

# The Computer Mouse: A Timeline

The history of the computer mouse begins in the 1960s when Dr. Douglas C. Engelbart and his team at Stanford Research Institute (SRI) created the original mechanical pointing device that is widely credited as being the first mouse. That mouse and Engelbart's conception of human interaction between human and computer launched the industry that has placed hundreds of millions of pointing devices on desktops. For more than a quarter of a century, Logitech has been the technological leader, driving innovation in mouse technology and design. The following timeline outlines the creation and evolution of the computer mouse.

- 1961** – While at a conference, Dr. Douglas C. Engelbart, of the Stanford Research Institute, takes out the notebook he carries in his front pocket and sketches a picture of a device that would allow people to physically interact with a CRT screen. He would later describe the device as a “pointer” in his 1962 paper, “Augmenting the Human Intellect: A conceptual framework.”
- 1964** – Bill English, chief engineer of Engelbart's Augmentation Research Center (ARC) at SRI, builds the first computer mouse prototype. Carved from a block of wood, the original mouse (pictured below) contained a wheel that translated the motion of the device into cursor movement on the screen. With a single red button at the top and a cord coming out the back, someone in Engelbart's lab said it looked like a mouse. The name stuck. To this day, no one recalls who dubbed it the mouse.



(Image courtesy of Bootstrap Institute.)

- 1967** – June 21. Engelbart files a patent application for an “X-Y Position indicator for a Display System.” The abstract on the patent disclosure reads:  
“An X-Y position indicator control for movement by the hand over any surface to move a cursor of the display on a cathode ray tube, the indicator control generating signals indicating its position to cause a cursor to be displayed on the tube at the corresponding position. The indicator control mechanism contains X and Y position wheels mounted perpendicular to each other, which rotate according to the X and Y movements of the mechanism, and which operate rheostats to send signals along a wire to a computer which controls the CRT display.”
- 1968** – December 9. The mouse makes its public debut. In what is often described as the “Mother of all Demos,” Engelbart and 17 of his fellow SRI researchers present a 90-

minute live public demonstration at the Fall Joint Computer Conference in San Francisco. The team also demonstrates hypertext, object addressing, dynamic file linking, and shared screen collaboration between two people communicating with both audio and video across a network.

**1970** – November 17. The United States Patent Office grants patent number 3,541,541 to Dr. Engelbart for the X-Y Position indicator for a Display System.

**1974** – The modern single-ball, two-button mouse is developed by Jean-Daniel Nicoud at Switzerland's Ecole Polytechnique Federale de Lausanne. After Engelbart sent Nicoud drawings of his mouse idea, Nicoud replaced potentiometers with optical encoders.

**1981** – October 2. Logitech is founded as a consulting firm by Pierluigi Zappacosta, Daniel Borel and Giacomo Marini in Apples, Switzerland.

Dick Lyon and Steve Kirsch invent two new mice, collectively referred to as Optical Mice. These original optical mice operate on a special pad marked with a pattern of dots or lines.

**1982** – Logitech introduces its first mouse, the P4. Its opto-mechanical technology combines optical encoders connected to rollers that provide greater tracking precision with the tactical response of a rolling ball.



(Image courtesy of Logitech.)

Logitech opens its first U.S. office in Palo Alto, California

**1983** – January. Apple introduces the \$9,995 Apple Lisa computer with the first graphical user interface to use a mouse. While not a commercial success, the Lisa laid the foundation for the introduction of the Macintosh® personal computer.

May 2. Microsoft introduces the Microsoft® Mouse. Commonly called the “green-eyed” mouse, because of its two green buttons, it sold for \$195.



(Image courtesy of Microsoft. Used with permission.)

**1984** – Apple introduces the Macintosh as “the computer for the rest of us.” With its graphical user interface, the Macintosh demonstrates the power of a simple concept: point and click.

Logitech forges its first OEM agreement with Hewlett-Packard, shipping the Logitech mouse with HP's high-end workstations.



(Image courtesy of Hewlett-Packard. Used with permission.)

Logitech adds OEM customers Convergent Technologies, DEC and AT&T



(Image courtesy of Convergent. Used with permission.)

Logitech designs the first cordless mouse as an OEM product for Metaphor. The mouse uses infrared (IR) technology and is powered by four Ni-Cad batteries. While the infrared mouse eliminates the mouse cord and provides a measure of freedom, it must be pointed directly at the IR receiver connected to the computer. It also fails to provide the data transmission rates of a corded mouse.

Logitech creates LogiMate®, an interface adapter box that allows Logitech's parallel mouse (LogiMouse®) to interface with an IBM PC and compatibles. The LogiMouse/LogiMate solution permits users to run all PC software using the mouse with no need to modify hardware or software.

First self-cleaning ball cage is introduced by Logitech in the R7 Series.

**1985** – Logitech enters the retail market with the Logimouse C7. Its \$99 price, compared to the \$179 Microsoft mouse, is widely hailed as a breakthrough. Under development for 18 months, the C7 is the first opto-mechanical mouse that draws power from the computer's RS232 port, eliminating the need for a separate power supply. Primarily used for pointing, the C7 mouse also has the power to function as a supplementary input device. The third button allows the mouse to perform complex commands beyond simple point and click.



(Image courtesy of Logitech.)

Logitech introduces the Logitech TrackMan®, the first thumb-operated trackball, paves the way for future stationary, thumb-operated trackball mice.

**1986** – Logitech introduces the Bus Mouse, which uses a separate PC card to interface with the computer.

**1987** – IBM introduces the IBM PS/2 personal computer. Following IBM's lead, manufacturers increasingly equip computers with round 6-pin mini-DIN connectors for mice and keyboards. IBM also releases a new operating system, OS/2 which, for the first time, allows the use of a mouse with an IBM computer.

Microsoft introduces its first ergonomically designed contoured mouse, commonly called “the Dove bar” because it looks like the bar of soap. It replaces all other mice in the Microsoft mouse line.



(Image courtesy of Microsoft. Used with permission.)

Logitech improves the user mouse experience by shipping fully configurable drivers that provided fine control over mouse sensitivity. These are the first ballistic drivers designed to detect changes in mouse velocity and to make the cursor react accordingly.

Logitech begins manufacturing custom mice for the Macintosh with the Apple® Macintosh Plus Mouse. Apple Computer is Logitech's first large OEM customer in the consumer market.

**1988** – Microsoft ships its one millionth mouse

Logitech ships its two millionth mouse

**1989** – Logitech replaces the Series 7 mice with the ergonomic Series 9, or S9 Mouse, designed to fit into the palm of a hand. Ergonomics, the study of the interaction between people and their environment, has become an industry buzzword signifying products that are more comfortable to use. Available for the IBM PC, PS/2 and compatibles, the Series 9 is Logitech’s first retail mouse to depart from its original square design.

In late 1989, Logitech introduces the TrackMan®. A change from the traditional finger-operated trackball, it is a stationary device designed to be operated with the thumb.

**1990** – Microsoft ships Windows® 3.0. Its graphical user interface displays programs, files and commands with pictures called icons. The mouse is an essential tool for navigating the new interface and quickly becomes mainstream.

Logitech leads the move to improve cordless performance by switching from IR technology to radio frequency (RF) technology. IR had been hampered by relatively slow data rates and required that the mouse have an unobstructed view of the IR receiver. The adoption of the 27 MHz spectrum for cordless communication solves these problems because radio waves do not require line of sight with the receiver and can move larger amounts of data to distances up to six feet.

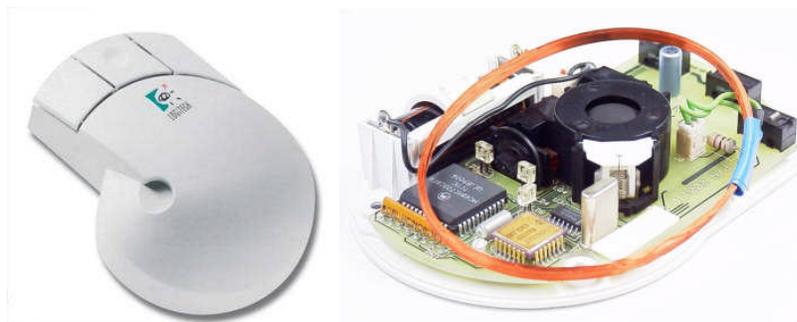
**1991** – Microsoft ships 4 million copies of Windows in a single year as users begin to adopt Windows in large numbers.

Microsoft sells 6 million Microsoft mice in one year.

Logitech ships its 9 millionth mouse.

Logitech introduces the ergonomic MouseMan®, specifically designed to fit the hand, and introduces a left-handed version of the MouseMan, as well as a version designed for larger hands.

Logitech introduces the MouseMan® Cordless as the first cordless mouse to use RF technology, freeing users from the line-of-sight constraints of IR cordless mice. It uses a costly 3-volt, 1.3-Ah lithium battery.



(Images courtesy of Logitech.)

Logitech introduces the KidzMouse, the first mouse made specifically for children. The KidzMouse is designed for children's small hands and, with buttons as "ears," looks like a "real" mouse.

**1992** – Logitech introduces the TrackMan® portable to address the needs of mobile computing. The Trackman portable features an ambidextrous trackball and is designed to be used either with a laptop or a desktop computer.

Logitech introduces the Magellan 3D mouse, the first mouse designed for 3D applications such as CAD/CAM.

Logitech ships its 20 millionth mouse.

**1993** – Microsoft introduces a new ergonomic mouse. Code-named Carrera, the Microsoft Mouse 2.0 includes enhanced driver software that ensures compatibility with Windows® 3.1 and MS-DOS.

**1994** – Logitech introduces CyberMan, the world's first interactive 3D controller for games. It features six degrees of freedom and provided tactile feedback.

Logitech launches the Sensa family of mice. This new line of mice offers product differentiation through texture and color, and is designed to appeal to the individuality of mouse users.

Logitech updates the Cordless MouseMan® to use 27 MHz RF technology. The 27 MHz technology first used in the Cordless MouseMan offers a six-foot operating range and the reliability needed for basic computing tasks.



(Image courtesy of Logitech.)

The Logitech® Trackman Live! Cordless desktop pointing device wins a "best of the best" red dot award for industrial design. It is also included in an exhibition entitled "icons: magnets of meaning" at the San Francisco Museum of Modern Art.

**1995** – Logitech introduces the TrackMan® Marble. Unlike previous mice that use a ball connected to either mechanical or optical encoders, the TrackMan Marble uses a new technology, patented by Logitech, called Marble Sensing Technology. This technology employs a ball with an embedded array of light sensitive dots. By scanning trackball motion with a camera, advanced optics and neural network logic are able to transmit

motion to the computer. Other than the ball itself, there are no moving parts, so dust and dirt problems that plagued earlier mouse designs are eliminated.



(Image courtesy of Logitech.)

August. Microsoft launches Windows® 95, selling more than 1 million copies at retail stores within four days. By mid-October, 7 million copies have been purchased worldwide, proving consumers are enthusiastic about the graphical user interface, which requires a mouse.

**1996** – Microsoft introduces Intellimouse®, which combines the ergonomic design of the Microsoft Mouse 2.0 with a scroll wheel.

Logitech introduces MouseMan® 96 with software optimized for Windows 95.

Logitech launches Macintosh® versions of MouseMan Cordless, TrackMan Marble and TrackMan® Live!

Logitech ships its 100 millionth mouse.

**1997** – Logitech launches the TrackMan® Marble FX, the only trackball that lets you use both your thumb and index finger.



(Image courtesy of Logitech.)

**1998** – Microsoft launches Windows® 98, featuring plug-and-play support for the new USB interface.

Logitech ships its 200 millionth mouse.

Logitech introduces the USB Wheel Mouse, designed to take advantage of the new USB interface and to take full advantage of the Windows 98 environment.

**1999** – Agilent releases an optical mouse sensor that eliminates the need for mouse pads. The sensor becomes the basis for a new generation of longer lasting computer mice that track more precisely.

Microsoft introduces optical mice.



(Image courtesy of Microsoft. Used with permission.)

Logitech introduces PS/2 and USB combo mice. By supporting both the legacy PS/2 interface and the new USB interface, the mice allow users to easily transition from legacy to new systems.

Logitech releases the Wheel Mouse for Macintosh with iMac/iBook colors.

Logitech introduces the Wingman gaming mouse, the first mouse specially designed for gamers, with high report rates for immediate on-screen response.

**2000** – President Bill Clinton awards Doug Engelbart the National Medal of Technology. The nations' highest technology honor, the medal recognizes innovators who have made lasting contributions to America's competitiveness and standard of living and whose solid science has resulted in commercially successful products and services.

Logitech introduces its first optical mice based on Agilent's mouse sensor. The optical sensor eliminates the ball-based mechanism traditionally found in mice. Marking a rapid rate of adoption, Agilent ships its 12 millionth optical sensor.

Logitech ships its 300 millionth mouse.

Logitech ships iFeel™ Optical Mouse. iFeel adds tactile response to mainstream mice.

**2001** – Logitech introduces the Cordless MouseMan™ Optical, combining the freedom of a cordless mouse with the precision of optical tracking. The mouse uses two AA batteries.

Logitech and Agilent Technologies jointly develop a power-saving optical sensor.

**2002** – Underscoring the rapid adoption of optical mice, Agilent ships its 100 millionth optical sensor worldwide.

Logitech launches the rechargeable Logitech® MX™700 Cordless Optical mouse, the first product to include Logitech's proprietary Fast RF technology. The MX700 features a rapid recharging base station that doubles as the RF receiver. Fast RF technology becomes the standard cordless technology in Logitech's mid-to-high end mice. Operating in the 27 MHz band, Fast RF technology delivers the same data transfer rate as corded mice operating through a USB port. The wireless technology is able to deliver up to 125 reports per second, approximately 25 times more than other RF-based cordless mice.

**2003** – Logitech ships its 500 millionth mouse.

Agilent ships its 200 millionth optical mouse sensor.

Logitech ships its first cordless optical mouse for notebooks.

Logitech introduces the Logitech® MX™900 Bluetooth® Optical mouse with a charging cradle that doubles as a Bluetooth hub. The Bluetooth hub enables mobile devices such as cell phones or PDAs to wirelessly synchronize data with a desktop PC.

**2004** – Logitech introduces the world's first mouse with laser tracking technology. The Logitech® MX™1000 Laser Cordless mouse tracks on some of the surfaces on which LED-based mice tend to fail. As a light source, laser is an improvement over the light emitting diode (LED) of optical mice. Laser, because of its coherent nature, is able to capture greater surface detail than LED light, resulting in dramatically improved tracking for mice.



(Image courtesy of Logitech.)

Logitech introduces the Logitech® V500 Cordless Notebook mouse, the first notebook mouse to use 2.4 GHz technology. The 2.4 GHz range is approximately 30 feet, about five times the range for 27 MHz mice. 2.4 GHz cordless mice also generate about 500 reports/second – four times that of a traditional mouse. The V500 replaces the traditional scroll wheel with a solid-state, touch-sensitive panel.



(Image courtesy of Logitech.)

**2005** – Logitech introduces the Logitech® MX™610 Laser Cordless mouse. Unlike other mice that send data in only one direction – to the computer – with its on-board microprocessor, the MX610 mouse can also receive data from the computer. Bi-directional communication with the mouse opens up the possibility of a number of convenience features, such as e-mail and instant message notifications. The MX610 also has new Smart Power Management; it can detect when the computer is shut down or asleep, and shuts down accordingly to save power.

Logitech introduces the full-speed USB computer mice. Designed for PC gamers, the Logitech® G5 Laser mouse and the Logitech® G7 cordless mouse both feature laser tracking technology with 2,000 dpi resolution. Resolution can be switched on the fly with a button on the mouse, giving gamers the flexibility to choose between pixel-precise targeting and fast-twitch maneuvers. Both mice have a report rate of 500 reports per second. The G7 mouse has two ultra-thin, fast-swap lithium-ion battery packs that can be fully recharged in two hours. The G5 mouse comes with a set of weights that allow the user to change the weight and balance for a more competitive edge.



(Images courtesy of Logitech.)

**2006** – Logitech introduces a left handed version of the award-winning MX610 Laser Cordless Mouse.

Logitech launches the Logitech® MX™ Revolution Cordless Laser mouse and the Logitech® VX Revolution Cordless Laser mouse for notebooks. The new mice feature the MicroGear™ Precision Scroll Wheel, which can spin freely for up to seven seconds, spanning hundreds of pages with a single flick of the finger. The mice also have a Touch to Search button. The MX Revolution also adds a new wheel thumb control for zooming and application switching.



(Image courtesy of Logitech.)

**2007** – Logitech introduces the Logitech® VX Nano Cordless Laser Mouse for Notebooks. The mouse's Plug-and-Forget Nano-receiver provides highly mobile notebook PC and MacBook® users with a mouse that simplifies life on the road. At the time of its announcement, the Plug-and-Forget Nano-receiver was the world's smallest USB receiver for mice (when compared with other 27 MHz USB receivers for notebook mice commercially available as of March 1, 2007).



(Image courtesy of Logitech.)

Logitech introduces the Logitech® MX Air™ Rechargeable Air Mouse, a versatile laser mouse that works on the desk and in the air. To enable effortless in-air navigation, the MX Air mouse combines three technologies – Freespace™ motion-control, gesture command and wireless – so people can point, select and play media files with just a flick of the wrist.



(Image courtesy of Logitech.)

**2008** – Logitech's MX Air mouse is included in the New York MoMA's exhibit, Design and the Elastic Mind. The exhibit explores the relationship between science and design in the contemporary world.

Logitech introduces the Logitech® V550 Nano cordless laser mouse for notebooks, featuring the Clip-and-Go dock. The unobtrusive dock lets you conveniently clip the V550 mouse to your laptop – and go.



(Image courtesy of Logitech.)

Logitech introduces advanced 2.4 GHz wireless technology, providing a powerful, reliable signal that effectively eliminates delays and dropouts. With its exceptionally robust signal, which exchanges data between the receiver and the mouse 300 times faster than conventional 27 MHz wireless technologies for cordless mice, Logitech's advanced 2.4 GHz wireless technology dramatically reduces interference.

November. Logitech ships billionth mouse.