VisualFlow a Media Browser

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ABSTRACT

This paper covers the development and design of a media browsing application, VisualFlow, for Sony's MemoryStick and VAIO Computers. VisualFlow has been an attempt to establish a new consumer oriented user interface. This new interface provides an enjoyable yet powerful framework for consumers to manage an increasing multitude of media files.

KEYWORDS

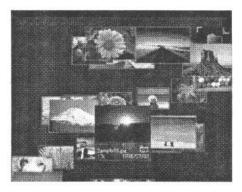User Interface, Media Browser, Consumer Focused, Media Management

THE PROBLEM

Computers have steadily shifted from just being an office tool to becoming a consumer electronics product. This shift is clearly reflected in the physical design and consumer acceptance of recent computers such as Apple's iMac. This consumer shift has not been equally matched in the design of user interfaces. It must be noted that many sites on the WWW have made significant progress in designing consumer-oriented user interfaces, yet there remains a gap in interconnecting the user's experience of the hardware and it's translation to the UI. VisualFlow, is part of a continuous consumer experience that matches a range of consumer hardware devices with an equal UI experience.

This shift towards consumers is coupled with the ever-increasing power and capacity of computers and digital media. Sony now produces a MemoryStick, the size of a stick of gum, which has a capacity of 64MB or about 300 digital images. This same MemoryStick can be used with a digital camera, video camera, Walkman, IC voice recorder, and soon mobile phones. The problem clearly stated is, "How do consumers manage all this media?" VisualFlow attempts to provide a direction towards addressing this critical question.

THE PROCESS

VisualFlow was designed at Sony's InteractionLaboratory,(IL) which is within The Sony Computer Science Laboratories Inc., (CSL).

The mission at IL is to advance the state of the art in user interfaces, while keeping close communication with the Sony business groups. From time to time this dialogue reveals the opportunity for the application of our research into a product, this was the case with VisualFlow.

VisualFlow has it's roots in the work of Dr. Rekimoto[1], Director of the Interaction Lab, and an earlier collaboration between Sony and the pioneers of PAD++[2]. Dr. Rekimoto has investigated an area of computing he has termed Time Machine Computing. Imagine that your computer has a dial for time traveling. With such a computer, when you create a document you can simply leave it on the desktop. If you later need to refer the previously created information, you can time-travel to the day when that document was on the desktop, this would help you to recall the activity context at that time.

CONCEPTS

Navigation, which necessarily implies dynamic motion, is central to both Time Machine Computing and Zooming. Our experience of navigation can be two ways, we can either feel as if we are going towards things or those things are coming towards us. This may seem no more than a subtle semantic difference, but how this difference is carried out in a user interface can consequently deliver two vastly different user experiences.

Another key aspect of Zooming is the idea of semantic scaling, that is that the representation of data might change accordingly with it's scale. Too often as user interface designers we ignore the inherent ability of time to convey

information. We attempt to inform the user of everything at once creating static and cluttered information spaces. Similarly we skip past the importance of displaying change or transition. We treat transitions as a way of getting from one information state to another, rather than an essential element in the user's construction of the information narrative.

VisualFlow draws it's cue from the idea of navigation, by having a relatively fixed focus framer in the center of the screen into which information flows. This in turn gives the user a strong sense of control and power. VisualFlow builds on time and transition to provide layers of information and give the user a clear sense of all that is happening.

THE DESIGN

VisualFlow is a media browser that let's a user browse digital pictures, sound files, and movies on their computer. It can be launched in one of two ways either by choosing the application through the OS or by simply inserting a MemorySitck into the computer. The auto-launch feature is intended to mimic the operation that is expected when you insert a MemoryStick into a digital camera or any other consumer device namely that you instantly see your media.

The next thing the user will notice is that there are no icons. Users are not interested in seeing proxies of their media they want to see the real thing, and at a size that is discernable. All of the media files are shown for what they are images as images and movies as movies. We have also implemented a visual representation of sound files. By directly translating a portion of the binary file with a color-mapping algorithm we create a unique color image for each sound file. The name of the file is then superimposed on this color image with a layout algorithm.

What the user sees is their media fill the entire screen except for a small interface bar at the bottom of the screen. This interface bar changes according to the context. It is primarily used as an interface for sorting and arranging the media being displayed. As The user's media is loaded in each file makes a dynamic entrance and takes a position on the screen as if it were part of a chorus line. This loading sequence is there to indicate to the user that this interface is dynamic and motion-centric.

New models of Sony's VAIO computer come with a built in jog wheel. This jog wheel, located on the right side of the keyboard, can be used to scroll the media files. The speed at which files move across the screen correlates to the amount of turning by the jog wheel. To move the files the user also has the option of using the arrow keys, clicking on any image, or panning the background.

The jog wheel can also be pressed in a direction perpendicular to the axis of rotation. This allows the user to select a file once it is centered in the focusing frame. Selecting the file causes it to magnify so as to give the user a detailed view. If the file is a movie or sound file selecting them also will cause them to start playing. One a single file becomes the focus a new set of file options is presented on the interface bar at the bottom of the screen. A second press of the jog dial de-selects the image and it scales down to it's original position.

When there are no files selected interface bar displays a row of arrangement icons to the left and a row of sort words to the right. The row of icons represents four varying arrangements for the media files, which are grid, circle, line and spiral. As the user clicks on one of these icons it slides to the center indicating that it is the current arrangement and the media files do a dance into the selected arrangement. Like wise the user can click on one of the words to the left and watch the files re-arrange themselves according to the sort parameter. This ability to vary the arrangement, sort, and navigate quickly through media files, goes a long way in making it easier and more enjoyable to browse a very large amount of them. The user is easily taken in by the pleasure of movement and transition.

Although we mentioned that VisualFlow will instantly display the media files on your memory stick once it is inserted into the computer, it is also able to navigate through the user's file system. As in the case of browsing through media files folders travel towards and away from the user by smooth zooming and fading. This gives an effortless and soft contrast to the typical hunt, double-click and drill-down navigation typical of file systems. In fact a user can change course in mid-stride something which seems so simple yet can not be found on most file systems. We believe that VisualFlow has to some extent pointed towards a rich direction for user interfaces. VisualFlow is based on dynamic motion and navigation using time to reveal information. It is an interface that does not hide in-between states but rather makes them transparent to the user including them in the process. Lastly VisualFlow attempts to couple the users physical hardware experience with the on-screen user interface experience. All of these points taken together offer a unique consumer oriented user experience.

REFERENCES

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