

Dell Online

Introduction

The Director of Dell Online's Home and Small Business Unit has just heard some contradictory statistics about online purchasing at Dell.com. On the one hand, Dell is enjoying 70 percent market share in the on-line PC market. Dell.com is selling \$5 million per day on-line—more than half of Dell's total sales. On the other hand, less than 1 percent of Web visits to Dell.com resulted in an actual purchase. More than 99 percent of visitors to Dell.com drop out somewhere along the three-phase process that takes place between the home page and the sale.

As the director of Dell Online's Home and Small Business Unit, you are concerned that you will not reach the goal of selling \$60 million per day by the end of the year unless you can convert more of these opportunities (visitors) into sales (buyers). Even a small reduction in the attrition rate will lead to a large increase in on-line sales.

How would you improve the site to increase the conversion rate?

Dell Background

Dell is the largest seller of PCs in the world. The company sells build-to-order computer systems directly to a wide range of customers—from the largest enterprise government agencies to individual home PC enthusiasts. Founded in 1984 by Michael Dell in his university dorm room, the company grew to \$31.8 billion by fiscal year 2000. Commensurate with its meteoric rise, Dell has seen its stock soar by a factor of more than 400 times over the last decade. Dell's success is based on a direct-sales model for build-to-order PCs and the use of information technology (IT) to streamline processes from procurement to manufacturing to marketing.

Pioneer in Direct Sales of PCs

Dell pioneered the direct-sales approach, eschewing the then-dominant indirect model that interposes a network of distributors, value-added resellers, and retailers between the manufacturer and the customer.

All data in this case are hypothetical and do not reflect actual Dell numbers.

the PC maker and the PC buyer. Selling direct lowered Dell's cost by 25 to 40 percent compared to competitors (by eliminating the markups of intermediaries). Dell passed these savings on to customers.

In Dell's early days, direct connections with customers were based on phone calls that Dell used to get customer feedback on its products. Michael Dell believed that by selling PC systems directly to customers, Dell Corporation could best understand customers' needs and provide the most effective computing solutions to meet those needs. Dell initially targeted technically minded customers who have a lower cost of service and tend to buy higher-end, high-performance PCs. Knowledgeable PC buyers are less likely to need sales assistance, are more comfortable with specifying the technical configuration of the PC that they want, and tend to buy more expensive, cutting-edge machines. Buyers who knew what they wanted bought from Dell.

Reducing Costs and Risks with Build-to-Order

Dell's direct-sales model, on the front end, is supported by a build-to-order manufacturing process on the back end. Rather than fulfill customer demand from an extensive inventory of prebuilt PCs, Dell builds each PC on demand. Customers can choose which components they want their computer to have when they order. Dell then assembles the requested hardware and software components and ships the order. This strategy not only improves customer satisfaction, as customers get what they want, but actually reduces costs and risks to Dell.

Customers place orders by phone or on the Web, and the orders are downloaded to Dell's factories. Dell has an electronic bill of materials that tells operators exactly what materials go into the ordered PC. Each PC is built from base components. Dell uses true build-to-order, not configure-to-order, manufacturing. (In configure-to-order, the manufacturer builds a machine, stores it while waiting for an order, and then opens it up and configures it for the customer after the customer has placed an order.)

Build-to-order offers important advantages for Dell. As Moore's law states, the PC industry contends with exponentially increasing price-performance ratios of most PC components. Many PC components lose value at a rate as high as 1 percent per week. Worse, obsolete components (e.g., last year's CPU chips and disk drives) have virtually no value because customers refuse to buy inadequately powered machines. PC companies that build inventories of PCs to meet inexact forecasts face a double penalty. First, the PC's components lose value while sitting in inventory. Second, the company faces the risk of having to write off obsolete machines. By contrast, Dell holds very little inventory. In 2001, Dell held an average of fewer than four days' worth of inventory, down from 11 days in 1998. By contrast, the industry average was six weeks of inventory.

Moreover, by holding an inventory of parts rather than of finished goods, Dell reduces business risk. Dell does not build computers in the hopes that they will sell—it builds computers after it receives the customer order. It is much less expensive to hold inventory of components and build the computer to customer specifications than it is to try to predict which computer systems customers will want and then hold much more expensive inventory. This practice also lets Dell be more responsive to changes in technology and component prices. When new hardware components are introduced, Dell can immediately offer them to its customers without having to worry about clearing or writing off obsolete machines.

Direct sales in conjunction with build-to-order is a powerful model for Dell and its customers. Customers get to buy what they want rather than be forced to choose among a fixed set of options. Dell wins because by developing and building only those systems that customers want, Dell eliminates the excess cost of buying many components, having high storage and inventory costs, and having to sell the plus at a loss. Dell passes these savings on to the customer.

In addition to its own product innovations, Dell leverages its research and development (R&D) by spending collaboratively with industry partners to create relevant technologies for customers. This efficient approach helps Dell avoid costly and redundant R&D efforts on technologies that may never materialize in the market place.

SUMMARY OF ADVANTAGES OF DIRECT SALES OF BUILD-TO-ORDER PCS

- Reduced costs (sell at lower prices)
 - No markups for intermediaries.
 - Reduced inventory holding costs (build-to-order lets Dell hold low inventory)
 - Better prices on components (Dell purchases inventory later at the lower price).
 - Low cost of service for on-line sales.
- Reduced risk (by taking orders straight from customers, Dell builds its PCs to demand rather than to inexact forecasts)
 - Reduced risk of obsolescence of inventories.
 - Obsolescence risk limited to components (not expensive finished-goods inventory).
- Better relationship with customer
 - Customers select, customize, order and pay for systems on-line.
 - Customers can order exactly the PC configuration they want, not a standard model.
 - Dell owns the relationship with the customer.
 - Customer data and direct relationship enables more tailoring and value added services.
- Faster cycle times
 - Faster payment: Converting an order to cash can take less than 24 hours for credit card and electronic payments, compared to the 16 days that Gateway waits to receive payment from intermediaries (or the 35 days that Compaq waits).
 - Reduces time to market for new products because Dell does not have to empty and fill distribution channels.

Customer Segmentation

Internally, Dell is organized by customer segment—being divided according to the type and nature of Dell's connection with the customer. Some 40 percent of Dell's customers are what Dell calls "relationship" customers. These are larger organizations (e.g., bigger businesses and government agencies) with whom Dell has a long negotiated relationship. Relationship buyers evaluate PC purchases on a broader set of factors, including vendor strength, standardization of their own technological structure, and so on. Relationship buyers value Dell services such as DellPlus (in which Dell installs software on the PC).

Another segment of customers are "transaction" customers: individuals or smaller businesses who view each purchase individually, focusing on the lowest cost of each purchase. (The remaining segment of customers combine aspects of both relationship and transaction customers.) Transaction buyers must be won over each time they make a purchase decision, and they buy primarily on the basis of features and price. As the director of Dell Online's Home and Small Business Unit, all your customers are transaction customers—buying PCs one at time.

Dell is organized along customer segmentation lines rather than product lines for three reasons. First, the organizational scheme helps Dell understand its customer better. By grouping customers into increasingly granular levels, Dell can understand the needs of these customers and how they make purchase decisions and then devise specific sales and marketing processes for each group. Second, the segmentation has let the company see the growth rates, profitability, service-level performance, and market share in each segment and adapt its activities accordingly. Finally, segmentation lets the company measure the efficiency of each division in terms of its asset use. Dell can evaluate the return on invested capital to each segment and compare it with other segments. Each division is a complete business unit, with its own sales, service, finance, and IT technical support.

In an interview with *Harvard Business Review*, Michael Dell talked about his customer segmentation strategy:

We look closely at financial measures like gross margins by customer segment—and we focus on segments we can serve profitably as we achieve scale. People are sometimes surprised to learn that 90% of our sales go to institutions—business and government—and 70% to very large customers that buy at least \$1 million in PCs per year. . . . For years we didn't actively pursue the consumer market because we couldn't reach our profit objectives. So we let our competitors introduce machines with rock-bottom prices and zero margins. We figured they could be the ones to teach consumers about PCs while we focused our efforts on more profitable segments. And then, because we're direct and can see who is buying what, we noticed something interesting. The industry's average selling price to consumers was going down, but ours was going up. Consumers who were now buying their second or third machines and needed less handholding were coming to us. And without focusing on it in a significant way, we had a billion-dollar consumer business that was profitable. So we decided in 1997 that it was time to dedicate a group to serving that segment."¹

Dell.com

In 1996, Dell launched on-line sales through its Web site, www.dell.com, being the first PC maker to do so. Dell's emphasis on tech-savvy PC buyers made on-line selling a natural. High-end PC buyers were obvious users of the Internet and early adopters of e-commerce. Moreover, because Dell sold direct, it did not need to worry about channel conflict (i.e., competing with an entrenched network of distributors and retailers).

¹ Joan Magretta, "The Power of Virtual Integration: An Interview with Dell Computer's Michael Dell," *Harvard Business Review*, March–April 1998, p. 77.

To succeed in selling on-line while giving customers the choice of components features they want in their computer, Dell needed an on-line configurator. The configurator lets Dell customers choose among computer models and a variety of options such as memory, size, hard drive capacity, and modem type. When a customer clicks an option, the exact cost is immediately added. (Conversely, removing options subtracts costs.)

The configurator reduces costs for Dell (no salesperson or order entry clerk needed), reduces errors, and increases speed—the order is processed immediately. The configurator also records buyer's preferences, giving Dell immediate access to buying patterns. This gives Dell real-time market knowledge.

By April 1997, Dell was selling \$1 million of goods per day on-line. Internet efficiencies let Dell create that \$1 million daily sales volume with only 30 people, compared to the 700 who would be needed to process a similar sales volume by phone. The following year, Dell was selling \$3 million per day on its Web site. As early as 1998, one-third of Dell's consumer business was conducted on-line (and 50 percent of the Japanese consumer business was done on-line). By 2000, on-line sales were running \$50 million per day and made up more than half of all Dell product sales.

A Tale of Two Studies

Although Dell.com is undeniably successful, two studies of on-line PC buying give Dell a confusing picture of the effectiveness of its on-line sales efforts. Internal data about visitors to Dell.com led to an alarming conclusion that only 1 out of every 100 visits to Dell.com results in a sale—99 percent of visitors leave before buying. Yet external data established that Dell enjoyed over 70 percent market share among on-line PC vendors. Dell needs to use careful analysis of these different data to understand buyer behavior and to focus on the best possible opportunities for on-line sales growth.

Napoleon's March: Slogging through the Web Site to Get to "Buy Now"

The first study revealed extremely high attrition rates among visitors to Dell's Web site. This study used internal Dell data on how visitors progress through Dell's site—how many of them leave and how many make it to the ultimate point of purchase. On-line PC buying involves three distinct phases: browsing, configuration, and checkout (see figure 4.1 in the appendix). At each phase, visitors can leave Dell.com. Only those visitors who work their way through all three phases become customers. The study shows that a discouraging 99 percent of visitors leave the site without buying a PC from Dell.

During the first phase, browsing, the visitor passes from the home page to various parts of the retail site to examine product information. Browsing includes a range of search and navigation activities in which the visitor learns about Dell's products and tries to find a suitable PC. Out of every 100 visitors to Dell.com, 50 leave during browsing. This implies that browsing has a 50 percent attrition rate.

The second phase, configuration, starts when the visitor has selected a particular Dell model and wants to configure the purchase. Because of Dell's build-to-order approach, most of its models are defined in terms of ranges, such as "as low as \$1,800" or "as much as 1 GB RAM." Configuration includes selecting among these various model options, indicating the amount of RAM or CPU speed, and selecting associated

peripherals (e.g., speakers and network interface cards). Configuration involves more than a dozen questions, the answers to which change the price by some amount. After the configuration process, the visitor learns the total price for their specific configuration. The prospective customer can then adjust the configuration and recalculate the price. For every 100 visitors to Dell.com, only 50 enter the configuration process. Of those 50, 48 leave. This implies that configuration has a 96 percent attrition rate.

The final phase is checkout. Once the visitor has selected and configured their PC, they must submit appropriate payment and shipping information, entering name, address, and credit card information. Checkout culminates in the final “Buy Now” button, which formally triggers the order. Of the original 100 visitors to Dell.com, only two reach the checkout phase. Of those two stalwart individuals, 50 percent drop out during this final phase. Thus, of 100 visitors to Dell.com, only one (1 percent) is converted to a paying customer.

This study paints a grim picture in which Dell’s Web site is a gauntlet from which few customers emerge. As the director of Dell Online’s Home and Small Business Unit, you know that converting even a few percent more visitors into customers could have a massive impact on sales.

Massive Market Share: Dell.com Is the Cream of the Crop

This grim analysis of attrition rates among visitors to Dell.com was counterbalanced by further studies of on-line PC buying habits (figure 4.2 in the appendix). Dell examined external Web data and competitor intelligence, drawing information from Nielsen Net Ratings, Jupiter Media Metrix, and ComScore. These external data sources helped Dell understand where its wayward visitors go when they leave and whether Dell is losing customers. These data sources elucidate patterns of visitation across multiple competitors and multiple sessions. Such data tell Dell how long people spend at different on-line PC sites, how many different sites they visit, and from whom they buy.

The foremost fact from these data is that Dell enjoys 70 percent market share among on-line PC vendors. Although Dell loses more than 99 percent of its visitors, these visitors are not just buying from Dell’s competitors. Dell’s high market share suggests that Dell is doing quite well on-line (customer satisfaction ratings bear this out). Moreover, working harder to steal customers from the on-line competition will generate only modest sales increases (even if Dell got 100 percent market share of current on-line buyers, its on-line sales would increase by only 25 percent, but if more people buy on-line the total on-line market sales would be higher). How can Dell reconcile a 1 percent conversion rate with a 70 percent market share?

Further examination of external Web data and competitor intelligence reveals that the visitor attrition rate figures are terribly skewed by an important element of buyer’s behavior. PC buyers want to compare different products, so they shop around, visiting multiple sites multiple times before buying. Although 99 percent of visitors leave Dell.com before buying, many of them come back later. Indeed, the average buyer from Dell visits Dell.com six times before buying. This fact alone accounts for some, but not all, of the attrition rate. M

Implication: Not As Bad As It Looks, Not As Good As It Could Be

Somewhere between the discouragingly high attrition rates and the encouragingly high market share is the real story of Dell.com. The key is to combine the internal and

external data to infer the behavior of the visitors to Dell's Web site and of PC buyers general.

The real lesson from these internal and external data is that a very large fraction of visitors to Dell.com do not buy from Dell or any other on-line PC provider. On the basis of attrition rates and visitation rates, we can infer that only about 4 out of every 100 visitors to Dell.com ultimately buy a PC from Dell. On the basis of Dell.com's 7 percent market share and assuming that customers of competing on-line PC makers also visit Dell.com numerous times, we can estimate that only 5.7 percent of Dell's visitors buy a PC from any on-line site. Thus, more than 90 percent of visits to Dell.com are by people who never buy a PC on-line. This analysis suggests that Dell has a substantial opportunity to increase sales by getting more people to buy PCs on-line by converting those visitors who normally would not buy a PC on-line.

Analysis

Your job is to formulate a plan (strategic goals with tactical initiatives) that will help Dell reach \$60 million per day in on-line sales by the end of the fiscal year. Note that the question here is not one of customer acquisition. We assume that a steady enough flow of visitors is arriving at Dell's Web site. Instead, the objective of this case is to analyze ways in which the customer experience at Dell's Web site can be improved.

Task

Prepare a three- to four-page report presenting your top three recommendations for improvements to Dell.com that focus on customer conversion. To reference your recommendations, you are free to compare and use examples from any of Dell's competitors. As a hint, draw a behavioral decision process chart of customer buying and think about what elements are not met by the site experience. In addition, think of other types of clickstream or customer traffic data that could be helpful in the analysis.

Following is a list of questions that you might find helpful in leading you to your final recommendations:

1. To whom is this site targeted? Is it tailored to experienced or inexperienced customers?
2. How can the site be improved? For example, are the pages built in the right way? Are customers directed properly? Are trust cues in place?
3. How does Dell's site differ from those of its competitors? Are there features within its site that you think are unique and that effectively increase conversion? Are aspects of competitors' sites unique?

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Appendix

Clickstream Data

Clickstream data enable companies to calculate the conversion rate for a site and to calculate the retention at each stage of the process as visitors move through the site. Companies can obtain this raw data from "log files" that record each click a person makes while visiting the site. A company can easily capture log files on its site with available software from firms like WebCriteria or WebTrends.

Figure 4.1 shows a hypothetical clickstream analysis for Dell. With clickstream data, we can see how many people land on the home page and then click on product pages. If they leave the site after examining product information, we can calculate the fraction of the visitors lost after browsing. Likewise, we can see how many of the visitors who stay on the site click on "configure." From that, we can calculate the fraction of visitors lost between browsing and configu-

ration. Next, we can see how many visitors put a product in their shopping cart and click on "buy." This lets us calculate the retention from configuration to buy. Finally, we can see how many of those who click on "buy" actually provide credit card information and pay for the product. Such ratios provide the kind of data shown in figure 4.1. The total fraction of those who visit a site and then buy is called the site "conversion." In the figure, Dell's conversion is indicated as 1 percent.

Companies can also identify visitors who return to the site by attaching a cookie to the visitor's browser. This lets firms calculate the fraction of initial site visitors who eventually buy a product on their site. Figure 4.2A shows that Dell has a 4 percent unique conversion over three months. In other words, even though only 1 percent of visitors to the site buy on that visit, 4 percent of those who initially visit will ultimately

FIGURE 4.1 Dell Online: Hypothetical Site Flows

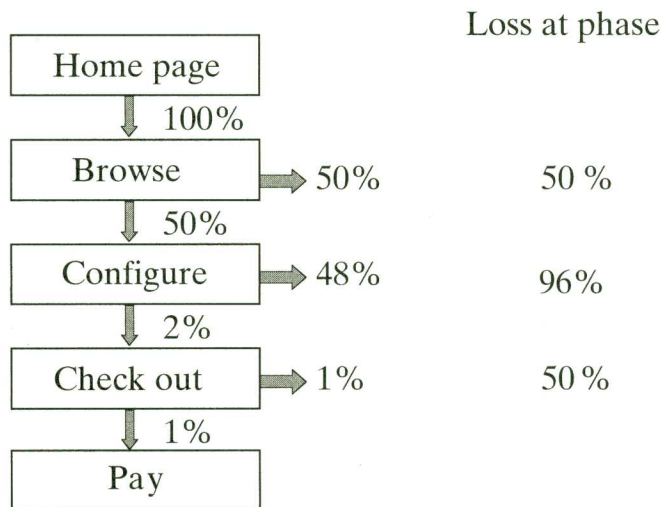


FIGURE 4.2**A. Conversion**

• Dell visitors	1.0/session	4.0% unique*
• Gateway	.1%	.3%
• Compaq	.2%	.6%
• HP	.4%	.8%
• IBM	.2%	.5%

*Unique buyers over multiple sessions in three-month period. All data are hypothetical.

B. Dell Buyers Minutes*

• Dell	20/session	50 total
• Gateway	10	30
• HP	10	30
• IBM	8	75
• Compaq	8	25
• Apple	5	85

*All data are hypothetical.

C. Market Share

- Share of on-line home computer sales*
- Dell 70%
- Gateway 12%
- HP 6%
- IBM 4%
- Compaq 6%
- Apple 2%

*All data are hypothetical.

D. Sites Dell Buyers Also Visit*

• Gateway	35%
• HP	25%
• IBM	13%
• Compaq	22%
• Apple	20%

*All data are hypothetical.

buy over multiple visits in a three-month period. If we attach a timer to the site, we can calculate the initial time and ultimate time that visitors spend on the site. Figure 4.2B indicates that Dell visitors spend 20 minutes on their first visit and a total of 50 minutes over multiple visits in a three-month period.

A more expanded form of clickstream analysis allows capturing the clicks not only on the firm's site but on competitor sites as well. Such data are collected by

third-party companies such as Jupiter Media Metrix, Nielsen Net Ratings, Comscore. This data collection is done by installing software on a sample of Internet users (Nielsen and Jupiter Media Metrix) or establishing a virtual browser on the user's machine (Comscore). These panels typically have over one million users. With clickstream monitoring, we can see which other sites our customers visit and what they do there. For example, we can see how many of our

million panel members buy in a given period and the market share for each site. Figure 4.2C shows the market share for leading PC makers among those people who buy on-line. Although Dell's conversion is low, competitors' conversion is lower (see figure 4.2A), so Dell's market share is high. But this implies that many people visit sites but do not buy on-line at any of them. We can also see what sites people visit while they shop. For example, figure 4.2D shows that 35% of people who buy a Dell computer also visited Gateway, 25% HP, 13% IBM, and so on. This gives us a view of competitive visits and shopping

behavior. Finally, we can see how many minutes visitors spend on these competitor sites (see figure 4.2B and D). With additional analysis, we could determine what they look at on these sites. For example, did they compare specific prices or just generally browse the other sites?

Clickstream analysis represents a wealth of information about how customers react to a site and how they shop. This analysis can be very useful for creating changes to a site to increase the conversion rates. Use the hypothetical data in figure 4.2 to formulate your suggestions for improving conversion in this case.

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