



Creating Exceptional Kiosks

Tips and guidelines for effective self-service experiences

Abstract

Exceptional kiosk design encourages repeat business, builds customer confidence in the brand, fosters favorable word-of-mouth advertising, and provides opportunities for up-selling and cross-selling. The merits of an attractive, engaging interface that facilitates customer interactions extend far beyond the successful completion of a transaction.

In contrast, poor design can produce a frustrating customer experience with a negative impact that endures beyond a single failed transaction. The stature of the brand can be tarnished and prospective customers can be lost in the few seconds that it takes for an ineffective interface to confuse or irritate the user. In the haste to capitalize on the dynamic growth of digital merchandizing and self-service kiosks, companies sometimes simply port their entire Web site to a station on the retail floor. This rarely works well and often produces strikingly bad customer experiences. However, with an understanding of the differences between Web site interactions and kiosk interactions, the information and transaction mechanisms available on a Web site can be adapted for successful kiosk deployment.

This paper highlights the principles of effective kiosk design that provide the foundation for a successful self-service deployment—designs that cater to the needs of customers while fulfilling the business goals and expectations of the company sponsoring the project.

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The Next Stage of Digital Merchandising

Computers and digital media are transforming retail establishments and creating new opportunities to interact with customers, convey product information, complete transactions, and market to specialized customer interests. At the forefront of this transformation, self-service kiosks and computer stations are finding homes and uses in a broad array of applications and across many different industry sectors. At their best, kiosks can deliver a rewarding, personalized experience that will bring customers back again and again. At their worst, kiosks can discourage or annoy customers and drive them away—sometimes permanently. The difference between these two scenarios is often the quality, usability, and caliber of the interface design.

With the popularity of kiosks and self-service retail computer stations rising, companies are paying more attention to the overall customer experience, including the best ways to make an interactive experience satisfying and effective. Drawing from the principles of usability design, ergonomics, psychology, communication theory, and similar disciplines, kiosk design is usually more effective when it flows from a clear understanding of the business challenge being addressed. The business objective and the goals of the customer need to be creatively translated into an interface that engages the viewer and encourages interaction. Good design should underlie the process.

This blurring of the lines between business and design has even made inroads at the university level. Stanford's new Institute of Design instructs business, engineering, and design students in the principles of design thinking. Founded by David Kelley, a Stanford engineering professor and the driving force behind the international design firm IDEO, the coursework extends traditional business approaches into the loftier realms of strategic design, business innovation, and greater creativity.¹

In this era of media saturation, customer expectations are greater than ever before. The modern consumer encounters thousands of advertising messages a year—through television, newspapers, magazines, billboards, radio, and the Web. Many of these messages are not relevant, so the savvy consumer just filters them out. For a message to get through the filters, it has to appeal to personal preferences or individual interests in some compelling way. Computers and digital media provide an unprecedented opportunity to address consumers needs and preferences in a highly individualized way—a way that transcends the scattershot approach of mass communications. Service offerings, personalized information, and product purchases can be handled in a way that is substantially different than customary practices. With some attention to fundamental design principles, kiosks and self-service stations can deliver a focused, one-to-one communication experience that meets immediate needs in a forthright and useful way. At a basic level, a kiosk can simply sell a person a plane ticket. At a higher level, a kiosk can help organize and coordinate a month-long journey through Scandinavia. Effective kiosk application designs anticipate individual customer needs and shape the interaction—whether simple or complex—to be elegant, intuitive, and satisfying.

¹ Merritt, Jennifer and Lavelle, Louis, *Tomorrow's B-School? It might be a D-School*, BusinessWeek: August 1, 2005.

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Information Drives the Process

Information motivates consumers and underlies many aspects of a purchase decision. With many of today's consumers accustomed to the convenience of doing thorough product research on the Web, similar expectations accompany interactions that take place through a kiosk or a self-service station. Unlike the Web, however, a kiosk structured for open-ended browsing is unlikely to serve a customer's needs. By nature, kiosks address narrow, but immediate, requirements—for example, investigating mortgage options and applying for a loan, queuing up a series of digital photographs for printing, or evaluating the comparative merits of several different models of cellular phones. Open-ended browsing deflects the user from the end goal, which—from a kiosk perspective—is completing some kind of transaction or gaining specific information in a direct and pleasurable way. A functional, efficient kiosk helps people quickly accomplish their goals, avoiding time-consuming or confusing tasks that may result in long lines of users (and missed opportunities for kiosk operators).

The navigation used within the interface should reflect and reinforce this objective on every level. As shown in Figure 1, kiosk processes should guide the user to a particular goal, in comparison with Web browsing, which encourages open exploration.

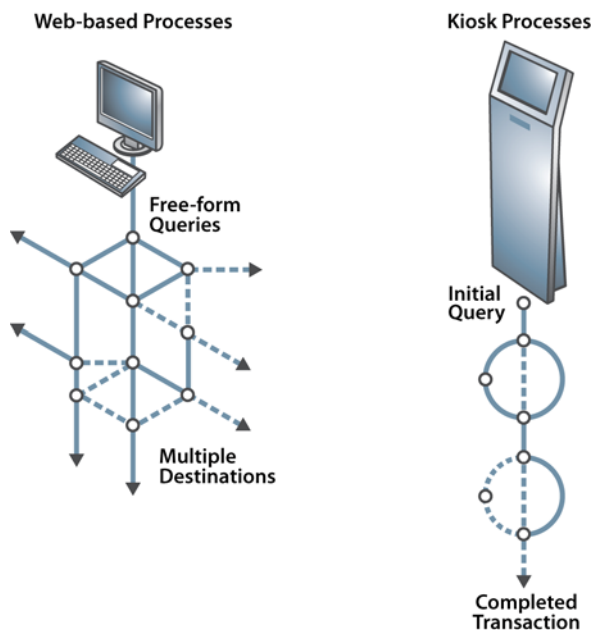


Figure 1. Web-based processes versus kiosk processes

Information accessibility and interface design are closely wedded. With the Web serving as the model for easy information access, kiosk designers face a challenge in reshaping information delivery to accommodate the navigational framework of a touchscreen environment or a self-service station with controls appropriate to the task at hand. Simplicity and a clear focus on a well-understood set of design objectives underlie any successful kiosk design.

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Today's consumers have an innate sense of good design. People willingly pay a premium for an MP3 player with an intuitive interface or for clothing with designer aesthetics from a discount retailer. In fact, customers often demonstrate brand loyalty based on an appreciation of good design. In developing a self-service interface, smart designers recognize that inferior designs will be resoundingly rejected by most consumers. Donald Norman, the author of *The Design of Everyday Things*, summed up the attraction of good design when he said, "Well-designed objects are easy to interpret and understand. They contain visible clues to their operation. Poorly designed objects can be difficult and frustrating to use."² If the device is difficult and frustrating, customers will usually respond to it as an obstacle to making a purchase or gaining information. Creating obstacles for shoppers or producing negative experiences can quickly lead to a rejection of the entire technology. The way to avoid this is by proactively shaping the design of the interface to reflect the customer's perspective. There are a number of very direct and proven ways to accomplish this, as discussed in the following sections.

Making Smart Design Decisions

Decisions made during the early stages of a kiosk design can have a dramatic impact on the overall success of a project. There are three fundamental stages in the planning process to be considered:

- **Stage One—Identify What the Customer Wants to Accomplish:** Many elements need to be pulled together for a successful kiosk deployment. Spend sufficient time in early planning to determine the purpose of the self-service station—both from a business standpoint and from the customer's perspective. If a kiosk application is going to genuinely benefit the customer, the interface and the interactions with it must be constructed at every level to make it easy for the customer to accomplish desired tasks.
- **Stage Two—Determine What Business Performance Objectives Must be Met and How to Measure Them:** If you want your kiosk deployment to be more than an interesting experiment, determine your objectives well in advance of deployment. Is your goal to lower labor costs? Do you want to increase sales in a particular area? Do you want to guide customers toward purchasing a new product? The ways to measure these objectives vary. You might calculate returns based on sales per-square foot or increased sales on a regional or per-store basis. You might also measure the number of employee work hours saved or the reduction in total customer service phone calls. Or, you could include a quick survey at the end of the kiosk transaction to allow the customer to offer feedback on the experience. The important point is that you establish a means to measure your goals.
- **Stage Three—Select the Appropriate Hardware Configuration:** The decisions made in Stage One and Stage Two will help in selecting the appropriate hardware for your project. Follow through by matching application and business performance requirements with a suitable kiosk station. How large a screen is required? Should it be a touchscreen or non-touchscreen? Will the station be deployed in an outdoor location, such as a golf tournament where rain and other

² Norman, Donald A., *The Design of Everyday Things*, Basic Books: 1988, pg 2

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outdoor conditions must be considered? Does the application require long, typed user entries; would a virtual keyboard on the screen be more appropriate or would a ruggedized keyboard and trackball be better suited to the task? Do you need an embedded speaker to provide audio cues or instructions in other languages? Is card swipe or barcode reader hardware needed? Most of these decisions can be derived directly from your Stage One and Stage Two decisions.

Don't overlook fundamental design principles at any stage in the planning process. The principles of effective kiosk design are summarized in the following section.

Applying Successful Design Principles

For the best results when designing a kiosk interface, keep the customer perspective at the forefront, tailor the navigation to the task at hand, and follow these common-sense guidelines:

- **Create a compelling opening screen:** The initial screen of a kiosk application—sometimes referred to as the *attract loop*—should be visually eye-catching and pull prospective customers into further interaction with the kiosk. This display may include an animated sequence, digital signage, customer-oriented information, or simple graphics, leading to two goals: inviting interaction and describing what the customer will accomplish at the kiosk. Make it easy to spot the button or navigational control that launches the interaction. A simple message saying “Touch the Screen” may be enough to get started. Customers quickly give up if they can't figure out what to do next or if they mistakenly think that it is just an advertising loop.
- **Make actions responsive and provide progress indicators:** Studies have demonstrated that customers using a kiosk expect very rapid responses to their interaction—in the range of milliseconds rather than seconds. Design your interface so that when a button is pressed or a navigational element is selected, the interface acknowledges the selection immediately with a visual or auditory signal. As processing is taking place—for example, while a credit card authorization occurs—use indicators to show an action is taking place. That action may be represented in the form of a progress bar, an audible signal, timer movement on screen (a spinning hourglass or stopwatch display), or some other type of graphic or icon. Kiosk responses to touch must be immediate and they must provide feedback to be effective.
- **Simplify the screen layout:** An effective kiosk design typically takes advantage of the full screen area available while providing visual cues to direct the customer to the next step. In Western cultures, a person's eyes look to the lower-right portion of the screen for the next step, so this is an ideal area to place buttons for confirming a transaction or moving to a new screen. Avoid complex screens with too many elements that make it difficult to determine what to do next. The navigation from screen to screen should be simple and intuitive. Provide feedback mechanisms, so the customer knows exactly where he or she is in the process (and how many steps remain).
- **Use appropriate controls and present information clearly:** Shape the kiosk design to the prospective audience, using appropriate controls and clear information presentation. For

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example, if you're placing a kiosk to provide health information in a public area where many users may not be proficient readers or may not speak English, provide audible instructions or alternative language options to guide the process. If your kiosk caters to children who may not have typing skills, consider using many audio cues and animated visual indicators to guide interactions. Children typically enjoy shared interfaces—if you make the kiosk fun and entertaining, they will often cluster around it. Improve the accessibility of your kiosk to accommodate physically challenged users. Consider accessibility as an integral part of the standard control options. Empathizing with your audience and understanding their needs should be a guiding factor in every stage of the kiosk development.

- **Make it *finger friendly*.** A touchscreen does not provide the fine control of a mouse and cursor, so if your kiosk design is based on a touchscreen, adapt the touch points accordingly. Touch points typically need to be a region composed of 50 to 75 pixels to accommodate a fingertip. This is an area where simply porting a Web design to a kiosk is likely to fail. A fingertip doesn't provide the fine-grained control to select drop-down boxes from a menu or an option in a dialog box. If you're using touch, scale the navigation elements to fingertip size.
- **Ensure clear readability:** Pay attention to the readability of your kiosk design. Are the fonts large enough to be seen easily from a reasonable distance? Do the colors and contrast of the screen design elements enhance readability under different lighting conditions? Is the most important information the easiest to spot on the screen? Does the eye flow easily to the controls? Some usability testing during the development process can often help spot difficulties in the readability of the interface.
- **Be open to design inspiration:** As you encounter kiosks in airports, libraries, banks, music stores, post offices, and other locations, pay attention to the design elements, noting those approaches that work and those that don't. You might even keep a small notebook to record impressions or create a memo file on your PDA to record these impressions. When you see an approach that clearly achieves the desired results and demonstrates exceptional design, that approach may be adaptable for your next kiosk project. You can also borrow design ideas from everyday objects around you—automobile dashboards, audio component controls, toaster ovens, traffic signals, photocopy machines, and so on. The natural interfaces and intuitive qualities that constitute good design can be found everywhere.

When you have created a design that meets your requirements, many of the individual components of that design may have value in a future project. Reusable components are at the heart of the Planar architectural model, and this approach can save IT groups time and money, as well as establishing a consistent, easily maintainable framework that can streamline the process of developing kiosk interfaces. Through the use of a building-block model and standards-based architecture, Planar encourages developers and IT groups to maximize the benefits of reusable marketing assets and design components. Each completed project can help build an ongoing library of components—making each subsequent project easier to accomplish.

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How do you make the learning curve for a new customer walking up to a kiosk as short as possible? The ultimate purpose of the interface is to guide the customer through a process, but before you can do that, you have to get that customer to engage with the kiosk. If you provide a bright, clear visual cue as to how to get started, even a simple instruction—Touch Here—you can successfully engage customers and pull them into the process. After that, you can easily lead them through whatever processes follow.

Secrets of Moving from Web to Kiosk

Repurposing Web content for kiosk presentation requires careful consideration of the differences between browser navigation and kiosk navigation. Confuse these differences or ignore them at the risk of creating an extraordinarily poor (and ultimately unsuccessful) kiosk. Some of the guidelines in this section are extensions of the principles discussed earlier in this paper—only from the perspective of migrating designs from Web to kiosk.

Many Web-browsing conventions don't work well in touch environments. Without the standard PC input devices—such as a mouse or keyboard—familiar controls are lost, such as double-clicking, right-clicking, using CTRL keys to change keyboard functions, and keyboard shortcuts. A well-designed kiosk is simpler and intuitive (with the emphasis on well-designed). Without the assortment of shortcuts and keyboard controls to rely on, successful kiosk designers learn to limit navigation to buttons sized for fingertip control.

The physical size of Web pages may also be inappropriate for a kiosk. Most Web sites include pages that scroll to reveal more information, but small scroll bars do not adapt well to a touch environment. Any time you provide access to content “below the fold” on the page, this opens up the possibility that the kiosk will be left in an unattractive state by the previous visitor.

The navigation elements are substantially different between typical browser-based pages and well-designed kiosk pages. Web sites generally group the navigation elements in the upper-right hand corner of the page. Browsers often display a logo in the corner, a left-hand navigation bar, and sometimes other links of interest across the top of the page. This approach is well understood and very successful on the Internet.

Kiosks, however, work quite differently, as shown in Figure 2. On a full-screen kiosk interface, users expect to see the “Next” or “Continue” functions in the lower right-hand corner of the screen. They expect “Back” or “Cancel” functions in the lower left-hand corner. This type of design approximates the turning of pages in a book, an activity that is natural and intuitive.

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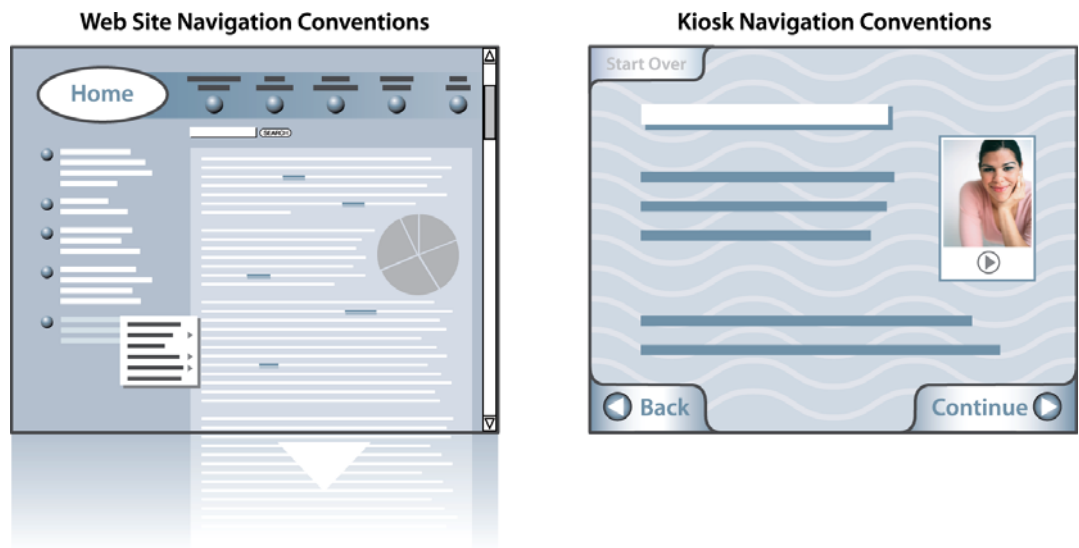


Figure 2: Navigation Conventions

As in any effective interface design, consistent placement and nomenclature of navigational elements is important. Use terms and button placement consistently. Don't use both "Delete" and "Cancel" in different places within the application, or use different terms to indicate the same operation, such as "Enter" and "Submit."

Having a well-designed Web site puts you in an excellent position to design an effective kiosk interface. Marketing assets—such as product images, Apple QuickTime media, Macromedia Flash³ animations, 360-degree product tours, dynamic HTML code, proven Web copy, and similar material—can be repurposed for a kiosk implementation. Instead of starting from scratch, you can draw on existing assets and adapt the kiosk interface to suit the application, following the design principles offered in this paper. There are many examples of companies that have created outstanding kiosks using repurposed advertising, signage, Web site content, marketing videos, and product catalogs.

³ Apple QuickTime, Macromedia Flash, and all other trademarks and names are properties of their respective owners.

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Conclusion

A successful kiosk interface design accomplishes two primary goals:

- Creates a positive, useful, and memorable experience for a customer, resulting in a completed transaction and repeat use
- Provides an effective solution to a business challenge, achieving the anticipated benefits in a measurable way for the organization

Think of the kiosk design as a guided, purposeful journey with a focused mission—making an activity simple and rewarding, whether the activity is turning in a rental car without standing in a long line or purchasing postage stamps from a self-service station.

The key points to remember in planning and implementing a kiosk are:

- **Understand your objectives:** Extra time spent thinking through the design and ensuring that the planned solution squarely addresses a primary customer need and business challenge is time well spent.
- **Design for the medium:** Kiosks and self-service stations differ from the Web and browser-based applications. Structure your interface to reflect the strengths of the communication medium with clear navigation and a well-defined path to completion.
- **Measure your accomplishments:** The planning process should establish what you want to achieve in a measurable way, whether you're calculating an anticipated return on investment (ROI) or a reduction in customer support costs. Define metrics that help you determine whether a kiosk deployment is meeting your goals and track these metrics on a regular basis.
- **Redesign when required:** If you detect problems in the use of a station or the deployment is not meeting your stated objectives, consider redesigning the interface or approach to achieve your goals. A centralized architecture that supports easy upgrading of the kiosk interface can simplify this process considerably. For example, Planar uses a centralized, interoperable architecture that simplifies the process of updating the content and the applications running on individual stations. Planar also provides a number of techniques for measuring kiosk use according to different parameters. The data acquired from user interactions provides a valuable tool for redesign efforts, letting companies make dynamic changes to improve user responses and increase the ROI.

Companies that invest the necessary effort at the beginning to plan an implementation—from the station capabilities to the interface design to the expectations (both from a business and customer standpoint)—will reap the greatest benefits and have a greater likelihood for success. If a company doesn't fully understand the business challenge they are addressing and the results they expect, it will be difficult to measure the return on investment or to achieve any kind of useful metrics that signify the success of the project. However, if the self-service design flows naturally from the business objectives of

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the company in a way that attracts and delights customers, the rewards—in terms of financial returns, branding impact, and customer satisfaction—are likely to be significant.

For more information about intelligent kiosk design for retail establishments and other public venues, visit: www.planar.com/retail

About the Author

Jennifer Davis is director of the retail business at Planar Systems and has employed user-centered design concepts consulting on corporate Web sites, ecommerce initiatives, and application user interfaces at Planar, Pierian Spring Software, and Intel Corporation. She would like to thank Gary VanNice, Hal Newton, Cindy McCullough, Michael Metschan, and other Planar colleagues for their feedback to this white paper and for contributing their experience working with retail and touch clients.