50 Years of Computing

Towards Embedded Ubiquitous Computers

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You Can't Escape Computers

iPhone

Laser Keyboard

Nikon D300

Video Watch

GPS

Playstation 3

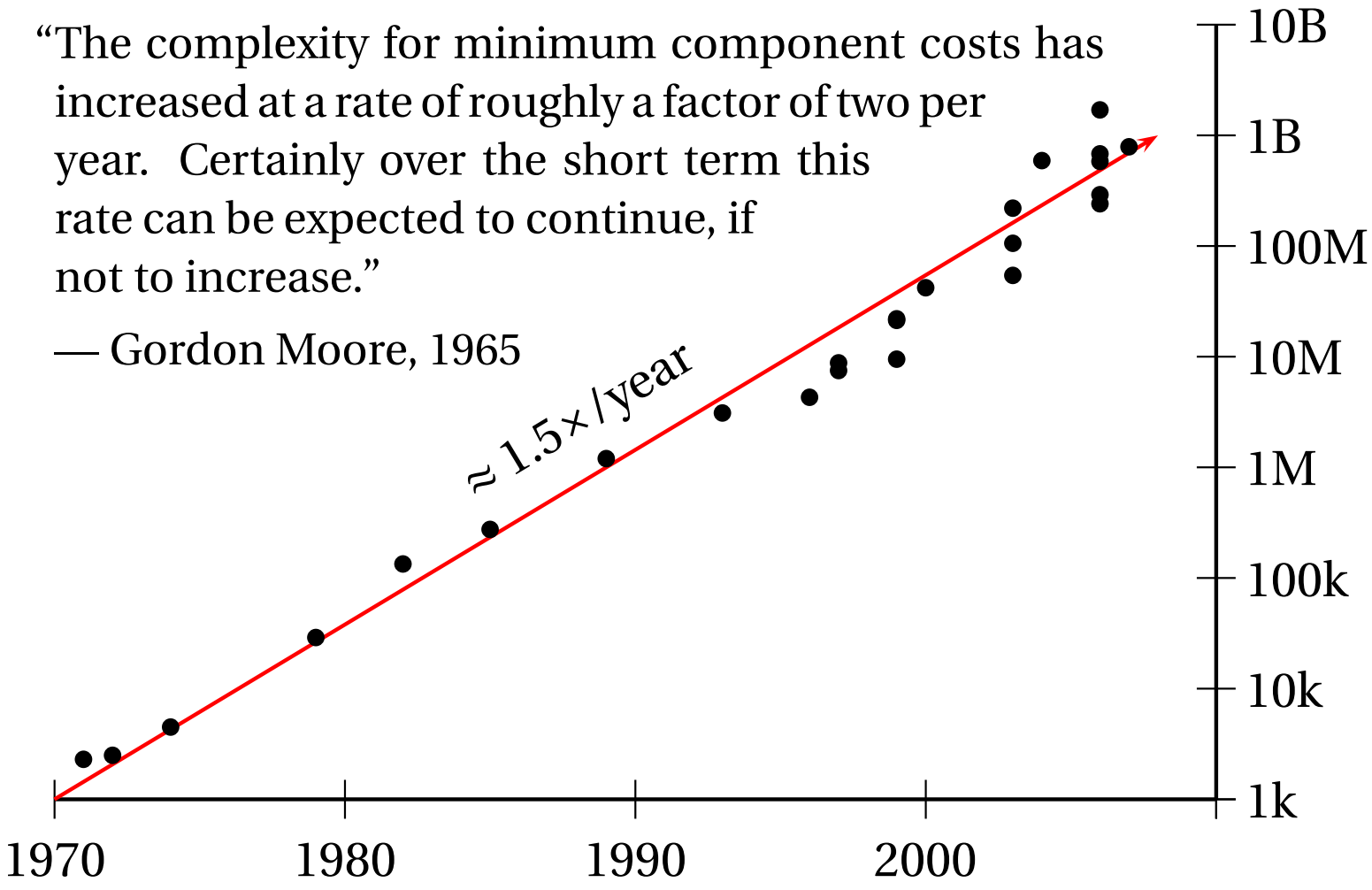
PC Keyboard

SD Card

Moore's Law: Transistors per chip

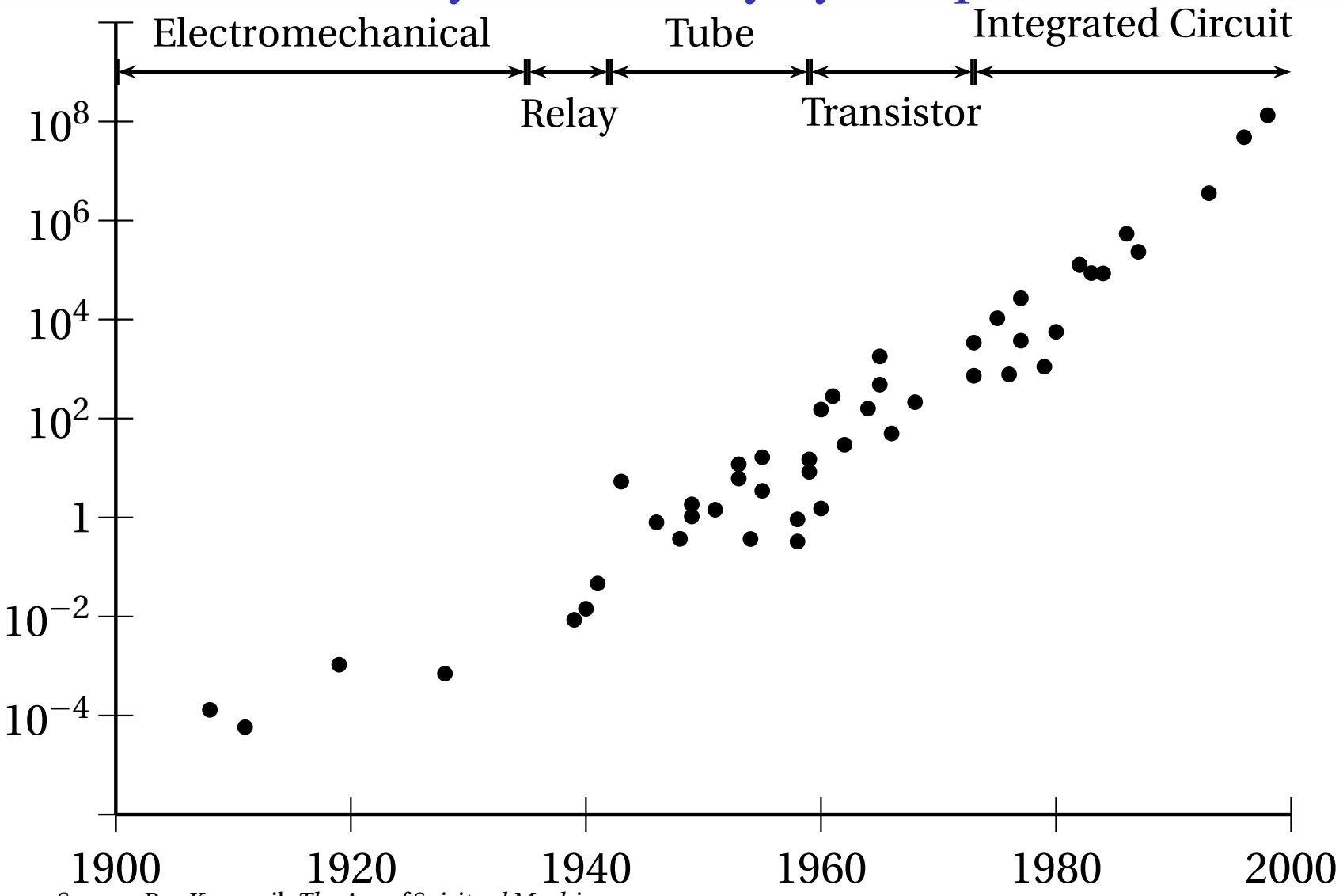
"The complexity for minimum component costs has increased at a rate of roughly a factor of two per year. Certainly over the short term this rate can be expected to continue, if not to increase."

— Gordon Moore, 1965



Source: Intel/Wikipedia

$1000 buys this many cycles per second

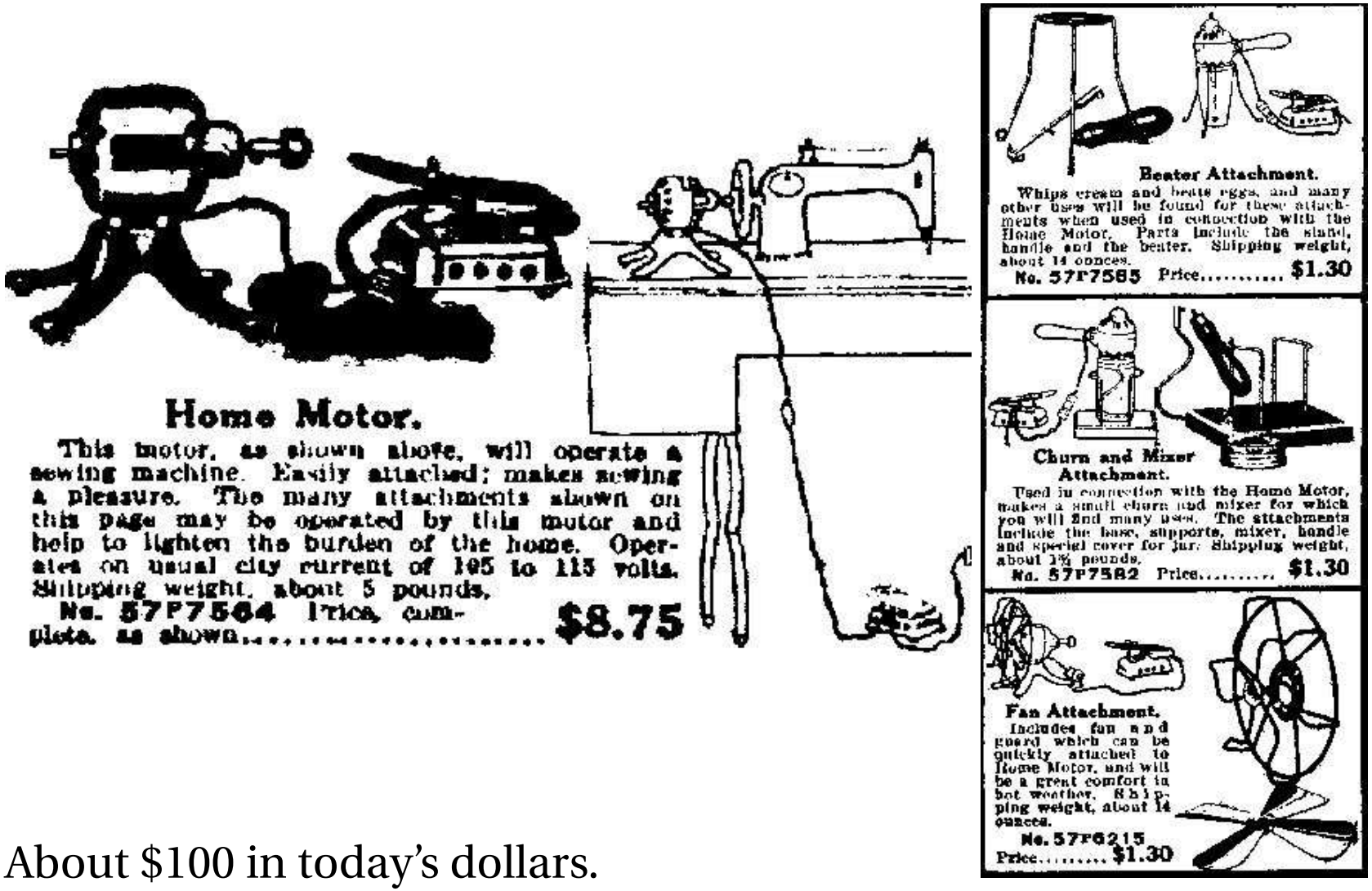


Source: Ray Kurzweil, *The Age of Spiritual Machines*

Cray-1
1976
$7.9M (=$25M in 2009)
200,000 gates
80 MHz
8 MB
160 MIPS
5.5 tons
115 kW

Sheeva plug
2009
$99
50,000,000? gates
1.2 GHz
512 MB
1000 MIPS
$4'' \times 3'' \times 2''$
19 W

1918 Sears Roebuck Catalog



Home Motor.

This motor, as shown above, will operate a sewing machine. Easily attached; makes sewing a pleasure. The many attachments shown on this page may be operated by this motor and help to lighten the burden of the home. Operates on usual city current of 105 to 115 volts. Shipping weight, about 5 pounds.

No. 57F7564 Price, complete, as shown..... $8.75

Beater Attachment.

Whips cream and beats eggs, and many other uses will be found for these attachments when used in connection with the Home Motor. Parts include the stand, handle and the beater. Shipping weight, about 14 ounces.

No. 57F7585 Price..... $1.30

Churn and Mixer Attachment.

Used in connection with the Home Motor, makes a small churn and mixer for which you will find many uses. The attachments include the base, supports, mixer, handle and special cover for jar. Shipping weight, about 1½ pounds.

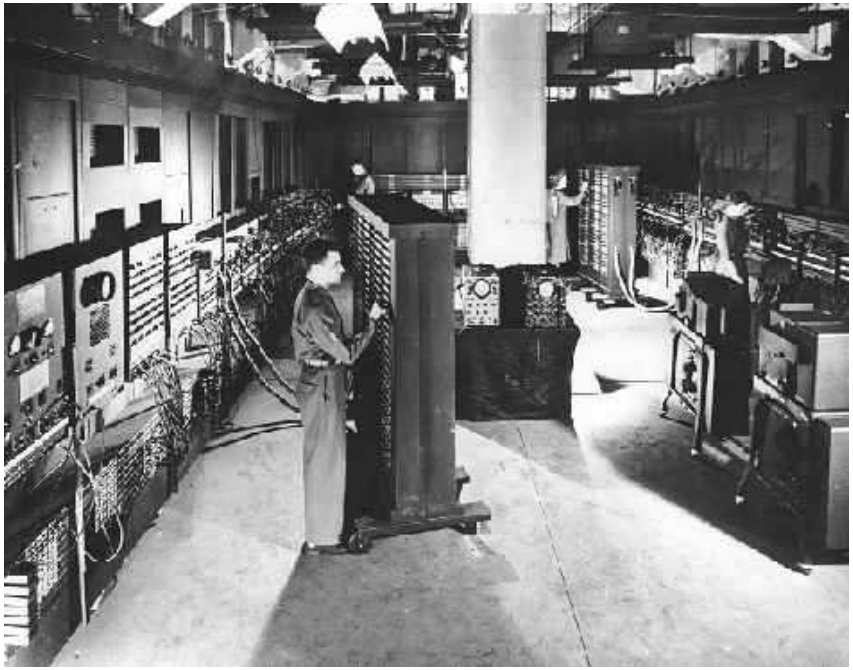
No. 57F7582 Price..... $1.30

Fan Attachment.

Includes fan and guard which can be quickly attached to Home Motor, and will be a great comfort in hot weather. Shipping weight, about 14 ounces.

No. 57F6215 Price..... $1.30

About $100 in today's dollars.

From Donald Norman, *The Invisible Computer*, 1998.

Spot the Computer