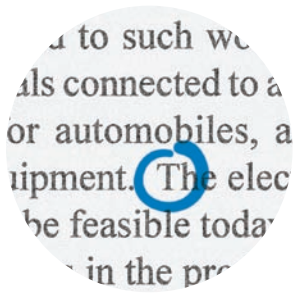
Moore's Law in perspective

According to Moore's Law, the number of transistors on a chip roughly doubles every two years. As a result the scale gets smaller and smaller. For decades, Intel has met this formidable challenge through investments in technology and manufacturing resulting in the unparalleled silicon expertise that has made Moore's Law a reality.

As transistor counts climb so does the ability to increase device complexity and integrate many capabilities onto a chip. The cumulative impact of these spiraling increases in capability power the economy and the Internet, running everything from digital phones and PCs to stock markets and spacecrafts, and enable today's information-rich, converged digital world. Intel expects to continue driving the leading edge of Moore's prediction well into the foreseeable future.

Gordon Moore estimated in 2003 that the number of transistors shipped in a year had reached about 10,000,000,000,000,000,000 (10^{18}). That's about 100 times the number of ants estimated to be in the world.

On the road to a billion transistors per chip, Intel has developed transistors so small that about 200 million of them could fit on the head of each of these pins.



The price per transistor on a chip has dropped dramatically since Intel was founded in 1968. Some people estimate that the price of a transistor is now about the same as that of one printed newspaper character.

In 1978, a commercial flight between New York and Paris cost around $900 and took seven hours. If the principles of Moore's Law had been applied to the airline industry the way they have to the semiconductor industry since 1978, that flight would now cost about a penny and take less than one second.

A chip-making tool under development superimposes magnetically levitated images within a tolerance of 1/10,000 the thickness of a human hair — a feat equivalent to driving a car straight for 400 miles while deviating less than one inch.

Because electricity travels a shorter distance in a smaller transistor, smaller transistors mean faster chips. It would take you about 25,000 years to turn a light switch on and off 1.5 trillion times, but Intel has developed transistors that can switch on and off that many times each second.