Evolving the Interface

The WIMP metaphor (windows, icons, menus, pointer) appeared in public in 1984, designed for personal computers with naive users, narrow applications, weak processors, impoverished bandwidth and i/o, and stand alone usage. Isn't it time for a change?

	WIMP	**BUFF**

- Metaphor   Reality, virtuality

  The book, desktop, office room, etc are all weak metaphorical maps. We should be interacting with a strong mapping of the task itself.

- Direct Manipulation   Delegation

  Drag and drop makes drudgery easy but it provides no abstractions. Wouldn't you prefer to delegate those repetitive jobs to the system?

- See and Point   Describe and Command

  It's nice to see what you are manipulating, but this is a regression to first grade. We need tools that are driven by language and abstraction, not by touch

- Consistency   Diversity

  Consistency reduces the need for thought, but the world is actually complex and diversified. The pencil and paper suggest an ideal flexible, easy-to-use tool.

- WYSIWYG   Represent meaning

  Wysiwyg is a mapping to output that ignores the meaning of the output. We need semantics included at the display level, so that the interface knows why a phrase is in italics.

- User Control   Shared Control

  Letting the user steer the process gives a feeling of control, but is far too much work. We don't write essays by a single button push, so we must recognize that control is difficult and we should welcome help from agents and others.

- Feedback and Dialog   System handles details

  Clear, consistent feedback is like having your boss always looking over your shoulder. We should hide most processes; do you really want feedback from the garbage collection algorithm?

- Forgiveness   Model User Actions

Reversible actions permit a user to make and revoke errors. With a little bit of contextual understanding, however, the system can forbid letting those errors from happening directly.

• Aesthetic Integrity Graphic Variation

Simple, clean interfaces are also limited in capability, drab and boring. We need help navigating large spaces; variation and diversity are appropriate roadsigns.

• Modelessness Richer Cues

It is idealistic and foolish to expect to do anything at any time. Modes are task specific, lets learn to identify contexts rather than to blur our vision.

ISSUE	WIMP	BUFF
users	naive	post-nintendo
applications	productivity	ubiquitous
power	weak	humungous
communication	impoverished	rich
connect	standalone	deep and dynamic
language	icons	English language
objects	weak and big	many, small, rich
origin	finder/files	personal information
travel	surf	push to you
image	be your best	don't work hard

What is suggested is a paradigm change, not an incremental improvement. The components of a paradigm are all mutually reinforcing, so that the desktop metaphor does not readily adapt to changes of the parts.

Main Points:

• Language must play a central role at the interface. Language is abstract, negotiable, contextual, multimodal, and ambiguous, it is not a physical metaphor.

• Objects need richer representations, multiple views for multiple uses. Objects need to include some notion of their meaning.

• The interface needs more expressive power and diversification to handle information complexity.

• There are more expert users and more agents and proxy users. The user base is smarter, networked, and dealing with too much information too readily accessible but not organized.