1990 Worldwide Developers' Conference

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Developer Services
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Application Directions
for the Future

The Information Nightmare

- Turning information into knowledge
- The computer is the ultimate simulation tool
- New technologies are the key

Today's Discussion Topics

- Historical Overview
- Sound and Text-to-speech
- Video and Animation
- Multiculturalism
- Simulation

Historical Overview

Visionaries of the Last 3 Decades

- Vannevar Bush
- Douglas Engelbart
- Ted Nelson
- Nicholas Negroponte
- Alan Kay

Historical Overview

HyperText

- A model for how we think
- More than just text
- A precursor of today's technologies

Historical Overview

Vannevar Bush

- 1945, "As We May Think"
- Extend man's mind power...
                    ...not his physical power

Historical Overview

Douglas Engelbart

- 1963, On-Line System (NLS)
- Augmenting man's intellect

Historical Overview

Douglas Engelbart

- The first mouse

Historical Overview

Ted Nelson

- XANADU – Unifying the global libraries

Historical Overview

Nicholas Negroponte

- Architecture Machine Group
- Free associating with your computer
- The Aspen Movie Map

Historical Overview

The Aspen Movie Map

- Associative linking in a simulated environment
- Integrated technologies

Finding meaning in more than words

"Visual forms – lines, colors, proportions – are just as capable of articulation as words. The most radical difference is that visual forms present their information simultaneously rather than successively, so the relations determining a visual structure are grasped in one act of vision." Suzanne Langer, 1957

Digital Sound

- Sound can be as visible as words
- Sound can create a mood, a time or a place
- 90% of the way we communicate is audio

Why not extend this?

Digital Sound

- More cute than useful?
- How do you keep sound from being intrusive?
- Exploring the use of natural sounds

Digital Sound

Interactive Spellchecker – Thunder II

- Getting more information out of your beeps

Digital Sound

Voice annotation – CE's QuickMail

- Turning E-Mail into Emotive-Mail

Digital Sound

Future Directions

- Emoticons?
- Friday panel: Extensions to the Sound Manager

Text-to-Speech

"Letting the computer talk behind your back."

Text-to-Speech

A comparison to digital speech

- 700 bytes versus 1.3 MBytes per minute
- Real time versus pre-recorded
- Remote access of documents

Text-to-Speech

MacInTalk

- Hard to understand
- Inhuman

Text-to-Speech

A new MacInTalk

- Experimental proto-type only
- Based on a human voice
- Customizable voices
- Localizable

Text-to-Speech

Markets

- Business
- Education
- Visually and vocally impaired

Animation

Subtle techniques

- Enhancing user understanding
  ...information in motion
- Enhancing user experience
  ...small details make big differences

Animation

Presenting data visually

- South Bay housing starts vs. interest rates

Animation

Explaining complex operations

- The Mac Programmers training course

Don't tell me, show me!

Animation

Future directions

- 3D lets you rotate the object
- 4D lets you move it through time and space

Video

The next best thing to being there

- Information compressed into image and motion

Video

Practical applications

- Training – The Business Plan
- Education – The Elastic Charles

Multiculturalism

Why?

- High demand in government and academia
- 10,000 Japanese-owned companies in the US
- Growing foreign markets

Multiculturalism

What is it exactly?

- Foreign currency, time and date formats
- Different alphabetic sorting orders
- Script manager capabilities

Multiculturalism

Watashi ha sushi dai suki desu.

Some considerations
- Differing cultural preferences
- A number of languages in one document
- International development sessions – tomorrow

Simulation

Integrating technologies to present information
in clear and previously inconceivable ways...

... a new kind of reality

Simulation

WYSIWYG

- Paperless office?
- The Holy Grail of desktop publishing
- The potential of 2D paper simulation

Simulation

The computer reaching its potential

- Doing things we can't do any other way
  – measuring time and motion
  – traveling geographically
  – getting behind the data

Simulation

Some examples

- Bright Star's on-line help
- Depleting the Amazon rain forest
- Vases, cans and heads

Remember the Big Picture

- Turning data into knowledge
- Immediate applications
- Making visible that which is invisible
- Fun!

Where do you go from here?

- International sessions on Wednesday
- International resource booth all week
- Sound, images, and media devices on Friday
- Reading list

The power to be your best