



# Starting an E-Commerce Site

**T**he word “e-commerce” has had a remarkable fall from grace in the past few years. Just the idea of having an e-commerce web site was once enough to get many businesspeople salivating in anticipation. But now, it’s no longer enough to say, “E-commerce is the future—get online or get out of business.” You now need compelling, realistic, and specific reasons to take your business online.

If you want to build an e-commerce site today, you must answer some tough questions. Here are a few things to ask yourself:

- Many big e-commerce sites have failed. What can e-commerce possibly offer me in today’s tougher environment?
- Most e-commerce companies seem to need massive investment. How can I produce a site on my limited budget?
- Even successful e-commerce sites expect to take years before they turn a profit. My business can’t wait that long. How can I make money now?

We’ll take a shot at answering these questions in this chapter.

## Deciding Whether to Go Online

Although there are hundreds of possible reasons to go online, they tend to fall into the following groups:

- Retain existing customers and get new customers
- Encourage existing customers to spend more money
- Reduce the costs of fulfilling orders

We’ll look at each of these in the following sections.

## Get More Customers

Getting more customers is immediately the most attractive reason to go online. With an e-commerce site, even small businesses can reach customers all over the world. This reason can also be the most dangerous, however, because many people set up e-commerce sites assuming that the site will reach customers immediately. It won’t. In the offline world, you

need to know a shop exists before you can go into it. This is still true in the world of e-commerce—people must know your site exists before you can hope to get a single order.

Addressing this issue is largely a question of making your site known. Aside from advertising, methods of getting more customers to visit include registering the web site with the popular search engines and directory listings, optimizing the site for search-engine ranking, creating forums, sending newsletters, and so on.

In this book, we don't cover the aspects of selling your site; we focus on ways to sell the products listed on your site. But this book does include some basic search engine optimization techniques (to attract visitors), and it provides a well-designed presentation that will sell the site once your customers visit it.

## Encourage Customers to Spend More

Assuming your company already has customers, you probably wish that they bought more. What stops them? If the customers don't want any more of a certain product, there's not a lot that e-commerce can do, but there are other roadblocks on the sales path that can be removed, such as these:

- Getting to the physical location of the shop or placing an order by mail is a hassle.
- Some of the things you sell can be bought from more convenient places.
- You're mostly open while your customers are at work.
- It's harder to implement an efficient product recommendation system in a physical store.

A quality e-commerce site can increase your business revenue. The convenience of being online also means that people are more likely to choose you over other local suppliers. Because your site is online 24 hours a day, rather than the usual 9 to 5, your customers can shop with you outside of their working hours. Having an online store brings a double blessing to you if your customers work in offices, because they can indulge in retail therapy directly from their desks.

People with Internet access will find placing an order online far easier than any other method—meaning that when the temptation to buy strikes, it's much easier for them to give in. Skillful e-commerce design can encourage your customers to buy things they wouldn't usually think of. Special offers to regular shoppers, suggested impulse purchases before or during checkout, useful accessories presented alongside the main product, and showing a more expensive alternative to the one they're considering encourage customers to buy more. You can easily update your site to suggest items of particular seasonal interest, to announce interesting new products, or to recommend products similar to what a specific customer has already bought.

You'll learn how to use some of these methods in later chapters; by the end of this book, you'll have a good idea of how to add more features for yourself.

Finally, it's much easier to learn about your customers via e-commerce than in face-to-face shops or even with mail order. Even if you just gather e-mail addresses, you can use these to send out updates and news. More sophisticated sites can automatically analyze a customer's buying habits to make suggestions on other products the customer might like to buy.

Another related benefit of e-commerce is that there's no real cost in having people browse without buying. In fact, getting people to visit the site as often as possible can be valuable. You should consider building features into the site that are designed purely to make people visit

regularly; for example, you might include community features such as forums or free content related to the products you're selling.

## Reduce the Costs of Fulfilling Orders

A well-built e-commerce site will be much less expensive to run than a comparable offline business. Under conventional business models, a staff member must feed an order into the company's order-processing system. With e-commerce, the customer can do this for you—the gateway between the site and the order processing can be seamless.

Of course, after your e-commerce site is up and running, the cost of actually taking orders gets close to zero—you don't need to pay for checkout staff, assistants, security guards, or rent in a busy shopping mall.

If you have a sound business idea, and you execute the site well, you can receive these benefits without a massive investment. What's important is to always focus on the almighty dollar: Will your site, or any particular feature of it, really help you get more customers, retain existing customers, and get customers to spend more, or will it reduce costs and therefore increase your margins?

Now it's time to introduce the site we'll be using as the example in this book and see just how all of these principles relate to our own shop.

## Let's Make Money

We're going to build an e-commerce store that sells t-shirts. On e-commerce sites, there's always a trade-off to make between building an amazing site that everybody will love and creating a site on a limited budget that will make money. Usually, I'm on the all-the-bells-and-whistles-really-amazing-site side, but I'm always grateful that my ambitions are reined in by the actual business demands. If you're designing and building the site for yourself and you are the client, then you have a challenge—keeping your view realistic while maintaining your enthusiasm for the project.

This book shows you a logical way to build an e-commerce site that will deliver what it needs to be profitable. However, **when designing your own site, you need to think carefully about exactly who your customers are, what they need, how they want to place orders, and what they are most likely to buy.** Consider the following points before you start to visualize or design the site and certainly before you start programming:

*Getting customers:* How will you get visitors to the site in the first place?

*Offering products:* What will you offer, and how will you expect customers to buy? Will they buy in bulk? Will they make a lot of repeat orders? Will they know what they want before they visit, or will they want to be inspired? These factors will influence how you arrange your catalog and searching as well as what order process you use. A shopping basket is great if people want to browse. If people know exactly what they want, then they might prefer something more like an order form.

*Processing orders:* How will you turn a customer order into a parcel ready for mailing? Your main consideration here is finding an efficient way to process payments and deliver orders to whoever manages your stocks or warehouse. How will you give your customers confidence in your ability to protect their data and deliver their purchases on time?

*Serving customers:* Will customers require additional help with products that they buy from you? Do you need to offer warranties, service contracts, or other support services?

*Bringing customers back:* How will you entice customers back to the site? Are they likely to only visit the site to make a purchase, or will there be e-window-shoppers? Are your products consumables, and can you predict when your customers will need something new?

After you've answered these questions, you can start designing your site, knowing that you're designing for your customers—not just doing what seems like a good idea at the time. The example site presented in this book has taken a deliberate generic approach to show you the most common e-commerce techniques.

To really lift yourself above the competition, however, you don't need fancy features or Flash movies—you just need to understand, attract, and serve your customers better than anybody else. This book will help you do that.

## Risks and Threats

All this might make it sound as if your e-commerce business can't possibly fail. Well, it's time to take a cold shower and realize that even the best-laid plans often go wrong. Some risks are particularly relevant to e-commerce companies, such as

- Hacking
- Credit card scams
- Hardware failures
- Unreliable shipping services
- Software errors
- Changing laws

You can't get rid of these risks, but if you know about them, you can defend your site from them.

An important way to protect your site from many risks is to maintain backups. You already know backups are important. But if you're anything like us, when it gets to the end of the day, saving five minutes and going home earlier seems even more important. When you have a live web site, this simply isn't an option. Two words: Back up (your web site). Every day.

We don't talk much about the legal side of e-commerce in this book because we are programmers, not lawyers. However, if you are setting up an e-commerce site that goes much beyond an online garage sale, you'll need to look into these issues before putting your business online.

While we're on the subject of risks and threats, one issue that can substantially damage your e-commerce site's reputation is unreliable order fulfillment. This book shows you how to construct a web site that offers products, takes customer orders, and communicates those orders to the owner. An essential part of the process is delivering the products, and to do this, you need a good logistics network set up before launching your shop. If your store doesn't deliver the goods, customers won't come back or refer their *friends*.

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■ **Tip** Webmonkey provides an excellent general e-commerce tutorial, which covers taxation, shipping, and many of the issues you'll face when designing your site, at <http://www.webmonkey.com/webmonkey/e-business/building/tutorials/tutorial3.html>. Check this out before you start designing your site.

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## Designing for Business

Building an e-commerce site requires a significant investment. If you design the site in phases, you can reduce the initial investment and therefore cut your losses if the idea proves unsuccessful. You can use the results from an early phase to assess whether it's worthwhile to add extra features and even use revenue from the site to fund future development. If nothing else, planning to build the site in phases means that you can get your site online and receiving orders much earlier than if you build every possible feature into the first release.

Even after you've completed your initial planned phases, things generally do not end there. When planning a large software project, it's important to design in a way that makes inevitable future growth easy. In Chapter 2, where we'll start dealing with the technical details of building e-commerce sites, you'll learn how to design the web site architecture to allow for long-term development flexibility.

If you're building sites for clients, they will like to keep their options open. Planning the site, or any other software, in phases will help your clients feel comfortable doing business with you. They will be able to see that you are getting the job done and can decide to end the project at the end of any phase if they feel—for whatever reason—that they don't want to continue to invest in development.

### Phase I: Getting a Site Up

Chapters 2 through 11 concentrate on establishing the basic framework for the site and putting a product catalog online. We'll start by putting together the basic site architecture and deciding how the different parts of the application will work together. We'll then build the product catalog into this architecture. You'll learn how to

- Design a database for storing a product catalog containing departments, categories, and products
- Write the Structured Query Language (SQL) and Hypertext Preprocessor (PHP) code for accessing that data and making the product catalog functional
- Add data to the product catalog that defines product attributes, such as color and size
- Provide a product search engine
- Implement basic techniques to make your web site search engine friendly and reduce URL link and redirect errors
- Receive payments through PayPal Website Payments Standard
- Give the site's administrators a private section of the site where they can administer the catalog online

After you've built this catalog, you'll see how to offer the products for sale by integrating it with PayPal's shopping cart and order-processing system, which will handle credit card transactions for you and e-mail you with details of orders. These orders will be processed manually, but in the early stages of an e-commerce site, the time you lose processing orders will be less than the time it would have taken to develop an automated system.

## Phase II: Creating Your Own Shopping Cart

Using PayPal's shopping cart is OK and very easy, but it does mean you miss out on a lot of advantages. For example, you can't control the look and feel of PayPal's shopping cart, whereas if you use your own, you can make it an integral part of the site.

This is a significant advantage, but it's superficial compared to some of the others. For example, with your own shopping cart, you can store complete orders in the database as part of the order process and use that data to learn about the customers. With additional work, you also can use the shopping basket and checkout process as a platform for selling more products. How often have you been tempted by impulse purchases near the checkout of your local store? Well, impulse shopping also works with e-commerce. Having your own shopping cart and checkout gives you the option of offering low-cost special offers from the shopping cart at checkout. You can even analyze the contents of the cart and make suggestions based on this.

Chapters 12 through 15 show you how to

- Build your own shopping cart
- Pass a complete order through to PayPal for credit card processing
- Add AJAX features to your product catalog and shopping cart to enhance the user experience
- Create an order administration page
- Implement a product recommendation system

Once again, at the end of Phase II, our site will be fully operational. You can leave it as it is or add features within the existing PayPal-based payment system. But when the site gets serious, you'll want to start processing orders and credit cards yourself. This is the part where things get complicated, and you need to be serious and careful about your site's security.

## Phase III: Processing Orders and Adding Features

The core of e-commerce—and the bit that really separates it from other web-development projects—is handling orders and credit cards. PayPal has helped us put this off, but there are many good reasons why—eventually—you'll want to part company with PayPal:

*Cost:* PayPal is not expensive, but the extra services it offers must be paid for somehow. Moving to a simpler credit card processing service can mean lower transaction costs (this is not a rule though), although developing your own system will obviously incur upfront costs.

*Freedom:* PayPal has a fairly strict set of terms and conditions and is designed for residents of a limited number of countries. By taking on more of the credit card processing responsibility yourself, you can better control the way your site works. As an obvious example, you can accept payment using regional methods such as the Switch debit cards common in the United Kingdom.

*Integration:* If you deal with transactions and orders using your own system, you can integrate your store and your warehouse to whatever extent you require. You could even automatically contact a third-party supplier and have the supplier ship the goods straight to the customer.

*Information:* When you handle the whole order yourself, you can record and collate all the information involved in the transaction—and then use it for marketing and research purposes.

By integrating the order processing with the warehouse, fulfillment center, or suppliers, you can reduce costs significantly. This might reduce the need for staff in the fulfillment center or allow the business to grow without requiring additional staff.

Acquiring information about customers can feed back into the whole process, giving you valuable information about how to sell more. For example, using that data, you could e-mail customers with special offers or just keep in touch with a newsletter. You also could analyze buying patterns and use that data to formulate targeted marketing campaigns.

During Phase III, which is covered in Chapters 16 through 22, you will learn how to

- Build a customer accounts module so that customers can log in and retrieve their details every time they make an order
- Allow customers to add product reviews
- Integrate Amazon.com products into your web site using XML Web Services
- Establish secure connections using Secure Socket Layer (SSL) so that data sent by users is encrypted on its travels across the Internet
- Charge credit cards using DataCash, Authorize.net, and PayPal Website Payments Pro (formerly known as VeriSign Payflow Pro)
- Store credit card numbers securely in a database

This third phase is the most involved and requires some hard and careful work. By the end of Phase III, however, you will have an e-commerce site with a searchable product catalog, shopping cart, secure checkout, and complete order-processing system.

# TShirtShop

As we said earlier, we're going to build an online shop called TShirtShop (which will sell, surprisingly enough, t-shirts). Figure 1-1 shows how TShirtShop will look at some point during the second stage of development.



**Figure 1-1.** TShirtShop during Phase II of development

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**Tip** You can find a link to an online version of TShirtShop at <http://www.cristiandarie.ro/php-mysql-ecommerce-2/>. Many thanks go to the folks at Going Postal (<http://www.goingpostal.cc>) who allowed us to use some of their products to populate our virtual TShirtShop store.

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For the purposes of this book, we'll assume that the client already exists as a mail-order company and has a good network of customers. The company is not completely new to the business and wants the site to make it easier and more enjoyable for its existing customers to buy—with the goal that customers will end up buying more.



Knowing this, we suggest the building and opening the TShirtShop web site in phases for the following reasons:

- The company is unlikely to get massive orders initially—we should keep the initial cost of building the web site down as much as possible.
- The company is accustomed to manually processing mail orders, so manually processing orders e-mailed by PayPal will not introduce many new problems.
- The company doesn't want to invest all of its money in a massive e-commerce site only to find that people actually prefer mail order after all! Or it might find that, after Phase I, the site does exactly what it wants, and there's no point in expanding it further. Either way, we hope that offering a lower initial cost gives our bid the edge (it might also mean we can get away with a higher total price).

Because this company is already a mail-order business, it probably already has a merchant account and can process credit cards. Therefore, moving on to Phase III as soon as possible would be best for this company, so it can benefit from the preferential card-processing rates.

## Summary

In this chapter, we've discussed the positive financial and customer service aspects of including e-commerce in your business operation. In the real and sometimes hostile commercial world, where it's important to focus on raising short-term revenue and minimizing risk, an e-commerce site will help you by

- Increasing your customer base
- Persuading your customers to spend more
- Lowering your fulfillment costs

We've applied those principles to a three-phase plan that provides a deliverable, usable site at each stage and continues to expand throughout this book.

At this point, you've presented your plan to the owners of the t-shirt shop. In the next chapter, you'll put on your programming hat and start to design and build the web site (assuming you got the contract, of course).