

Builders' Computer Use

Michael Carliner

Computers, sophisticated software, and the internet have not revolutionized home building, but these tools have continued to become increasingly common in the industry. In coming years, they are likely to play a gradually more pervasive and influential role in the management of builder firms, job-site management, acquisition of materials and labor, marketing, and dealings with government agencies.

Based on a recent NAHB survey of about 700 builders, it appears that virtually all (more than 98 percent) of the firms in the industry now have at least one computer and internet access. As recently as April 2000, about 15 percent of builders reported that they did not have internet access.

In the new survey, respondents reported an average of 8 computers, of which about three-fourths were desktops, compared to an average of 6 office employees and 9 construction employees. Nearly two-thirds had their computers linked in a local area network (LAN). About 85 percent of the computers owned by builders in the survey were less than two years old. Over 80 percent of the builders also reported having digital still cameras, and nearly as many had scanners, while 27 percent had printers for blueprints.

Although about half of the respondents reported having at least one laptop, and 44 percent had PDAs (personal digital assistants, such as Palm), the share reporting that their construction superintendents used laptops in the field was only 12 percent, although 18 percent said their superintendents used PDAs. About a

quarter of those with laptops or PDAs had wireless modems.

The most common use of computers among builders was for financial and administrative operations such as accounting and payroll, which were described as computerized by more than 75 percent of respondents (Figure 1). The only other function computerized by even half of the builders was estimating, with 56 percent. More than one-third said that they had computerized sales and marketing operations. About a quarter said they had computerized project management and purchase orders, but in most cases that did not extend to job-site management or inventory management. Larger builders generally had computerized a wider range of operations than smaller builders, but even among those building 100 units or more per year the only operations computerized by more than two-thirds of respondents were accounting, payroll, and purchase orders.

Although the 2003 survey didn't ask specifically about whether builders used computer-aided design (CAD) in their operations, the responses to questions about software and training suggested that CAD use has not grown in recent years. In 1994, of the 81 percent of builders using computers in their businesses, 27 percent used CAD systems.¹ In the 1997 NAHB *Cost of Doing Business Survey*, 34 percent of those using computers (equivalent to 32 percent of all builder respondents in that survey) reported CAD use.² In 2003, the share may have actually been lower.

Packaged Software

A number of software packages have been designed for use by builders, or have proved applicable to home building. Intuit's Quickbooks has had the greatest penetration, with roughly half of all builders using it. Quickbooks, with

Figure 1. Computerized Operations
(Percent of Respondents)

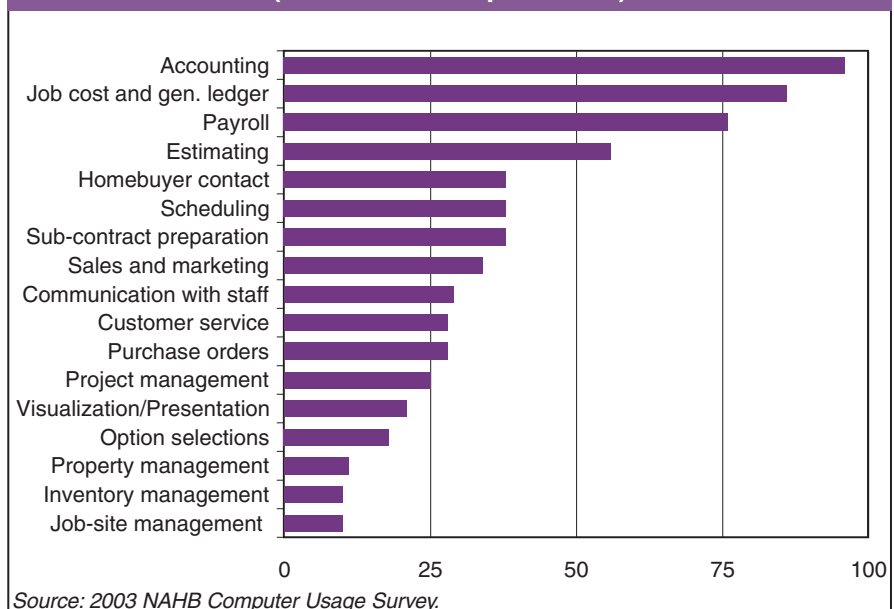


Table 1. Professional reasons for which you generally use the Internet

	Total	Number of Units Started			
		Under			
		10	10-24	25-99	100+
Find out about building materials/supplies	69	80	65	56	53
Purchase building materials/supplies	28	34	24	25	12
Purchase construction equipment/tools	17	20	15	18	4
Look for construction-related services	42	44	44	38	37
Find about government regulations	46	40	46	51	63
Obtain financial/economic data	33	29	31	38	51
E-mail	95	93	96	95	98
Industry news	55	53	55	56	65
General news	42	41	43	40	47
Download permit applications or other forms	35	29	34	46	33
Obtain educational info or resources	40	42	37	34	53

Source: 2003 NAHB Computer Usage Survey.

prices starting at only a few hundred dollars, was more popular among smaller builders than among larger ones, who have gravitated toward more elaborate, and expensive, offerings such as Timberline's, costing \$3,600 and up. Although Timberline was only used by 7 percent of all builders in the survey, its share was 32 percent among those building 100 units or more. AutoCAD was used by 12 percent of the builders, and Microsoft Project was used by 14 percent. Except for Microsoft's general-purpose Excel, the only other software product used by more than 10 percent of respondents was HomeSphere Buildsoft, although Intuit's Master Builder, TOM Systems, Softplan, Peachtree, Chief Architect, CDCI, FAST, GEAC (Construction Manager, Star Builder) and Fast Track were all used by 3 percent or more.

Internet Use

A majority of respondents had some type of broadband hookup for internet access, generally DSL or cable modem. That is a change from April 2000, when 86 percent of builders in an NAHB survey reported having only dial-up access.

Other than E-mail, the most

common use of the internet by builders was to find out about building materials or supplies, cited by 69 percent of the builders in response to a question asking for "professional reasons for which you generally use the internet." The alternatives listed on the questionnaire, and the responses among builders in different size classes, are shown in Table 1.

In contrast to earlier surveys, which found that many builders sought product information through the internet, but hardly any actually made purchases online,³ a significant portion of builders in the 2003 survey reported online purchases of building supplies or equipment. The share reporting online purchases was greater among smaller firms,

especially those involved in custom home building and remodeling, who often have to look for unusual products requested by their customers.

Few large builders reported purchases in response to the question about reasons for internet use, but when asked how often they made purchases on the internet, large builders indicated more frequent online purchases than smaller builders (Table 2). The discrepancy may indicate that large builders considered such purchases relatively unimportant, and thus not a purpose for which they "generally" used the internet. Also, it could be that their internet purchases did not include construction products, but only products such as office supplies, which were not listed among the general uses. Indeed, as Table 3 shows, builders of all sizes were more likely to buy reference materials, office supplies, and computer equipment over the internet than to purchase construction materials.

Builder Web Sites

About 63 percent of the builders in the 2003 survey reported having a company web site. As part of our regular monthly survey of builders in October 2000, 47 percent reporting having company web sites. Another NAHB survey in April 2000 only found 28 percent of

Table 2. How often do you make business purchases over the Internet?

	Total	Number of Units Started			
		Under			
		10	10-24	25-99	100+
Weekly	11	7	9	17	16
Monthly	22	23	23	18	21
More than 4 times a year	18	17	19	18	25
4 or less times a year	21	23	23	18	16
Once a year	5	6	3	4	5
Never	23	24	23	25	18

Source: 2003 NAHB Computer Usage Survey.

builders having company web sites. Although the three surveys are not entirely comparable, it appears that web sites have become more common, but still far from universal. Most builders with web sites relied on outside vendors to maintain them, although nearly half of the builders constructing 100 or more units had an employee-maintained site. About 6 percent of the builders with company web sites reported that 25 percent or more of their sales came from their web sites.

Figure 2 shows the share of builder web sites that included various types of content. Not surprisingly, the largest builders in the survey tended to have more elaborate sites, but even among those building 100 units or more per year, less than half included downloadable brochures or

Table 3. Products your company purchased over the Internet during the past year (Percent of Respondents Making Purchases)

	Total	Number of Units Started Under			
		10	10-24	25-99	100+
Construction supplies and materials	57	69	53	44	33
Home building books or periodicals	62	61	61	64	69
Office supplies	71	67	70	79	77
Computer equipment	63	56	64	73	69

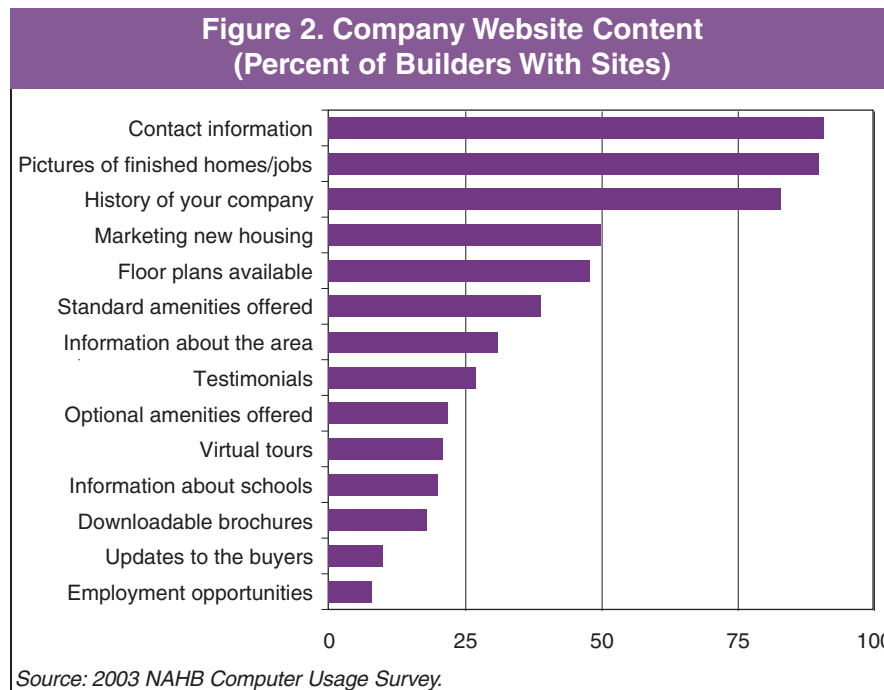
Source: 2003 NAHB Computer Usage Survey.

information about options.

A recent survey of consumers conducted by NAHB included a question about resources generally used during their search for a new home. The top three resources used were real estate agent, real estate section of a metro paper and internet. About 40 percent of the consumers reported using the internet.

The use of internet as resource declined as the age of the head of the household increased, from over 60 percent for homebuyers younger than 35 years old to less than 15 percent for 65 years or older.

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¹ Ashok Chaluvadi, "Computerizing Construction Firms," *Housing Economics*, September 1994.

² NAHB Business Management and Information Technology Committee, 1997 *Cost of Doing Business Study*

³ In the June 2000 BEC survey, 49 percent of builders with internet access said they used the internet to obtain information about materials, but only 4 percent purchased any materials online. See Gopal Ahluwalia and Jo Chapman, "The Internet and Building Materials," *Housing Economics* July 2000.