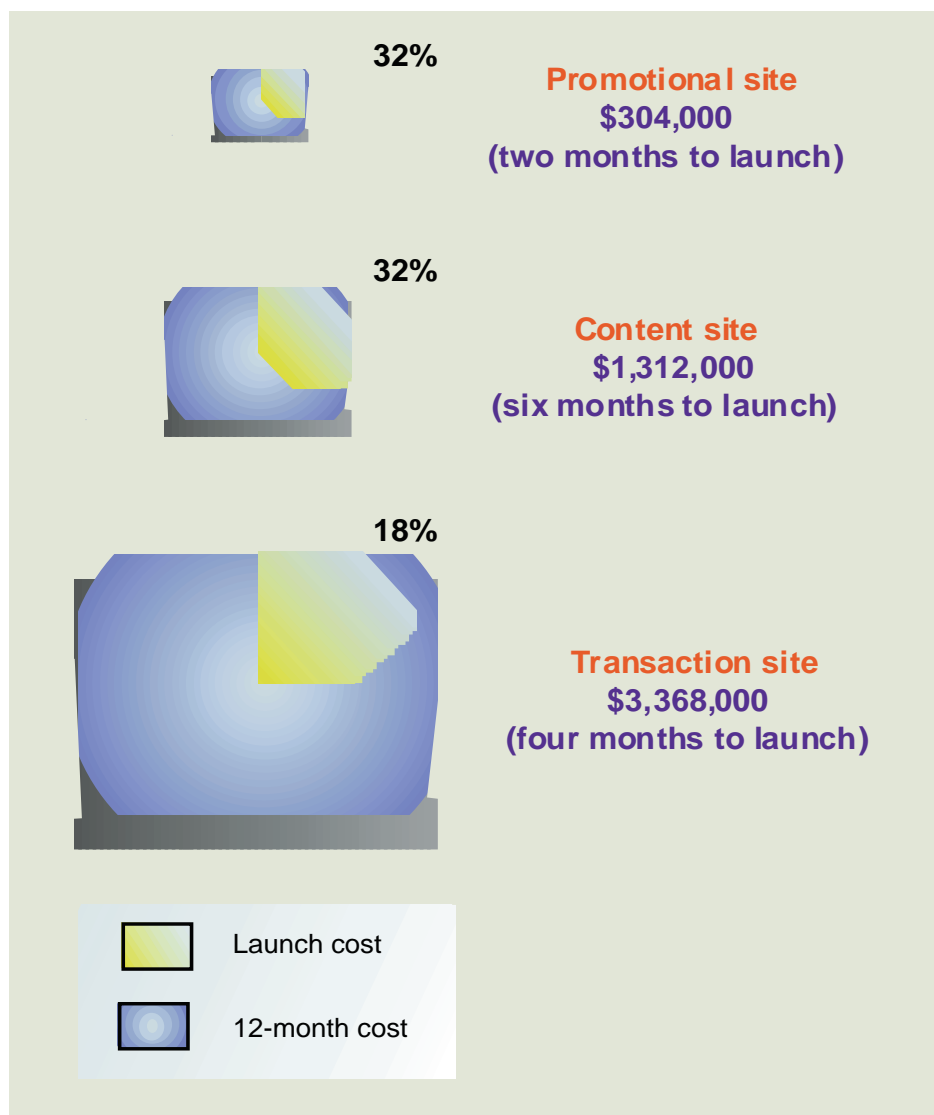
Celestian of Internet Media Services says his clients are not fazed by the \$150 an hour his firm charges, but they are surprised by how long these projects take, often two to four months. "Anyone can do HTML [Hypertext Markup Language], but not everyone can do good HTML," he says.

Learn from the Boy Scouts

A main reason for the increased time—and therefore cost—companies discover in Web projects is their own lack of preparedness. They are ready to pay others to develop their Web site, but they are surprised by how much work they have to do as well. A Web developer can make suggestions and guide clients, but ultimately the host company is the only one that can decide on its Web site's content. If the raw material is in a standard format, such as a popular desktop application or ASCII text files, developers save time and clients save money. More often, though, material is scattered in various formats or not easily accessible. Companies must collect and log that material. "A Web site brings gigantic communications and project management overhead," says Celestian.

Similarly, the user interface through which a visitor interacts with the site plays a significant role in determining costs. For instance, would you like a site where the visitor sets the graphics preference—high, low or none? That means two or three sets of graphics must be designed for the site. "Do you want to personalize pages based on things they did on their last visit?" asks Celestian. "That type of thing adds significantly to the cost, because you're not serving the same information to everyone."

Some of these questions are answered by how the site fits into a company's overall marketing plans. For instance, Katz of i-site web design was recently commissioned to put up a site that provided auxiliary information for an advertising campaign for a specific product. Even though the site was graphically appealing, it was fairly quick and inexpensive to develop. People coming to the site were a captive audience, so Katz didn't have to spend a large amount of billable hours determining what information customers wanted and how to guide them to it.



Start-up costs can consume up to a third of the first year's total expenditure.

Source: Forrester Research

The Fudge Factor

Web development requires a bigger fudge factor, in terms of contingent funds and a flexible budget, than many other types of projects. No matter how much you set aside for unexpected developments, it probably won't be enough. In the IDC survey, for example, one company was surprised to learn it needed to offer Mandarin character sets on its Web site to attract Asian customers.

Because the Web is such a new medium, companies must learn on the go—an expensive proposition in any endeavor. "You can educate a client up front, but no matter how much you show or tell, they will change their mind [about what they want]," says Katz. This relates partly to the haphazard and frenzied way that most Web sites are orchestrated. Often one per-

son or a small group in the company will take the initiative in getting a company on the Net. As a result, the Web site is not fully integrated with the business, and changes are bound to be needed.

Even more than with most IT, everyone seems to have an opinion about the Web. For example, the CEO might later access the company's site using a different Web browser, in which case subtle changes are seen in the site's appearance. The CEO may decide the site must be redesigned to accommodate that browser. "Within the company, there are a lot of varying opinions about how a Web site should look," says Katz. "If someone makes a Web decision and six months later someone higher up decides he doesn't like it, it changes. There are usually no policies or standards for dealing with this.

"You can save money with as much forethought as possible, but it's impossible to have enough forethought to avoid serious revisions later beyond what's needed merely to keep the site fresh." Unexpected hidden costs are unearthed as you go along. Halfway through the development process, you'll figure out something you want to add to the site. Or the competition will make a change to its site, and you'll have to add that capability to your site just to keep up.

Up and Running

Many companies are surprised to learn that putting a site up may be less expensive than keeping it running. For a promotional site, 68 percent of the first year's budget goes for site maintenance and additional creative work, according to Forrester Research. "Deciding to launch a successful Web site should be viewed as an undertaking not unlike the decision to have a child," says John S. Baker, principal of Baker Consulting in San Diego, CA. "It will require daily feeding, grooming and occasionally pants-changing."

Visitors to Web sites expect the information they see to be the latest available. If you decide to put a "what's new" section on your site, for instance, you'll need to provide new content for it constantly. "The maintenance will always take more work and cost more than you anticipate," says Katz of i-site. "When you start seeing what the site can do, you will want to do more. There will always be new products and events you'll want to hype." Even "routine" maintenance can be difficult to predict since a procedure doesn't become routine until you've done it for a couple of months. In the IDC study, many managers felt their sites were too new for them to even predict long-term maintenance and upgrade costs.

Some managers also expressed surprise that after adding staff to build the site, other people with different skills are needed to maintain it. "We're not going to get the guy who wrote the map for our front page to throw away his graphic tablet and start filling out order forms," one executive told IDC.

As the Web becomes more complex, costs rise. Programmers needed to maintain and upgrade sites can earn anywhere from \$60,000 to \$200,000 a year, with those fluent in the hot Java programming language earning even more. Even the

simplest scenarios increase expenses. Phoenix Contact, a manufacturer of electronic components in Harrisburg, PA, contracts out the maintenance of its Web site, which cost about \$10,000 to launch. However, a Phoenix employee has to spend one to two days a month coordinating with product managers to determine what new information should go on the site.

According to Forrester, the Internet connection is another common source of cost surprises. Companies often outsource the hosting of their site. Hosting usually starts at \$2,000 to \$10,000 a month, depending on the amount of bandwidth a company needs. That can jump to \$25,000 to \$50,000 a month for sites that require advanced services such as call center handling and measurement analysis. A smaller hidden expense could be called the price of success. If you think you're doing a modest site and begin getting 50,000 hits a month, maintenance costs will rise.

Marketing can spring another surprise. At a minimum, a company must adapt its ads, business cards and stationery to include the universal resource locator (URL, the address of the Web site). On the high end, some companies launch elaborate contests with prizes to tempt visitors to a site.

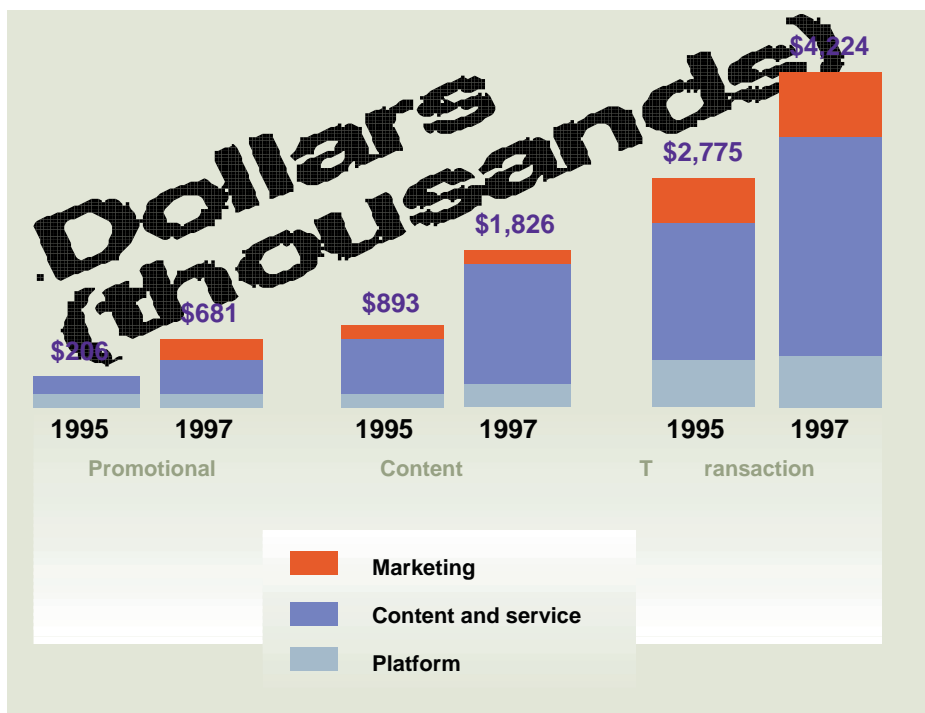
"A good rule of thumb is to treat the Web site like you would a new product or

service that your company might introduce," says Cynthia Fontayne, a public relations consultant in Santa Monica, CA. Indeed, Gokorsch, the Rockwell marketing manager, generated a launch kit for the site just as he would for a new product.

The public relations budgets for Web sites Fontayne has launched range from \$5,000 to \$25,000. The spread is tied to the site's content and audience, which determine the kind of media Fontayne needs to target. "Plan on dividing your efforts between offline and online marketing," she says. "Above all, treat the site like, say, the newest property in a hotel chain. If it is a site worth visiting, it is a site worth promoting vigorously."

Web development can be a tricky proposition, filled with all kinds of hidden costs. In such a new area, the unexpected should to some degree be expected. Firms that plan carefully and decide precisely what they want to accomplish by going on the Web will do the best job of keeping expenses under control and developing a cost-effective Web site that meets specific business objectives. **IT**

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Forrester Research predicts that, whatever type of Web site you have, it will cost twice as much in 1997. Source: Forrester Research