The Desk of the Future

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[This is a 2022 scan-and-OCR re-creation of an article I wrote in 1981 for a University of Toronto Computing Center team building a student workstation. The project would soon be crushed by the emergence of the relatively-inexpensive IBM PC. This report is included here for historical interest only.

Comments in square brackets in the text mostly reflect my (undated) handwritten annotations on the original copy that is in my possession, printed on a dot-matrix printer back in the day.]

One hears a great deal these days about "the office of future". Someone has remarked that every office equipment supplier claims to be selling the office of the future, today. Almost all these companies are selling equipment that will be placed on your work desk. Word Processors, terminals, micro computers, electronic typewriters, computing workstations: all are new little boxes to put on your old grey steel desk. Ugh! The stomach turns at the thought of another decade of old steel desks (or new steel desks) that are noisy, clunky, get in the way of your feet, and just look blah! The office desk also usually comes with a small file drawer built in that is just right for [misfiling all those little bits of pieces of paper that people keep sending you], if you don't have access to an electronic filing system.

With that in mind I came up with the design for what I am calling "the desk of the future". So far as I know, this kind of design is not subject to copyright or patent protection; if it is I [might as well] put it in the public domain in hopes that many manufacturers will be willing and able to build it.

The desk is designed to be functional and comfortable. It has a personal computing workstation hidden inside it, a full-size graphics screen, a typewriter keyboard, sketchpad, and voice input and output.

The graphics screen implements something analagous to Smalltalk. Each task that you are working on has its own identity on the screen, and these "objects" can overlap as shown in the diagram. The telephone handset or the loudspeaker-microphone is used to both to give commands to the workstation, and for digitized telephone communication, over the same communications network. The keyboard

is for conventional typing, but you can order it with a QWERTY keyboard, a Dvorak Simplified Keyboard or other enhanced keyboard arrangement. The Dvorak arrangement is known to be several times easier to learn and use than the slow-you-down QWERTY arrangement. The sketchpad combines the functions of a "digitizing tablet" and a "mouse" - it is a large section on the flat surface that is touch and motion-sensitive. It can be used for tracing saps and diagrams, but more importantly it allows freehand creation of diagrams. You just "draw" on it with your finger or a special stylus, and what you draw appears on the screen. I think Nicolaides would have liked it. Naturally the keyboard and sketchpad have no moving parts, so the entire desk surface is a single sheet of thin plastic. At last, you can eat or drink at your desk without worrying about spilling coffee into the keyboard. Spill something? Just wipe it off with a damp cloth. There's no harm done!

Can all this heady stuff be done? Actually, most of it is present-day or very-near-future technology. The touch-sensitive keyboard is available from RCA Microcomputer Products, and is very sigilar to [a McDonalds' cash register, or] the control panel on an IBM 3704 controller, which was sold as long ago as 1975 or 1976. Sketchpads are here today. But what about the huge graphics display? [The flat-panel technology exists; see Bytelines, Byte Magazine, March 1981, p 244.]

A 12,800 by 1000 graphics bit-mapped memory takes only 200 of the new 64Kbit rams. [These are now selling for $25-30, see Bytelines, op cit, p. 246.] In a few years these vill probably be selling for around $10, so that is within the cost of a word processing system. The CPUs to drive the machine exist today. The [Motorola] M68000 has an addressing range of 16 bytes, an order of magnitude larger than the display memory. And Intel expects to start shipping the 1APX-432, which is a 32-bit microprocessor, within a few weeks! IBM has recently demonstrated continuous speech recognition with an accuracy rate exceeding ninety percent for normal speech. Several companies - including your telephone network - routinely digitize voice communications for transmission over packed packet switching networks. A 10-million-bits-per-second network called the Ethernet was recently announced by three large companies acting in concert - Xerox, Digital Equipment and Intel. The graphic display would probably not be a CRT display, but might be a plasma display similar to that widely used on PLATO terminals since the early seventies.

The technology of the desk of the future is here nov. All that remains is for someone to put it together and sell it.

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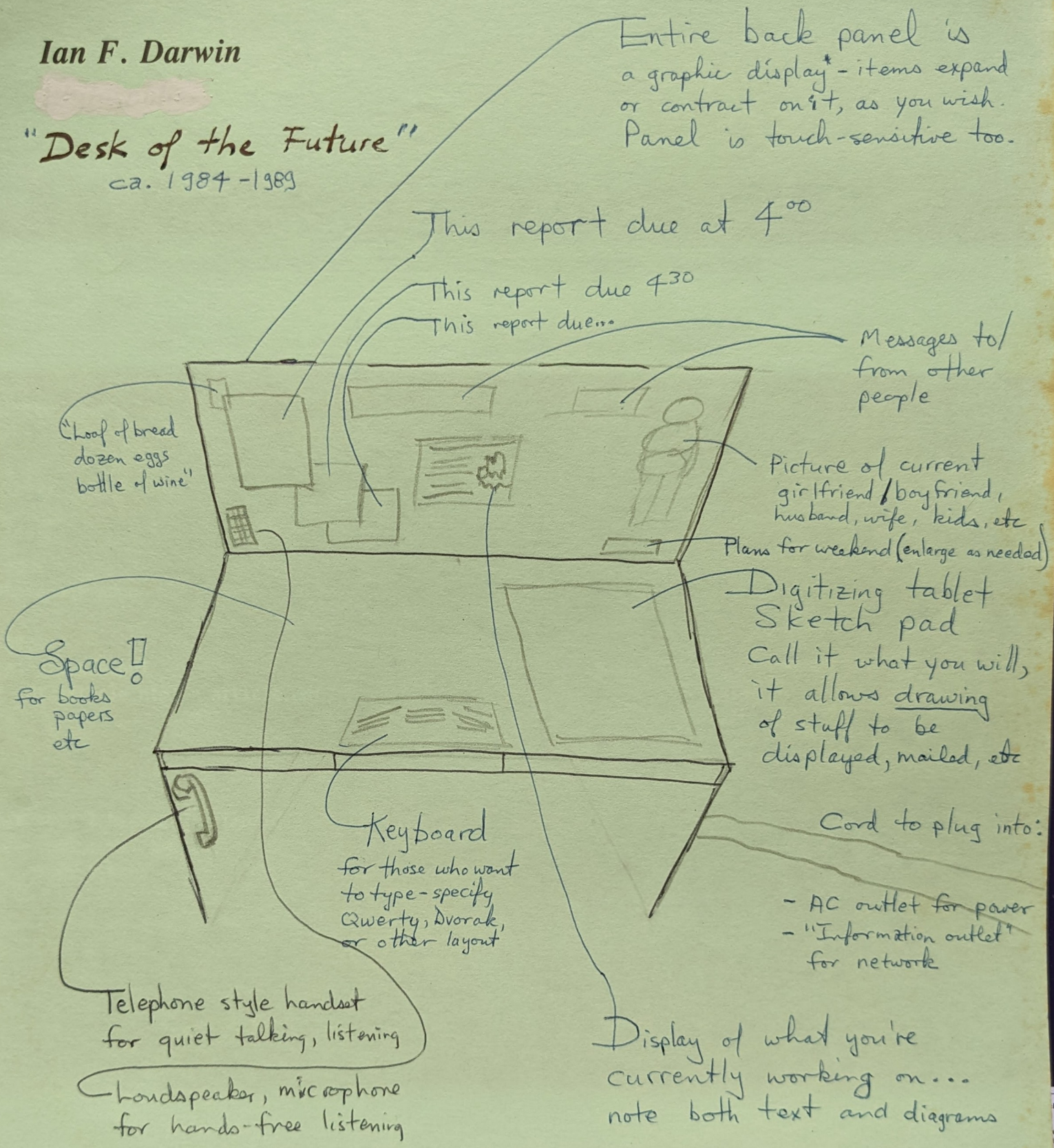
"Desk of the Future"

ca. 1984 - 1989



A minority report to the VIVA User Committee - 1981-02-14

* a 12,800 x 1000 display takes only 200, 64K rams...