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# Microreport

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3Com's Audrey:  
Casualty of Compromise

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During the period scientists refer to as the 'Cambrian explosion,' life on earth took on radically new forms. Nearly all of the major groups of animals we see today arose at that time—some 540 million years ago—with much of the evolutionary innovation taking place over as little as five million years. During the dotcom boom years, the Internet appliance market saw a similarly dramatic evolutionary surge. Consumers were deluged with so-called 'post-PC' products as diverse as Internet-enabled refrigerators and stand-alone email stations. As late as mid-2001, IDC predicted Internet appliance shipments would rise from 235,000 worldwide in 2000 to 5.5 million units by 2004. Dallas-based Parks Associates produced an even more optimistic forecast of 52 million units by the same out-year. Needless to say, these forecasts have proven woefully mistaken. Unlike the descendants of many Cambrian Period animals, few of the Internet appliances launched in the last few years are around today.

One of the most highly publicized casualties was 3Com's Audrey, a kitchen-counter Web tablet that debuted in October 2000. The device was among the first Internet appliances pitched to a broad consumer market. It's a compact device, no bigger than

three inches thick and nine-and-a-half inches high, with a color screen about six inches by five inches. It sports a wireless keyboard that neatly hangs on the back. Designed for the 'nerve center' of any home, typically the kitchen or family room, Audrey has a manual knob

for dialing through a selection of favorite Web sites, a touch-screen stylus that glows green whenever the user receives new email and the ability to synchronize with two Palm-compatible handheld organizers.

Audrey makes good on the promise of more humane interfaces in post-PC devices. Compared to a traditional desktop or laptop computer, it's easy to use for surfing the Internet. To access the Internet, the user simply presses a button labeled 'Browser' and the device dials up the service provider. The user can use the stylus or keyboard to navigate. Audrey's selector knob, similar to a radio dial, provides ready access to 12 pre-selected Internet channels that scroll along the bottom of the screen like a filmstrip. When the user stops turning the dial the chosen channel appears on the screen. The device's built-in 56K analog modem periodically connects to the Internet, downloads and stores the relevant information in memory, then disconnects. The

innovation is limited to modest enhancements to increasingly optimized designs. Although Audrey never made it to a second-generation, the concept addressed a critical (and still mostly unmet) consumer need—just not in a broadly satisfactory way. In the final analysis, the product was the victim of conflicting design criteria that future enhancements may have resolved. As usability guru Don Norman, author of *The Invisible Computer* (1998) told us, "They [3Com] did a very good job [with Audrey]. They had several problems with their product, but 3Com pulled it before there was enough time to make it work."

IDC analyst Bryan Ma reads 3Com's foray into Internet appliances as a bold attempt to apply its strengths in networking components to the home technology market. He says Audrey's demise is part of a larger tale about 3Com's financial outlook, especially increasing shareholder pressure to dissolve unprofitable

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user can control how often this happens, choosing to refresh the channels up to five times a day.

Citing disappointing sales, 3Com abandoned the product only five months after launch; in fact, the company cancelled its entire line of Ergo Internet products, including the Kerbango! Internet radio and a Webcam. This same period saw 3Com downsize its workforce by a third and shed about US \$1 billion in operating costs—all designed to preserve the networking product giant's stock value. The circumstances surrounding Audrey's demise, however, threaten to obscure some key takeaways about what it takes to succeed in nascent markets, particularly the volatile home technology market.

During periods of intense innovation, a wide variety of first types arise and summarily die away. In the early years of a product category, it's easy to find profoundly different variations. Remember the multiplicity of Web portals in, say, 1997? More than anything else, the first products in a category provide a chance to learn about consumers' experiences in order to make incremental improvements. In later years, once companies have largely satisfied consumers' demands for functionality,

portions of the business. "I don't blame them [3Com] for getting out," he says, adding consumer hardware is a low-margin business that requires moving a large volume of units. "In order for companies to succeed," he notes, "they've got to try different ideas." The Darwinian forces of selection and variation that dictate survival in the natural environment also account for survival in the marketplace as well. The greater the variation or, in this case, product innovation, the greater the chance of coming up with a successful new product.

There are a number of strategies companies can adopt to improve the likelihood that new products will succeed; chief among them, target a segment of the market underserved by existing products. According to Don Fotsch, the former general manager and vice president of 3Com's Internet Appliances Division, the company focused on female heads-of-household as 'home managers.' Fotsch, who took the product from concept through production, says Palm customers were the primary target, with broadband and PC households representing secondary and tertiary targets, respectively. The penetration strategy, reveals Fotsch, was to saturate the Palm vertical, then migrate the product to a broader base.

The central idea behind Audrey was to provide a fun, convenient alternative to the PC for family scheduling, email communication and general information. "Once we did the homework in terms of what types of tasks would be useful in people's daily life then we drew up some prototypes and talked about what the thing would do: deliver Palm for the home and support tasks that happen in the nerve center—organizing, communicating, shopping and getting information." Internet appliances, says Fotsch, are "all about getting things done." He contrasts this notion with traditional home networking. "Networking is what people do at work and you can't make the case that people have a full-time IT person for the home," he says. "But if you ask, 'Would you like to be able to push a button and see all the activities for your kid at school next month? Or, the swim meet times? Directions to the soccer game? Or, pull up a menu at a local restaurant?' Then they say, 'Yes.'" With Audrey, the aim was to bring a unique combination of Web and Palm functionality into a communal space.

Our own research suggests that, conceptually at least, Audrey made sense. In a recent survey for Internet Home Alliance, a consortium of leading high-tech and consumer goods companies, Zanthus found a broad-based desire for a number of Audrey-like functions. For instance, the survey of 450 US households showed that 56% of early-adopters and 40% of so-called 'mass market' consumers consider an online family calendar 'very desirable.' These numbers present strong evidence that, given the right configuration, Audrey's shared calendar could have been a powerful selling point.

The company relied on more than 60 ethnographic studies and customer data from Palm, a 3Com subsidiary at the time, to develop the product's feature set. As part of this research, 3Com was able to draw some universal conclusions about its market. "Of the 64 homes we went into, not one said, 'Everything's organized; we find it easy to find everything we need. We're completely under control and this is a low-stress environment,'" Fotsch explains.

Accordingly, 3Com attempted to match features with discrete consumer needs. For example, the company found that many consumers watch local evening TV news primarily for the weather forecasts. Viola! The company equipped Audrey with a convenient dial for accessing local weather forecasts via the Web. The unit's 12 pre-set Web sites include a weather channel configured to show the local forecast based on the user's Zip code (captured during the online registration process). "We found that people sit in a room where the TV is—unless they live in California—for the last hour of the waking day to hear a forecast," Fotsch explains. "They're vegging

out while the evening news is on and all they listen to is the weather."

With Audrey, 3Com also tried to improve email communication from the home. Audrey periodically connected to the Web (up to five times per day, depending on the user's preferences) and a blinking green light alerted users to new mail. This function was intended to be a time-saver for users who would otherwise have to boot up their PCs and connect to the Web—all without knowing if they had any new email in the first place. "You don't have to think about how you're going to shut down the telephone," adds Fotsch. The idea, he says, was to make using email much like using any other household tool rather than a "planned activity."

IDC analyst Ma says he enjoys the convenience of recording tidbits of information using his Audrey, whether using the device's stylus as a pen, recording voice-messages by speaking into the unit's built-in microphone or typing out messages on the wireless keyboard. "It's very convenient for quick blips of information and I can scribble notes with it," he says. He thinks the device is "very handy," but confesses he didn't pay US \$500 for it, either.

Like most first-generation technologies, Audrey was met with decidedly mixed reviews. On the upside, the device was praised for its ease-of-use, the absence of binding ISP contracts and its compatibility with PDAs using the Palm O/S. On the downside, the set-up tended to pose considerable difficulties. In a review for *Fortune* magazine, Peter H. Lewis said the first device he tested "giggled, froze and worked no more."

A reviewer for the Washington Post had a similar experience in connecting to the Internet, saying, "First, I tried with an existing dial-up provider, Audrey's default choice...With two different providers, it failed to negotiate a connection...It spat up, 'LCP error' or 'IP/TCP error.' I tried to set up an account with AT&T WorldNet...Again, no dice...My last resort—an account with EarthLink...succeeded after three more tries." He gave 3Com credit for "decent tech support," though, noting that all of his calls were "answered in a minute or so."

Two models purchased at auction sites by Zanthus analysts in fall of 2001 presented similar set-up problems. It's impossible to say if patches could have remedied what at least one software developer considered to be version-one glitches rather than full-blown bugs. Regardless, mass market consumers are far less forgiving than early adopters when products don't work properly the first time around.

Sometimes, the advantage of having a single device that serves a multitude of functions is ultimately outweighed by the apparent complexity of operating it. This is a case of bad design following from good intentions.

Companies sometimes forget that when calculating the benefit of multi-function devices, consumers typically take into account the time and effort required to learn how to use the new device efficiently. Most consumers would rather stick with a familiar, even poorly designed device, because they've grown accustomed to its inefficiencies and figure that, at least in the short run, they can use it faster and better than the alternatives.

Moreover, Audrey offers limited functionality in key areas. Even though it won plaudits for its unique Web channel selector, the device provides only 12 channels, half of which are pre-set to channels like ABC News, AccuWeather, ESPN and CBS MarketWatch. More importantly, the core family scheduling capabilities are unduly limited. First, the device accommodates only one email account and two Palm-compatible handhelds despite the fact it's ostensibly designed for the entire family, children included. Second, concerning scheduling, users lack an easy way to selectively exclude items to be transferred during the synching process, such as office meetings; instead, users are forced to delete calendar entries manually.

With respect to ergonomics, Audrey proved to be a literal pain in the neck. Although designed for the kitchen counter or even dining room table, the downward-tilting screen can't be comfortably viewed from a standing position. Users are forced to crouch to use it. This problem was belatedly addressed with the introduction of a wall mount accessory shortly before production was shutdown. In addition, at six inches by five inches, the screen is too small for Web browsing. To view a complete Web page, users have to scroll up and down, and left and right.

These kinds of functional constraints are common among emerging technologies. Few can recall the first-to-market remote control, released in 1950 by Zenith Electronics (then known as Zenith Radio Corporation) called 'Lazy Bones.' The device used a cable that ran from the TV set to the viewer. A motor in the TV set operated the tuner through the remote control. As you might expect, although users liked the convenience of controlling their TVs remotely, they complained about people tripping over the unsightly cable that meandered across the living room floor. Likewise, Audrey will soon be forgotten in today's accelerated product development environment.

Even if the product offered superior performance, Audrey was decidedly overpriced at US \$500 retail. This

price invited consumers to compare the product to low-end PCs, which for all of their shortcomings, are clearly more versatile than Audrey. Even some of the device's most ardent proponents decry the retail price. The Webmaster for one of some 20-odd Audrey user sites, Xtension.com, provides this perspective: "Audrey was simply too expensive and obviously ahead of its time...I don't want to spend a lot of time talking about the features of the basic Audrey, but suffice it to say that at US \$500, it was certainly a bit steep. But at US \$100, it's irresistible!"

What's more, the unit's feature set—while addressing some real needs—doesn't necessarily automate existing behaviors. One of the hallmarks of many successful products is that they simplify or otherwise enhance one or more current behaviors. TiVo and other personal video recorders, for instance, are designed explicitly to enhance the TV viewing experience. As Geoffrey Moore, author of *Crossing the Chasm* (1991) notes, "successful products automate behaviors that already exist. What is the behavior in the home you are automating [with Audrey]? The conversation Mom has with the kids as they're running out the door to school? That's not automate-able."

Just as the extinction of one phyla (or group) of animals doesn't mean the end of the entire species, the demise of Audrey doesn't mean the end of Internet appliances as a whole. From its cutesy name and dials reminiscent of old-style radios to its homey user's manual and kitchen counter placement, Audrey was rightfully designed to humanize computing. The late dotcom hype and the ensuing criticism of the era have emphasized the Internet's commercial potential at the expense of its social utility. Now, the Internet is on the cusp of becoming a household appliance whose applications are as much social as commercial. Eager consumers are just waiting for the right successor to Audrey to come along.



## MICROREPORTS

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