

# Ethernet Technology Timeline

1973



May 22: Bob Metcalfe of **Xerox PARC** documents the conceptual invention of Ethernet—Metcalfe and David Boggs of **Xerox**, and Tat Lam of **TCL**, build the first experimental Ethernet at 2.94 Mbps

1974



Ethernet proliferates within **Xerox PARC** as the means of communication between Xerox Alto computers and other facilities within PARC

1975



Patent filed for Ethernet by Bob Metcalfe, David Boggs, Chuck Thacker and Butler Lampson

1976



Bob Metcalf and David Boggs publish “Ethernet: Distributed Packet Switching for Local Computer Networks”

1977



**Xerox** Ethernet-connected “Office of the Future” demonstrated at Xerox world wide sales meeting in Boca Raton, Florida

1978



**Xerox** develops X wire, a 10 Mbps Ethernet running on thick 50 Ohm coaxial cable



**Ethernet**  
Technology Summit

1979

1980

1981

1982

1983

1984

1985



Urged by Metcalfe, David Liddle of **Xerox** persuades Gordon Bell of **DEC** and Phil Kaufman of **Intel** to jointly develop an Ethernet specification based on X wire

Ethernet name reestablished

Ralph Ungermann and Charlie Bass found **Ungermann Bass** to develop Ethernet-based terminal access products

IEEE Project 802 committee to develop local area networking standards meets for first time

**DIX** consortium (Digital/Intel/Xerox ) publishes "Blue Book" Ethernet Specification V1.0

**Mayfield Fund, New Enterprise Assoc** and **Melchor Venture Mgmt** lead \$1.1 million 1st round financing for **3Com**

**Interlan** founded to develop Ethernet components

**Bridge Communications** founded to develop Ethernet-based terminal access and internetworking products

**Excelan** founded to develop Ethernet components

**DAVID Systems** founded to develop multiplexing over a single twisted pair

**3Com** introduces PC card w/BNC for thin coax Ethernet

**Sun Microsystems** founded to develop Unix workstations

**Novell** founded to develop software to run on Ethernet

**Cabletron** founded as a cabling installation company

802.3 specification formally approved by IEEE

**BICC Data Networks** founded as one of the first European companies to provide Ethernet products

ISO acts to adopt IEEE 802.3 as an ISO/IEC Standard

IEEE 802.3 is approved as an ANSI Standard

**Cisco** founded to develop router products

First edition of IEEE Std 802.3 published as the IEEE version of Ethernet

**Synoptics** founded to develop fiber optic and twisted-pair Ethernet hubs

Early NIC has both COAX and RJ-45 support



# Ethernet

## Technology Summit

1986

1987

1988

1989

1990

1991

1992



**Wellfleet** founded to develop router products

**Network General** founded to develop Ethernet monitoring tools

**3Com** acquires **Bridge** and enters the router business

**Kalpana** and **Alantec** founded to develop intelligent switching hubs

**SynOptics** starts delivering Ethernet over telephone twisted pair hubs and transceivers

**Asante** founded to provide Ethernet Adapter Cards for Apple Macintosh Computers

**Ungermann Bass** acquired by **Tandem Computers**

**Network Peripherals** founded to manufacture high-speed FDDI networks

FDDI paves the way for Fast Ethernet

**Crescendo** founded to develop twisted-pair FDDI network products and Ethernet hubs

IEEE Std 802.3i (10Base-T) approved, Ethernet takes off

PCMCIA PC Card interface released, highly used for Ethernet ports, especially on laptops

**CERN** proposes hypertext that begins linking content to form the web

TIA/EIA-568-A.1-1991 cabling standard released, providing standards basis for Ethernet twisted pair and fiber optic media

**Grand Junction Networks** founded to develop 100 Mbps Fast Ethernet Products



# Ethernet

## Technology Summit

1993

1994

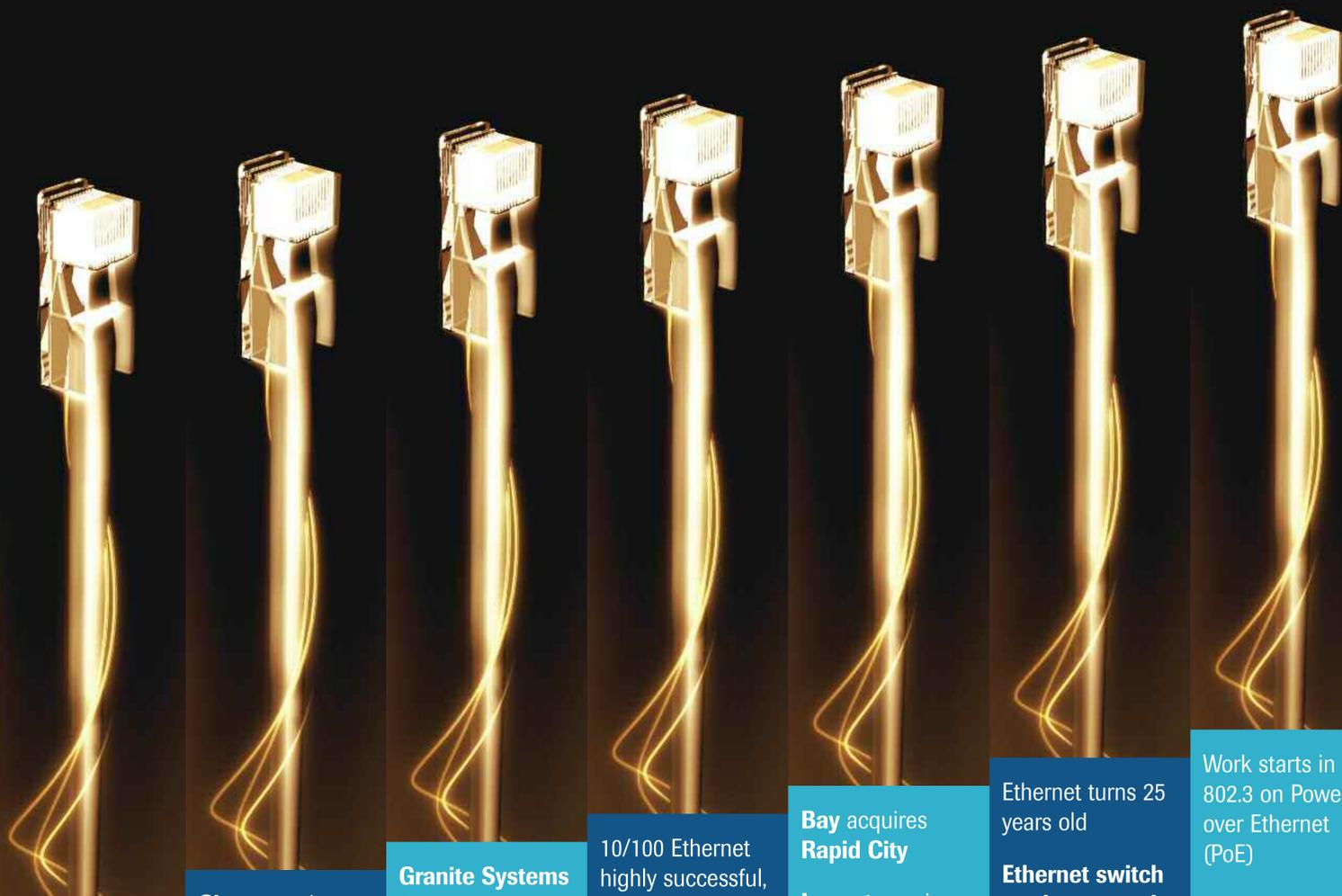
1995

1996

1997

1998

1999



**Cisco** acquires **Crescendo** to enter the Ethernet Switch business

**3Com** acquires **BICC Data Networks**

100Mbps was rapture 802.3, 802.12 created for 100 VG AnyLAN

**Cisco** acquires **Kalpana**

**Synoptics** and **Wellfleet** merge to form **Bay Networks**

Netscape Navigator 1.0 released for free to make the World Wide Web broadly accessible

**Granite Systems** founded to develop Gigabit Ethernet Products

**Compaq** acquires **Networth**

**3Com** acquires **Chipcom**

**Cisco** acquires **Grand Junction Networks**

IEEE Std 802.3u (100BASE-T) and 802.12 100 VG AnyLAN approved simultaneously

Multiple companies introduce 10/100 Ethernet adapters

Dotcom boom starts, first Voice over IP, NSFNET commercialized, networking takes off

**Ethernet switch market exceeds \$1 billion**

10/100 Ethernet highly successful, swamps out 100 VG AnyLAN

**Alteon, Extreme, Foundry, Packet Engines, Prominent, Rapid City, Yago** founded to develop Gigabit Ethernet Equipment

**Cisco** acquires **Granite Systems** as Gigabit play

**Bay** acquires **Rapid City**

**Lucent** acquires **Prominent**

Ethernet turns 25 years old

**Ethernet switch market exceeds \$5 billion**

Work starts in 802.3 on Power over Ethernet (PoE)



# Ethernet

## Technology Summit

2000

2001

2002

2003

2004

2005

2006



IEEE Std 802.3ad Link Aggregation approved, Parallel links for trunking  
**Ethernet switch market exceeds \$10 billion**



IEEE 802.17 Resilient Packet Ring (xport of Ethernet format packets) has first meeting



10 Gigabit Ethernet approved, standardizes both LAN PHY and WAN PHY



IEEE Std 802.3af approved  
Power over Ethernet provides up to 12.95 watts delivered over CAT3/5/6 cabling



802.3 10GBASE-CX4 approved and yields low cost/high speed/short reach copper links  
IEEE Std 802.17 published  
**Facebook** launches



**YouTube** founded  
**Ethernet switch market ships 1 billionth port**



**Twitter** begins  
**Ethernet switch market exceeds \$15 billion**



**Ethernet**  
Technology Summit

2007

2008

2009

2010

2011

2012

2013

Backplane Ethernet approved as IEEE Std 802.3ap supports numerous applications

IEEE Std 802.3, 2008 Revision published as 5 volume set

IEEE Std 802.3at approved

Power over Ethernet Plus (PoE+) supports up to 25.5 watts over CAT5/6 cabling

**Ethernet switch market ships 2 billionth port**

IEEE Std 802.3ba approved for 40G & 100G Ethernet

CFP module is released to support 40GbE and 100GbE

CXP module is released to support 100GBASE-SR10

**Ethernet switch market exceeds \$20 billion**

**Ethernet switch market ships 3 billionth port**

Amendments 802.3bf, to support Time Synchronization Protocols, and 802.3b, to support Serial Operation over Single Mode Fiber at 40 Gb/s, approved

IEEE Std 802.3, 2012 Revision published as 6 volume set

100GbE Backplane and copper cables approved as 802.3bj

Projects in the works for automotive applications and even higher speeds



Ethernet  
Technology Summit