



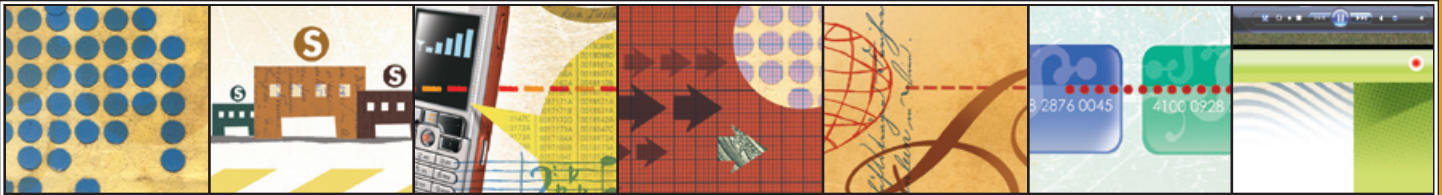
THE KEYNOTE

# Benchmark

*The Mobile & Internet Performance Review*

PERFORMANCE AND USABILITY:  
CONNECTING WITH CUSTOMERS ON THE  
NEW INTERNET

VOLUME 1, ISSUE 1  
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## KEYNOTE®

*The Mobile & Internet Performance Authority.*

Dear Fellow Executive:

Welcome to the inaugural issue of *The Keynote Benchmark*, a high-level intelligence report for every executive and manager who is involved in online strategy and execution, or whose organization depends on a successful Web presence. That's just about all of us.

For years now, we've been testing, measuring and monitoring the online performance of some of the world's leading organizations. In this issue, we look at how Web and mobile performance and usability have become even more critical to overall customer satisfaction, and ultimately your success.

A lot of people are talking about "Web 2.0." Some dismiss the term as just a catchphrase. But by any name, everyone's business is and will be affected by this wave of new technology that includes rich Internet applications, broadband content including streaming media, social networking, user-generated content, and the continued growth of the mobile Internet. The overwhelming challenges these radical changes present for usability experts and Web operations teams are just beginning to be truly appreciated.

In this first issue of *Benchmark*, you'll meet usability and performance experts from Yahoo!, Fidelity Investments, MauroNewMedia, MobiTV, Akamai, PowerReviews, and others. You'll get a glimpse of how these organizations are adapting to and leveraging the latest technologies. And you'll see how consumers react to Web sites in the important brokerage and wireless industries.

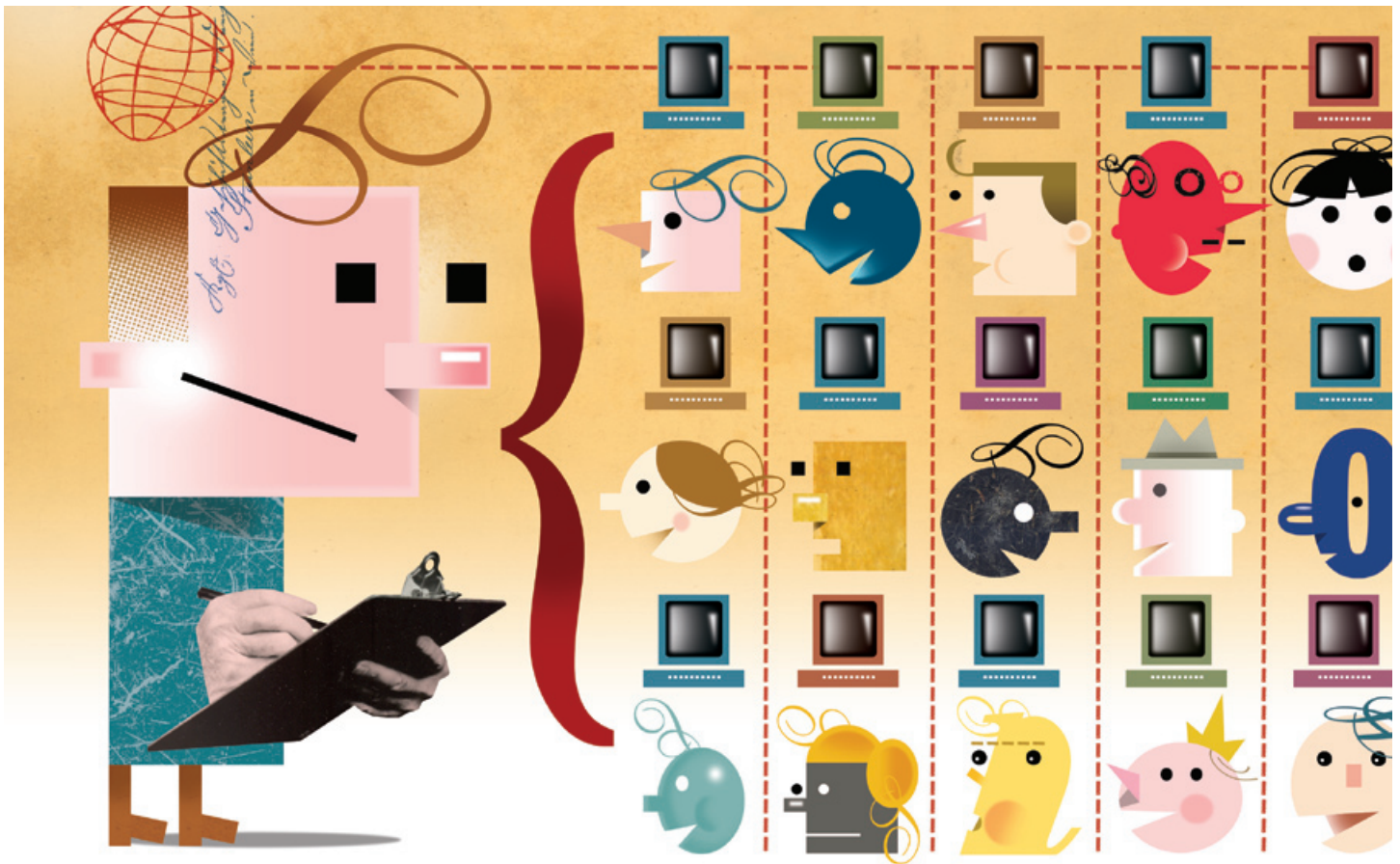
One comment in this issue that really says it all was made by Paul Graham, senior vice president, retail brokerage at Fidelity, who said, "Fidelity is a financial services firm, but we're also a technology firm." That really sums up the challenges faced by most successful companies operating today. Leading organizations realize that it is no longer good enough just to have a Web site or a mobile presence. Staying on top of the technological aspects of the evolving Web and mobile worlds is like running an entire business in and of itself.

Our goal for *Benchmark* is not to provide all the answers, but rather to highlight the rapidly evolving online world and the ways in which businesses are meeting its challenges.

We hope you enjoy this issue and we look forward to forging an ongoing relationship with you as the magazine evolves right alongside the online medium that is its focus.

Best Regards,

Umang Gupta  
Chairman and CEO, Keynote Systems



# Customer Experience 2.0: Designing for a Demanding, Distractible User

*Social networking and the interactive tools of Web 2.0 are enabling the creation of highly useful, personalized customer experiences. But only a carefully orchestrated research program can shed light on what users really use and want — and the results are often surprising.*

Point your mouse and click. Chances are, just about any significant Web site you land on doesn't look like last year's — or even yesterday's — Internet anymore. It's personalized, interactive, multimedia, and social in ways it never was before. There's a fair amount of debate around what exactly defines "Web 2.0," but there's little disagreement that the Internet is in the midst of a fundamental transformation from a relatively passive (if massive) information medium, to a fully interactive, intertwined, interpersonal tool playing an increasingly central role in our personal and business lives.

It's a different digital landscape than it was just a few short years ago. Somewhere around the turn of the millennium it reached the tipping point, when the critical mass of corporations and organizations established their Internet presence. Back then, screen size, Flash capability, and connection speed were the principal technological considerations. The customer/user experience question was still



## If you want to end with an outstanding customer experience, you have to begin with a thorough understanding of customer expectations, motivations, and behavior.

open-ended, because it was uncertain exactly what sort of experience customers sought, aside from finding information and conducting basic transactions.

Today, the stakes are much higher and businesses are scrambling to find their place and stake their claim in this new landscape. A whole new suite of Web tools are available to help craft next-generation Web sites. Most importantly, customer/user expectations for an efficient, productive, and enjoyable Internet experience are higher than ever.

Most organizations now recognize that their Internet presence is far more important than they imagined when their sites were built just a few years ago. Then, for non-e-commerce businesses, a Web site was often considered a mandatory exercise to be handled by the IT and corporate communications departments, important but not central to the business strategy. Today, the Web site has become a centerpiece for brand-building, customer development, marketing, and revenue-generation — a darling of marketing departments that has spawned a cadre of specialists. Some organizations are evolving their sites into the next generation one component at a time; others are blowing them up and starting over from scratch. Whatever the strategy, one age-old business maxim has asserted itself loudly and will not be ignored — the customer, or in this case, the user/customer, is king and queen, and success in the online world depends on keeping them satisfied.

### CUSTOMER EXPERIENCE DEFINED

“We begin with men and women and we end with them,” wrote Henry Dreyfuss, the legendary industrial designer, in his book *Designing for People*. “We consider the potential users’ habits, physical dimensions, and psychological impulses.”<sup>1</sup> Dreyfuss’ essential design tenet — to take the measure of the person before you create the measure of the machine — is referenced by his protégé, usability expert Charles Mauro of MauroNewMedia, to emphasize that the very first step in any Web site design initiative is to meticulously study the customers and their needs.

“The single largest mistake,” Mauro says, “is creating extensive Web-based experiences without sufficiently understanding the users’ needs and expectations and matching those to the business objectives.” In other words, if you want to end with an outstanding customer experience, you have to begin with a thorough understanding of customer expectations, motivations, and behavior.

A recent issue of *Harvard Business Review* defined customer experience as “the internal and subjective response customers have to any direct or indirect contact with a company.”<sup>2</sup> Certainly in the digital age, interacting with a company’s Web site is a direct and significant contact that has an increasingly important impact on the bottom line. In its most basic sense, that interaction consists of navigating through the site and successfully acquiring information or accomplishing tasks. The quality of the experience depends on a

host of factors, from how well and fast the site functions to the organization of information, navigational ease, tools, and the subjective mix of design and usability that makes a site enjoyable to visit. All of these factors add up to an experience that either converts prospects and generates a buzz of recommendations, or sends them off to a competitor’s site.

### GETTING INSIDE THE CUSTOMER’S HEAD

Longstanding Web portal leader Yahoo! employs a comprehensive suite of research tools to understand the mindset of users and how they interact with information and the Internet. Yahoo! starts at the most fundamental level, looking in on people’s day-to-day navigation of their own individual information ecosystems.

“We go into people’s homes, we go to libraries, we go to Internet cafés and Starbucks,” explains Klaus Kaasgaard, Yahoo! vice president of user experience research, “to learn what people are actually doing — whether it’s the Post-it note they put on their monitors, or the notes they write here and there, whatever material and social information resources people use besides the Internet. You really have to think of it as a total ecosystem of which the Internet is just one part. We need to understand how the Internet — and most specifically the products we’re developing — fit into that ecosystem. You can really only do that by observing people in their natural context.”

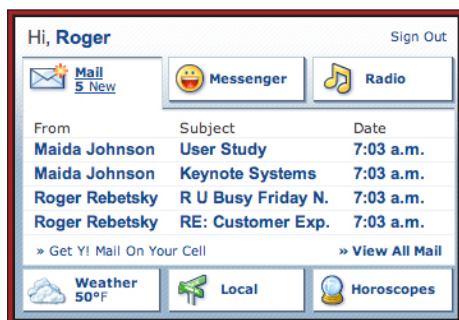
This very first phase, which Kaasgaard refers to as the formative phase of research,



For registered Yahoo! users, the new Yahoo! Personal Assistant puts important personal information just a mouse rollover away.



Roll over your Yahoo! weather button and the two-day forecast pops up — no click required.



Roll over your Yahoo! mail button, and the most recent inbox messages are displayed, so you can see if any important mail is waiting without going to the inbox.

helps identify the pain points in a user's information quest, and stimulates ideas for how to move barriers and make the experience more pleasurable for users. From here, Yahoo! explores and refines a series of prototypes, testing first in their usability labs, and then going outside to research them with a larger sample of users. Kaasgaard emphasizes the importance of collecting both behavioral and self-reported attitudinal data at this phase.

## Web sites have become a centerpiece for brand-building, customer development, marketing, and revenue-generation.

For this he credits Keynote Systems, a provider of Web performance as well as customer experience/user experience test and measurement tools, with being able to uniquely segment and deliver this data across a large sample of users.

"We're able to look at most behavioral and attitudinal outcome measures," he elaborates, "and to aggregate those very specific measures into an overall assessment summary of the quality of the user experience. And we're able to do so in a repeatable way and in a way that allows you to make comparisons with competitors in that particular domain."

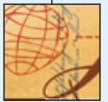
Users visiting their personal Yahoo! home page today can see the results of this comprehensive customer experience research in the form of added "personal assistant" functionality. Enhanced information accessibility, for example, leveraging DHTML and AJAX technologies, allows users to roll over their email account listing and see their most recent emails without actually jumping to their email page. Similarly, users can see who's on Yahoo! Messenger, and view weather and other localized information, again, all without leaving their home page. The email application itself has been completely revamped to make it more like a desktop application than Web site email.

"We just need to understand where people run into problems with the task they're trying to do," Kaasgaard summarizes, "and the goals they have. That empowers us to start thinking about what we can do to move that barrier to make this more effective for people, to make it more pleasurable."

### THE SOCIALIZATION OF THE ONLINE EXPERIENCE

Blogs, Myspace, virtual worlds, YouTube, consumer reviews — the phenomenon of social networking in various flavors has swept the Web like nothing before. Organizations of every description are scrambling to figure out how to leverage social networking to boost their reach and revenues. Corporations are building blogs and hoping, "they will come." Businesses are creating storefronts and properties in Second Life, including a \$10 million investment by IBM.<sup>3</sup> Hotelier Bill Marriott has a blog. Barack Obama launched [my.barackobama.com](http://my.barackobama.com) simultaneously with the official announcement of his presidential bid, complete with full social networking functionality including friend networking, personal profiles, personal blogs, and buttons for Flickr, YouTube, Facebook, and PartyBuilder right on the home page.

Social networking was the big Internet news in 2006, and will continue to dominate the headlines in 2007. For Web communicators, it presents one of the biggest challenges to date, both from a conceptual standpoint and for creating and evaluating the user experience. It's one thing to understand how a user interacts with a particular widget or navigation scheme. It's quite another to grasp how they approach making social connections in a digital or virtual world, and what etiquette and taboos may govern their interactions with each other and the sponsoring site.



## RESEARCHING AND TESTING THE CUSTOMER/USER EXPERIENCE

Just as the tools and technologies are evolving to make Web 2.0 possible, so too are the tools and technologies evolving to better understand user motivations, expectations, and behavior. Focused research and testing invariably reveals usage patterns and behaviors that might never have been anticipated by design teams or revealed by traditional research.

**Usability Labs.** This tried-and-true methodology gives an up-close view of user behaviors, as groups of users are brought into a lab and observed as they perform appointed tasks. It's personal and allows direct questioning of the users. The major drawback of usability labs is sample size and composition. Like a focus group, a sample of 10 or 12 users will never be statistically valid. And sites with upscale customers, high-level executive users, or international audiences are challenged to put together even small group studies.

**Web Analytics.** At the opposite end of the spectrum, Web analytics is a statistician's dream, offering the ability to track virtually every click of every user on a site. User paths can be traced, as can time spent on any page, and user drop-off points. The drawback of Web analytics alone is that neither the demographic identity nor the user's motivations for their behavior can be known.

**Web Effective.** Keynote's Web Effective technology synthesizes sample size and selection, click analysis, and direct user feedback. For a sample typically in the range of 200 to 500 users, a study is fielded by invitation, enabling selection of users in the appropriate demography and geography. Because the study is conducted online, users can be located anywhere in the world, which is particularly important for sites with international presence. Users are given tasks to perform on particular sites, and throughout their experience, a software tool polls them about their choices and reactions. The tool is logic-driven, so the questions are tailored to each user's activities and responses. Users can be tracked on any site, making effective competitive studies possible. The study returns a rich set of data about the users and their experience — who they are, what they did, and how and why they did it.

**A Three-Step Approach.** Charles Mauro of MauroNewMedia describes three essential phases for researching and building an effective and successful user experience.

The first is defining the business problem that the user experience is expected to address. "It's staggering," Mauro muses, "how many multimillion-dollar e-commerce development efforts do not have clearly articulated business objectives. And almost none have business objectives that are specifically mapped to the performance requirements of the user experience."

The second phase is creating and testing the solutions that address the customer experience. That testing includes hundreds or even thousands of users, as was the case recently when Mauro researched a critical new site for a major media company, using Keynote methodologies.

Mauro explains, "We know from the research we've done with a few thousand respondents, what really turns them on. And we know it from a motivational point of view; we know it from a psychological point of view. We also understand what pieces of the total experience have the greatest impact — on retention, for example.

"This allows us to develop design concepts or user experience enhancements that address that specific business problem without wasting lots of money on things that all the executives think are relevant, but actually are not in reality."

The third phase is "continued highly iterative testing of new ideas." Mauro points to the philosophy of iconic industrial designer Raymond Loewy, to whom he once was personal design assistant, to describe this ongoing phase: "Once you're done, start over again."

"The big story of 2007 is understanding exactly why the social networking concept and its related execution in some forms is so successful," observes Charles Mauro of MauroNewMedia. "Three hundred and twenty thousand individuals sign up for a Myspace account every day. Why does that happen? No one has the hard research data to make effective decisions on how to optimize social networking as a delivery concept from a business point of view. This year's going to be a learning experience."

MauroNewMedia's recent work with a major, disease-focused nonprofit society has uncovered how significant the social networking phenomenon can be, and what a difference its proper positioning can make to users and to the success of the site. The society's site is an exhaustive information resource for all aspects of the disease, and also host to a thriving message board that carries hundreds of thousands of messages. What the Mauro research found is that the greatest impact on patient outcomes comes not from the wealth of research and informational documents on the site, but from the postings on the message boards by other patients.

"What we found," Mauro elaborates, "is that as long as your message board allows the proper focus, it gives the newly diagnosed patient far more access to reliable information because they connect immediately with other patients who have the same diagnosis. What's really happening on these message boards is a synthesis of all these personal experiences by other patients impacting newly diagnosed patients."

The research gathered by MauroNewMedia, including studies done with Keynote, is informing the design update for the society's Web site. In addition to moving the message board link from its obscure location two menus down all the way to the top, new functionality is being built right into the home page to shepherd new visitors into the interactive area.



“The dialog box on the home page for newly diagnosed patients says, ‘Type your diagnosis here,’” Mauro explains, “and an online moderator will put them into the correct message board.”

User research also uncovered that newly diagnosed patients almost always ask three out of six typical questions. The new site makes an immediate, upfront provision for capturing these questions and using them to guide the visitor’s search. “Right away,” Mauro says, “we know that their interaction with the message board and the information delivery system is going to be truly an order of magnitude more effective from the very first interaction.”

In the end, Mauro concludes, “the social networking insight for the customer experience is that it’s the dialog, the human dialog that creates insightful relationships, and the desire to continue the dialog.”

#### **A WEB BY THE PEOPLE, FOR THE PEOPLE**

From its earliest days, the Internet has been guided and in some cases even governed by the collective voice of its users. Information, news, and reactions of every sort spread literally at the speed of electricity. With the dawn of Web 2.0, new paradigms are emerging for the communal dimension of the Internet, and community is playing a number of roles.

On the most basic level, social networking is exactly that — socializing over a network, whether it’s one-to-one on chat, or one-to-many on Myspace, Flickr, or the like. But on more utilitarian levels, users are engaged in collecting, refining, vetting, and disseminating information that is useful to the community at large — the Wiki sites, for example, and the user-powered news sites like Digg.com. On these sites, the users determine what is most relevant, and what will rise to the top. Another iteration of this dimension is

the collection of user feedback by a host of mechanisms, from customer reviews and ratings to blogs.

One characteristic of these phenomena is that information is traveling from the bottom up, or side-to-side, rather than from the top down. Yahoo!’s Kaasgaard describes folksonomies and taxonomies when he talks about the idea of users tagging content to identify its relevance.

“Tagging is certainly a technology that allows for structures of information to be created from down up,” Kaasgaard explains, “rather than having professionals — librarians or designers, for example — determine an information architecture. Tagging is a type of information structure known as a ‘folksonomy,’ as opposed to a taxonomy which is professionally created. The phenomenon happening today is that we are using technology to build an infrastructure through which a social system can emerge that, in this case, allows people to pull out the information that they consider particularly relevant and interesting for them. And Yahoo!, being a network of information, has a huge number of assets that will fit very well into this whole philosophy of the Internet.”

#### **SHOPPING FOR A BETTER CUSTOMER EXPERIENCE**

New technology is also turning the experience of online shopping, typically a solo activity, into a socially informed one, if not the truly social experience it is in the offline world. Customer reviews,

made ubiquitous by Amazon.com and later by iTunes, are now familiar content on most major shopping sites. But it usually takes some drilling down through a series of reviews to find those that are helpful — meaning reviews that describe the characteristics most important to the shopper — posted by individuals with similar evaluation criteria.

PowerReviews has rolled out new technology to significantly enhance the shopping experience by providing highly relevant social feedback, and as a result, giving a real boost to online retailer revenues. The technology uses tags, rather than just free-form comments, to collect and consolidate customer feedback on products and services. Users select from sets of response choices, and then have an opportunity to provide free-form comments as well. The data is then consolidated and summarized for the shopper.

“This type of social navigation enables the shopper to use other customers’ feedback,” explains Darby Williams, vice president of marketing for PowerReviews, “on pros, cons, and best uses, and narrow down their list to a limited set of products that they can really dive into and decide which to buy. An amazing number of people use this to eliminate the cons; their decision-making process is largely about ‘I don’t want to buy the wrong thing.’ Say you’re going on a camping trip in a certain kind of climate, and you need an outdoor jacket. You don’t want to be stuck out there with the wrong one.”

**On the most basic level, social networking is exactly that — socializing over a network. But on more utilitarian levels, users are engaged in collecting and disseminating information to the community at large.**



PowerReviews tested its approach in a head-to-head comparison with Amazon, using Keynote's WebEffective online research tool to conduct a study with a sample of more than 400 users. The study pitted the standard Amazon site with its reviews against a cloned Amazon site with the PowerReviews version of reviews inserted. The feedback solidly validated the PowerReviews approach.

The revenue implications of tagged review technology for retailers are significant. It provides continuous feedback not only on which products offer the most potential, but also on which words resonate most strongly with consumers to motivate them to buy those products.

"There's a notable increase in conversion rates," Williams relates, for sites using PowerReviews technology, "in the order of 10+ percent. So your conversion rate can go from say, 2 percent to 2.2 percent. We're able to say this is a considerably better approach than anything else out there."

## IN THE END, USER EXPERIENCE IS ELUSIVE

User experience is a target that moves both with the needs and expectations of users and with the technologies available to serve them. Whether it's giving users fast and easy access to the personalized information most relevant to them, or quickly connecting them with other like-minded people with similar experiences and priorities, the key success driver is to start with comprehensive, insightful research to understand what motivates users and how they behave, and then to test the solutions for relevance and effectiveness. Especially in the emerging era of the social Internet — for which little research, understanding, or best practices exist — user input and feedback are key. Ultimately, that feedback will occur, in the success or failure of the site itself. ❏

# User experience is a target that moves both with the needs and expectations of users and with the technologies available to serve them.

**PRODUCT REVIEWS SUMMARY** ( Powered by PowerReviews.com )

**Avg. Customer Rating:** ★★★★★ (based on 18 reviews)

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Customers most agreed on the following attributes:

- Pros :** Nice Features and Settings(18), Accurate Colors(17), Great Resolution(17), Rugged(16), Simple Controls(14)
- Cons :** Complicated Controls(3), Not Good In Low Light(3)
- Best Uses:** Outdoors(16), Portraits(15), Everyday(14), Travel(14), Sports/Action(13)
- Describe Yourself :** Hobbyist/Enthusiast(13), Professional(6)

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**REVIEWED BY 18 CUSTOMERS**

Displaying Reviews 1-10 of 18

★★★★★ **Nikon D200**

By **Mark** VERIFIED PURCHASER from **Miami, FL** on **2/18/2007**

- Pros:** Accurate Colors, Great Resolution, Nice Features and Settings, Rugged
- Cons:** Complicated Controls
- Best Uses:** Everyday, Low Lighting, Outdoors, Portraits, Sports/Action, Travel, Weddings/Events
- Describe Yourself:** Hobbyist/Enthusiast
- Bottom Line:** Yes, I would recommend this to a friend

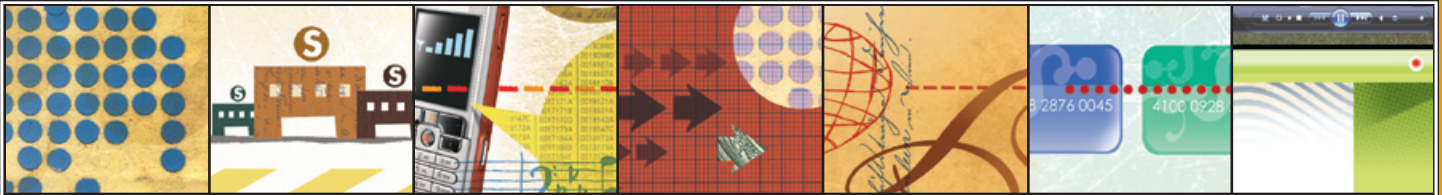
My first digital, but I really like it. Still getting used to digital world. Compliments my F5 nicely.

Was this review helpful to you? Yes/No - You may also flag this review.

With PowerReviews, consumers not only give their rating and freeform comments, but also select pros, cons, and best uses, which are compiled in the review summary.

## ENDNOTES

- <sup>1</sup> Henry Dreyfuss, *Designing for People*, Allworth Press, November 2003, p. 219.
- <sup>2</sup> Christopher Meyer and Andre Schwager, "Understanding Customer Experience," *Harvard Business Review*, Vol. 85 No. 2, February 2007, p. 118.
- <sup>3</sup> Michael Fitzgerald, "Does Your Business Need a Second Life?," *Inc. Magazine*, February 2007, p. 83.



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Parrish Arturi is responsible for channel oversight and management of the customer experience on [www.fidelity.com](http://www.fidelity.com), Fidelity's primary consumer Web destination, as well as management and development of Fidelity's wireless and automated phone channels. Arturi and his team are tasked with delivery and execution against channel sales and service goals, as well as ensuring competitive leadership and differentiation of Fidelity's consumer offerings. Arturi holds a B.A. degree in Economics and an MBA, both from Wake Forest University.

### Thierry Curis

Streaming Product Manager  
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Thierry Curis is responsible for bringing to market new solutions and services that enable businesses to deliver digital media to a wide range of PCs and IP-enabled devices. He has directly contributed to enabling the success of many first-time digital media events, such as the Tour de France and the 2004 Olympics. Curis is a graduate engineer in Computer Science and Telecommunication from the Ecole Nationale Supérieure des Telecommunication in Paris.

### Paul Graham

Senior Vice President, Retail Brokerage Product Development  
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Paul Graham is responsible for the strategic direction of Fidelity's retail brokerage business, and oversees all related product development efforts, in addition to Active Trader capabilities through Fidelity's online channel. Graham holds a B.S. in Finance from Long Island University and an MBA from the University of Dallas.

### Kay Johansson

Chief Technology Officer  
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As CTO, Kay Johansson drives the creation, development and deployment of mobile television technologies on mobile devices and personal computers over the broad array of networks. Prior to joining MobiTV in 2006, Johansson served as the CTO of Popwire, a former Ericsson company, where he led development and product strategy.

### Klaus Kaasgaard

Vice President of User Experience Research  
Yahoo!

Klaus Kaasgaard is responsible for all user experience research activities at Yahoo! He is author of the book, *Software Design and Usability*, as well as numerous articles and peer-reviewed papers. Kaasgaard holds a Ph.D. in Human-Computer Interaction from Aalborg University in Denmark.

### Charles Mauro

President  
MauroNewMedia

In 1975 Charles Mauro founded MauroNewMedia, a leading provider of professional usability engineering and high performance user interface design consulting services. Prior to forming MauroNewMedia, Mauro worked personally with product design pioneers Henry Dreyfuss and Raymond Loewy. Mauro is a Certified Human Factors Engineering Professional CHFP/BPCE, and holds a Masters Degree in Ergonomics from New York University.

### Darby Williams

Vice President, Marketing  
PowerReviews

Darby Williams is a high-tech marketing veteran with more than 20 years marketing and product management experience in the software and Internet industries. Williams led the launch of the multimedia computing platform at Microsoft, drove widespread developer adoption of Windows 95 at its launch, and started the first online meal solutions delivery service. He holds a B.A. from the University of Virginia and an MBA from the University of Chicago.

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