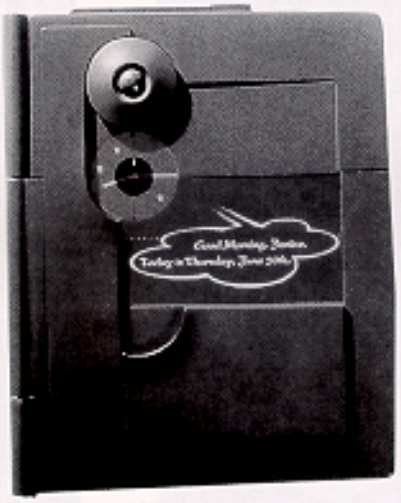
Desney Tan, CPEG '96

# Digital Dove

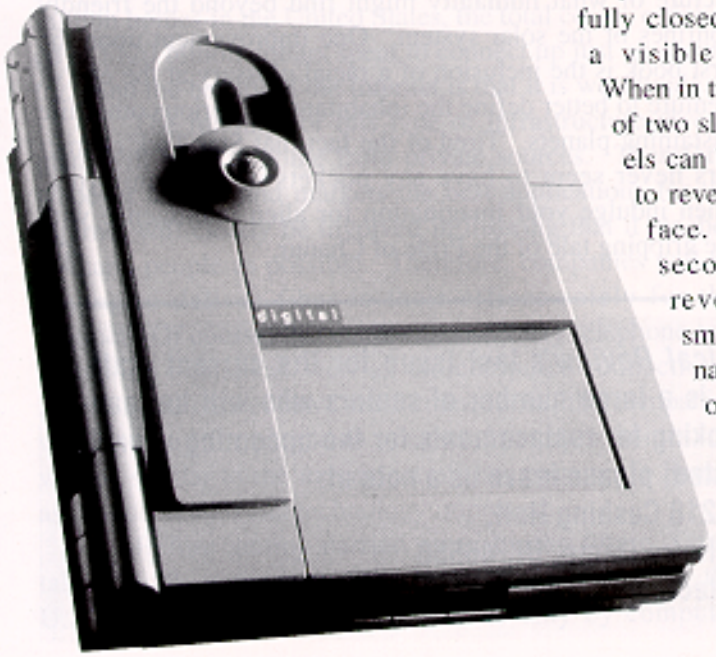
Digital Dove

In its first incarnation, the Digital Dove prototype was essentially a laptop that listens. When the project ended, Digital Equipment Corp. had a concept for voice-navigation computing derived from focused user situations, a concept that revealed meaningful, recognizable and relevant user innovations.

Digital Equipment's Alpha Business Unit had initially created the Dove concept to demonstrate the capacity of its new Alpha chip in innovative ways, including voice navigation. A video made to raise awareness of this capacity featured a mid-level executive interacting with Dove during a typical business day. Although the model and its video made a compelling promise, the effect was less than overwhelming. To strengthen the presentation, the Digital Group called in Fitch Inc.



The Fitch team found several shortcomings in the original design demonstration. While the laptop model's physical configuration was interesting, the voice interaction was stilted and unconvincing. The video showed no computer interface, nor were there audio cues or human-computer dialog that would suggest the conversational cadence of the interaction. Fitch quickly began its reevaluation and redesign of the demonstration.




When "off-duty," Dove can be fully closed, without a visible display. When in transit, one of two sliding panels can be opened to reveal a clock face. Sliding a second panel reveals a small illuminated screen on which Dove's user can check an agenda or monitor an incoming call. Throughout the interface are audio and visual feedback cues which complement meaningful conversation between Dove and the user. Dove shows it is paying attention with radiating rings on the monitor. Caption bubbles lasso Dove's messages to the user in cartoon-like balloons. Captions keep Dove from being intrusive when audio is not desirable and customizable typefaces add personality.

The speed of the Alpha chip for sound processing allows the integration of sounds that provide contextual background information. For example, when a user arrives back in the office and asks that a document stored in Dove be printed in triplicate and a copy faxed to another location, Dove recognizes it is "home" via on-board proximity sensors and triggers activities cued for Dove's return. Dove then provides audio or visual confirmation upon completion of its tasks.

Dove demonstrates how a compelling concept — voice-navigation computing — can be derived from a focused user situation, the mobile business user. It also demonstrates the application of a new technology in a way the reveals meaningful, recognizable, and relevant user innovations.

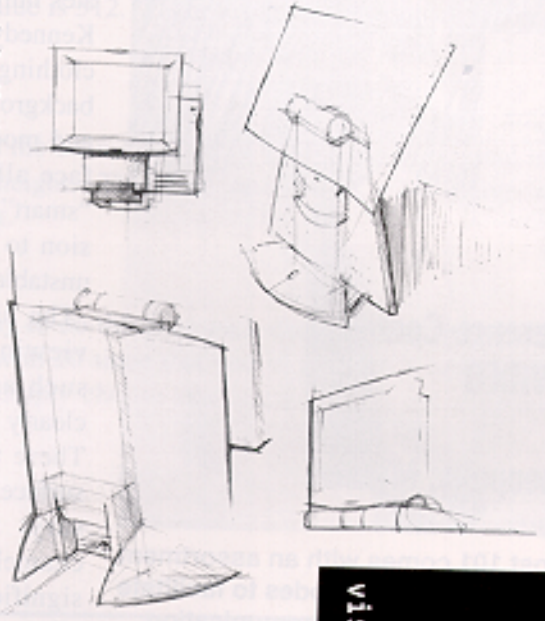
Picture 1: When in transit, Dove is protected by two covers. As shown in this picture, the circular microphone element slides to conceal an analog LED clock face. The rectangular panel with the nameplate slides down in the open mode.

Picture 2: The models and prototype interfaces of the Dove focused attention on the dynamics of the verbal and nonverbal interaction between the user and Dove.

# LCD Monitor Series

LCD Monitor Series

Amid the technological wizardry of today's multimedia workstations sits the CRT monitor, a cumbersome dinosaur based on pre-World War II technology. Ironically, while other computer components have shrunk dramatically in size over the years, CRTs have actually grown larger. The power and space they consume — and the heat, noise, and radiation they generate — make CRTs economically and ergonomically unfriendly. The time has come to trade up to LCD monitors.



Early concept sketches explore the interplay of planes and soft forms.

The benefits of LCD technology are legion: compact, lightweight, and energy efficient, flat panel displays emit no harmful radiation. They provide more data display per diagonal inch, better resolution, and full-color capabilities. Best of all, the proliferation of portable computers has familiarized users with the technology. The problem with realizing this concept in the past has been price. LCD product explorations have traditionally anticipated suggested retail prices that were prohibitive ($10000 and up per unit). Thus, cost efficiency was a major concern of Design Edge all the way through this LCD development venture. At the end of the project, the target of $1500 suggested retail price per unit was attained (based on production estimates).

In addition to the obvious target market of high-end corporate users, new opportunities have been created by the technological breakthrough of combining plug-and-play functionality with LCD media. Design Edge has, in conjunction with this project, secured exclusive rights to new, proprietary firmware that allows an LCD to be simply plugged into any Macintosh or PC for use. This eliminates the expense and inconvenience of adding video adapter boards or driver software. Based on industry-standard VESA specifications, the firmware automatically configures the display for optimal use with the CPU. As a bonus, the compact, low-power LCD components can accommodate new, highly integrated multimedia technology.

Essentially an information delivery system, the monitor needed to retain a sense of simplicity to support its rich content. In order to humanize the product and render it more approachable, the overall design direction lay in downplaying the display as computer equipment and emphasizing it as functional sculpture to be viewed in the round. The resulting design theme plays off crisp edges and soft arcs, with the convex back of the screen mirrored in the bowed shape of the vertical support. In the anticipation of users viewing and interacting with the monitor from all sides, the design provides "in-the-round" viewing and adjustment via an easily accessible lever.


Evolution of LCD monitors furthered by Design Edge Inc.

Building on the success of the LCD project, Deign Edge is now in the position to turn a concept exploration into a marketable reality. A working prototype is now being used as a basis of developing a full product line.

# SignPost 101

SignPost 101

Advanced design explorations are the greenhouse for ideas. Though we can never be sure of the eventual impact, their immediate value is to fuel the discourse that surrounds projects in development.

This concept shows the benefit of developing both hardware and software simultaneously to minimize product obsolescence in a field that promises innovation and change. SignPost 101 approaches the ritual and necessity of multi-platform communication from the realm of the chessboard.

The basic premise of what a telephone is and how it operates is universal. From its inception, the telephone has been a hardware driven interface with auditory feedback. In the near future, numeric entry will represent only one of multiple interface options. Voice recognition, touch screens, and multi-modal interfaces have spurred the development of many hardware and software solutions.

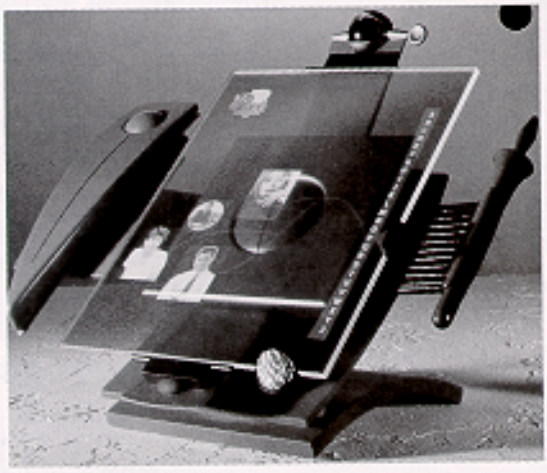

**SignPost 101 comes with an assortment of different operating modes to facilitate ease and efficiency in communication.**

Videophone transmission transports the viewer into a deeper world than is possible with a handset conference call. This opens doors and creates hurdles. As seen in the Nixon-Kennedy debates, the coloration of clothing and its relationship to the background can greatly alter clarity and mood. The SignPost 101 interface allows the customization or "smart" backgrounding of transmission to compensate for a noisy or unstable background.

The user selected textures allow viewing other communications, such as faxes and e-mail, while clearly presenting the party's image. These textures spill over onto the surface of the screen while unnecessary items fall away in a chameleon-like response. Various signifiers have been developed to allow for privacy and hierarchical concerns. The most dominant is the ability to put the transmission on hold. The receiving party sees the image mummify and unite with the background texture as the hold session approaches.

In its idle state, the display of SignPost 101 appears as an empty portal waiting to receive information. Data, flowing through the network, appears on the screen as a montage of abstract forms. These shapes indicate the presence of information while maintaining a level of privacy until accessed. As the capabilities of the system increase, additional shapes populate the screen.

By collaborating on advanced projects such as SignPost 101, we can begin to address the potential of the videophone as a communication tool. To effectively accomplish this task, it is paramount that we approach the development of these products from a holistic sense. By developing conceptual tools that suggest new ways of interacting with others, much can be done to reinforce the actions of the user.



**In its idle state, SignPost 101 displays data flowing through the network as a montage of abstract forms.**