INTEL CONSUMER DESKTOP PC
MICROPROCESSOR HISTORY TIMELINE

1971: 4004 Microprocessor
The 4004, invented by Intel, was the world's first commercially available microprocessor. This breakthrough invention powered the Busicom calculator and paved the way for embedding intelligence in inanimate objects as well as the personal computer.
Number of Transistors: 2,300
Speed: 108KHz

?? Intel began development of the first microprocessor in 1969 as part of a project for Japanese calculator manufacturer Busicom (far left) to develop a set of chips for a family of programmable calculators.

?? The original plan from Busicom called for 12 custom chips. Ted Hoff, an Intel engineer (center), developed the concept for a general-purpose logic device would be a better, more efficient solution – his idea led to the development of the microprocessor.

?? Originally, Busicom owned the rights to the microprocessor having paid Intel $60,000. Realizing the potential for the "brain" chip, Intel offered to return the $60,000 in exchange for the rights to the microprocessor design. Busicom agreed and Intel introduced the 4004 (right) to the worldwide market on November 15, 1971. The 4004 sold for $299 each.

1972: 8008 Microprocessor
The Intel 8008 was twice as powerful as the 4004. A 1974 article in Radio Electronics referred to a device called the Mark-8 that used the 8008. The Mark-8 is known as one of the first computers for the home--one that by today's standards was difficult to build, maintain and operate.
Number of Transistors: 3,500
Speed: 200KHz

1974: 8080 Microprocessor
The Intel 8080 became the brains of the first personal computer--the Altair, allegedly named for a destination of the Starship Enterprise from the Star Trek television show. Computer hobbyists could purchase a kit for the Altair for $395. Within months, it sold tens of thousands, creating the first PC back orders in history.
Number of Transistors: 6,000
Speed: 2MHz

1978: 8086-8088 Microprocessor
A pivotal sale to IBM made the Intel 8088 the brains of IBM's new hit product--the IBM PC. The 8088's success propelled Intel into the ranks of the Fortune 500, and Fortune magazine named the company one of the "Business Triumphs of the Seventies."
Number of Transistors: 29,000
Speed: 5MHz, 8MHz, 10MHz

IBM PC 1981 with Intel 8088 processor

1982: 286 Microprocessor
The 286, also known as the Intel 80286, was the first Intel processor that could run all of the software written for its predecessor. This software compatibility remains a hallmark of Intel's family of microprocessors. Within 6 years of it release, there were an estimated 15 million 286-based personal computers installed around the world.
Number of Transistors: 134,000
Speed: 6MHz, 8MHz, 10MHz, 12.5MHz

1985: Intel 386? Microprocessor
Reflecting the company's global growth, Intel simultaneously unveiled the Intel386™ microprocessor at special events in London, Munich, Paris, San Francisco and Tokyo in the fall of 1985. It wasn't just an evolutionary product in Intel's growing family of microprocessors; it was revolutionary. It was a 32-bit chip that contained 275,000 transistors, could process five million instructions per second, and could run all popular operating systems, including Windows*. It was also "multitasking," meaning it could run multiple programs at the same time.
Number of Transistors: 275,000
Speed: 16MHz, 20MHz, 25MHz, 33MHz

1989: Intel 486? DX CPU Microprocessor
The 486? processor generation really meant you go from a command-level computer into point-and-click computing. "I could have a color computer for the first time and do desktop publishing at a significant speed," recalls technology historian David K. Allison of the Smithsonian's National Museum of American History. The Intel 486? processor was the first to offer a built-in math coprocessor, which speeds up computing because it offloads complex math functions from the central processor.
Number of Transistors: 1.2 million
Speed: 25MHz, 33MHz, 50MHz

1993: Intel® Pentium® Processor
The 3.1 million-transistor Pentium® processor has features that allow computers to easily incorporate "real world" data such as speech, sound, handwriting and photographic images. Because it is fully compatible with earlier Intel microprocessors, its expected name was Intel586

processor. Intel, however, could not prevent imitators from using similar numerical nomenclature for their products, so the company decided to use a more protectable name, ultimately choosing "Pentium".
Number of Transistors: 3.1 million
Speed: 60MHz, 66MHz

1997: Intel® Pentium® II Processor

The 7.5 million-transistor Pentium® II processor incorporates Intel MMX? technology, which is designed specifically to process video, audio and graphics data efficiently. It was introduced in an innovative Single Edge Contact (S.E.C) Cartridge that also incorporated a high-speed cache memory chip. With this chip, PC users can capture, edit and share digital photos with friends and family via the Internet; edit and add text, music or between-scene transitions to home movies; and, with a videophone, send video over standard phone lines and the Internet.
**Number of Transistors**: 7.5 million
Speed: 200MHz, 233MHz, 266MHz, 300MHz

1999: Intel® Celeron? Processor

Developing processors for specific market segments, the Intel Celeron? processor is designed for the value PC market segment. It provides consumers great performance at an exceptional value, and it delivers excellent performance for uses such as gaming and educational software.
Number of Transistors: First product generation had 7.5 million, second generation had 19 million and today's Celeron processor at 1.1GHz has 27, with the 1.2GHz version having 44 million transistors.
Speed: First generation at 266MHz. Today the range is from 500MHz to 1.10GHz
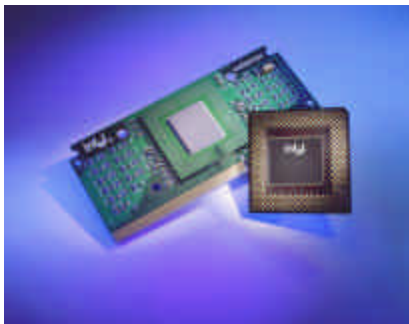
1999: Intel® Pentium® III Processor

The Pentium® III processor has circuit line widths of 0.25 microns. If the circuit lines were wide enough to walk through, the chip would cover almost 660 square miles, an area about 34 times the size of the city of Santa Clara, Calif. It features 70 new instructions--Internet Streaming SIMD extensions--that dramatically enhance the performance of advanced imaging, 3D, streaming audio, video and speech recognition applications.
Number of Transistors: 9.5 million
Speed: 650MHz to 1.2GHz

2000: Intel® Pentium® 4 Processor
The Pentium 4 processor debuted with 42 million transistors and circuit lines of 0.18 microns. Intel's first microprocessor, the 4004, ran at 108 kilohertz (108,000 hertz), compared to the Pentium® 4 processor's initial speed of 1.5 gigahertz (1.5 billion hertz). If automobile speed had increased similarly over the same period, you could now drive from San Francisco to New York in about 13 seconds. Users of Pentium® 4 processor-based PCs can create professional-quality movies; deliver TV-like video via the Internet; communicate with real-time video and voice; render 3D graphics in real time; quickly encode music for MP3 players; and simultaneously run several multimedia applications while connected to the Internet.
Number of Transistors: 42 million
Speed: 1.30GHz, 1.40GHz, 1.50GHz, 1.70GHz, 1.80GHz and the history-making 2GHz announced Aug. 27, 2001.

For more information, visit the Microprocessor Hall of Fame at http://www.intel.com/intel/intelis/museum/exhibit/.

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