

# Wealth Creation at the University / Industry Interface

Andy Hopper



Computer Laboratory  
University of Cambridge

# Computer Laboratory

## Computer Lab:

An academic department which encompasses Computer Science, along with many aspects of Engineering, Technology, and Mathematics.

It consists of 35 full-time academic staff, 25 support staff, 35 post-doctoral research workers and 155 PhD students.

Computer Lab and alumni have created 140+ companies

Computer Lab Industry Club

Computer Lab Alumni Association (CL Ring)

# The University

- Role
- Funding
  - Peer review
- People
  - Incentives / Motivation / Pay
  - Teaching / Admin / Performance Measurement
  - Flexibility

# Wealth Creation

- University
- Large Company
- Small Company (SME)
- Start-up / Spin-out
- Cambridge Big Successes
  - ARM, Virata, Autonomy, TTP.COM, CSR
- Intermediate Organisations
  - CCL, TTP, Olivetti Research Lab (AT&T Labs Cambridge)

# A Framework for Spin-outs

- Fiscal Context
- History / Location / Model
- The Team
- The Spin-out
- IPR
- Capital / VCs
- Corporate Investors
- Shareholdings
- CEO / VP Marketing
- The Deal
- Building Value
- Exits

# Issues

- IPR valuation
- Secondment
- Ordinary shares
- Capital
- VCs
- Investment Agreement
- Board of Directors
- Growth
- Public Markets
- Letting go / Losing shirt

# Cambridge Cluster in Practice

- Human Capital
  - Role Models, Dynasties
- The Process
  - Government, Angels, VCs, Corporate Investors
- Professional services
- Quantity, Quality, Flexibility
  - Rewards, Respect, Secondments, Range, Incentives, Licencing, Spin-outs

# Challenges

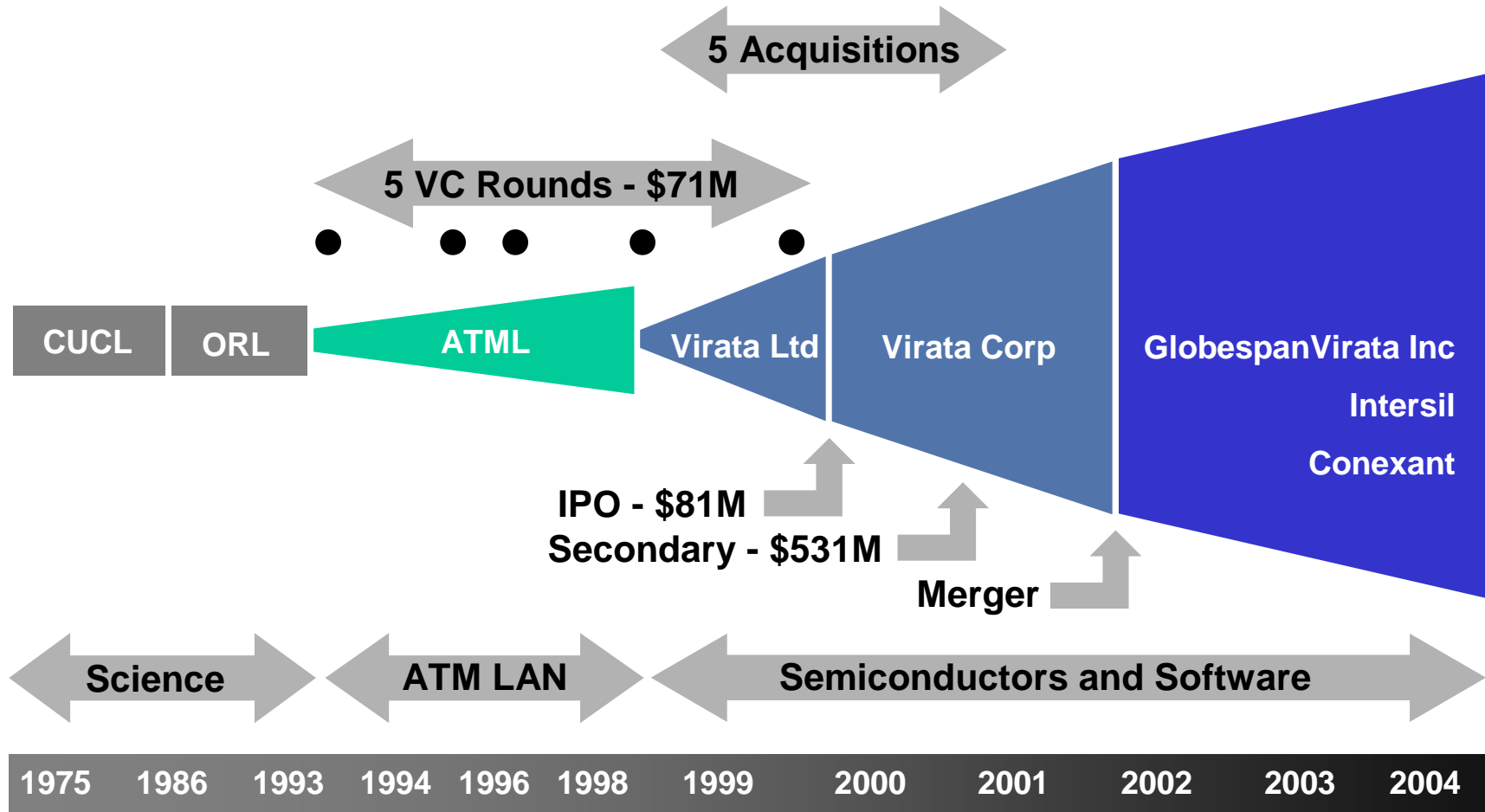
- Funding Gap
- Institution Gap
- Obstacles / Barriers
- Constraints
- Sustainability



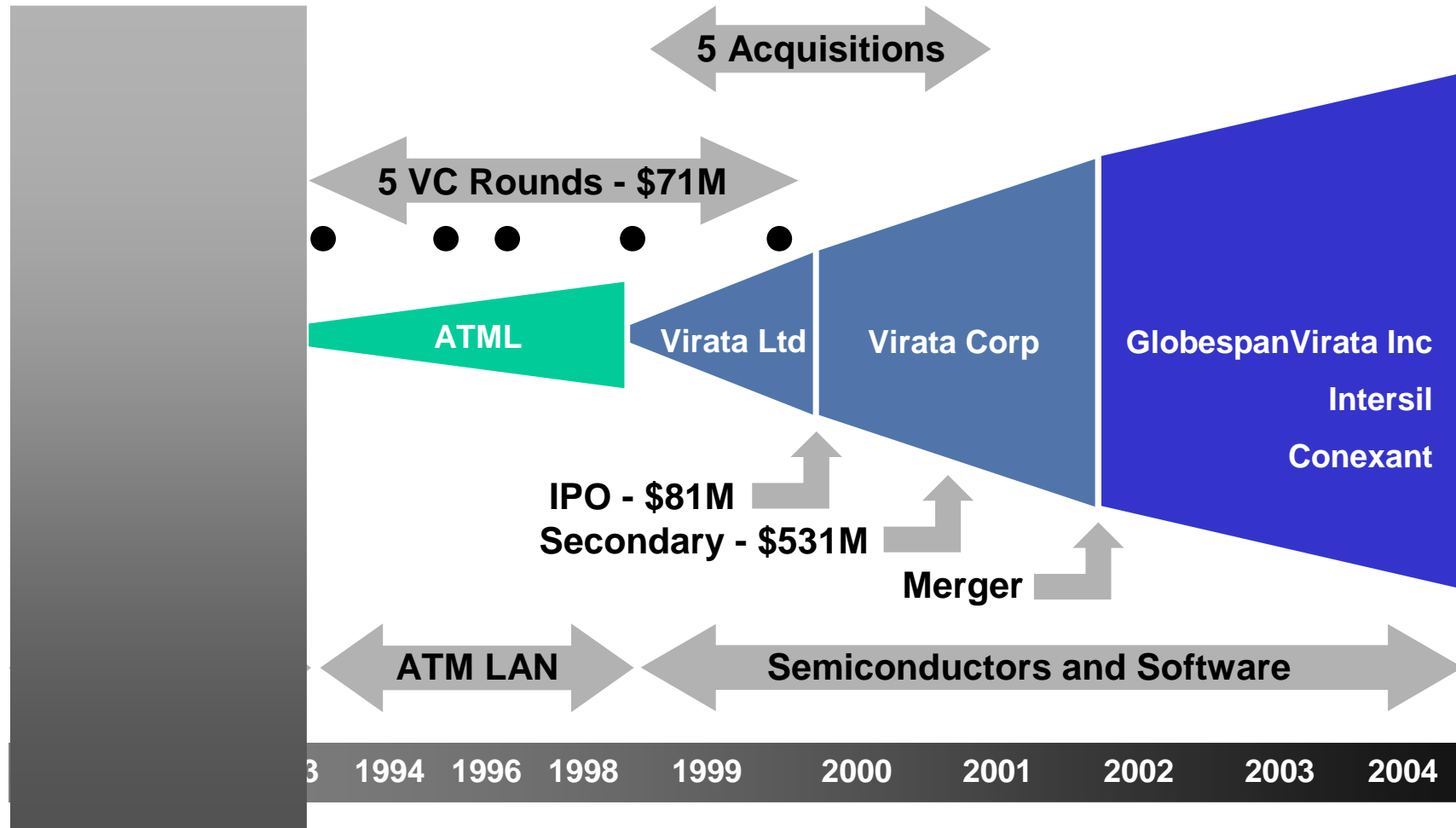
# My Examples

- 1978** **Orbis Ltd**, networking equipment.  
Sold to Acorn in 1979.
- 1979** **Acorn Computer plc**, (formerly CPU Ltd), BBC microcomputer system.  
IPO on Unlisted Securities Market (London) in 1982, spun out ARM in 1990, de-listed in 1999 and ARM shares distributed in lieu.
- 1985** **Qudos Ltd**, semiconductor prototyping and CAD software, based near Oxford.
- 1986** **AT&T Labs Cambridge Ltd**, (formerly Olivetti Research Ltd), industrial research, closed in 2002.  
Sold to AT&T in 1999.
- 1993** **Virata Corp**, (formerly ATM Ltd), DSL semiconductor, based in Newport Beach.  
IPO on NASDAQ in 1999, secondary offering raised \$550M in 2000, merged with Globespan Corp in 2001, sold to Conexant 2003.
- 1996** **Telemedia Systems Ltd**, (now IPV Ltd), video management software, based in Cambridge.
- 1998** **Adaptive Broadband Ltd** (now Axxcelera Inc), fixed wireless equipment, based in Santa Barbara/Cambridge.  
Sold to California Microwave Corp in 1998.
- 2000** **Cambridge Broadband Ltd**, fixed wireless equipment, based in Cambridge.
- 2002** **RealVNC Ltd**, remote control software, based in Cambridge/Cyberspace.
- 2002** **Level 5 Networks Ltd**, (now Solarflare Inc), network semiconductor, based in Irvine/Cambridge.
- 2002** **Ubisense Ltd**, location systems, based in Cambridge/Denver.
- 2005** **AdventiQ Ltd**, remote control semiconductor, based in Cambridge.

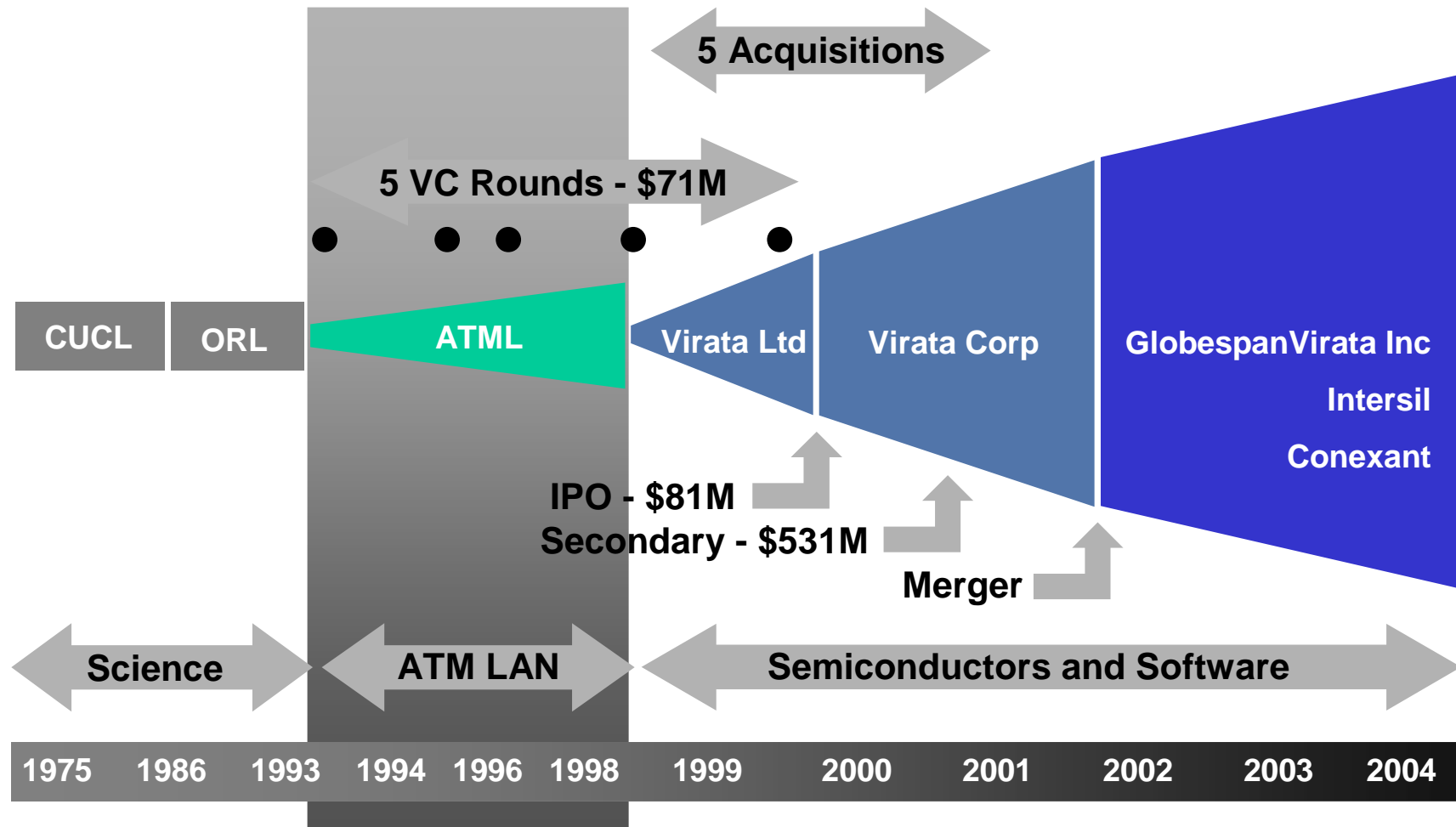
# Evolution of Virata



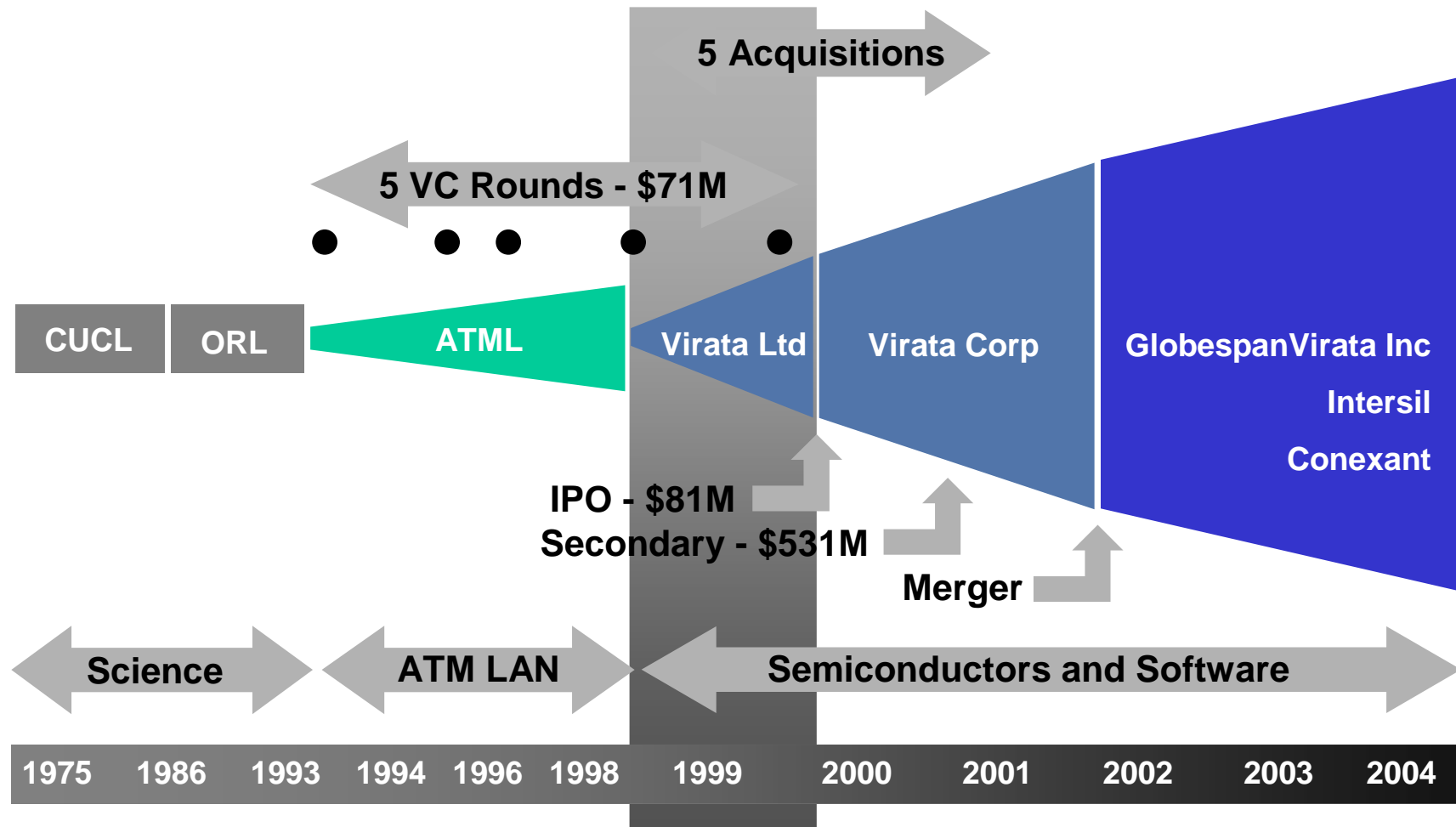
# The Science and Technology Years



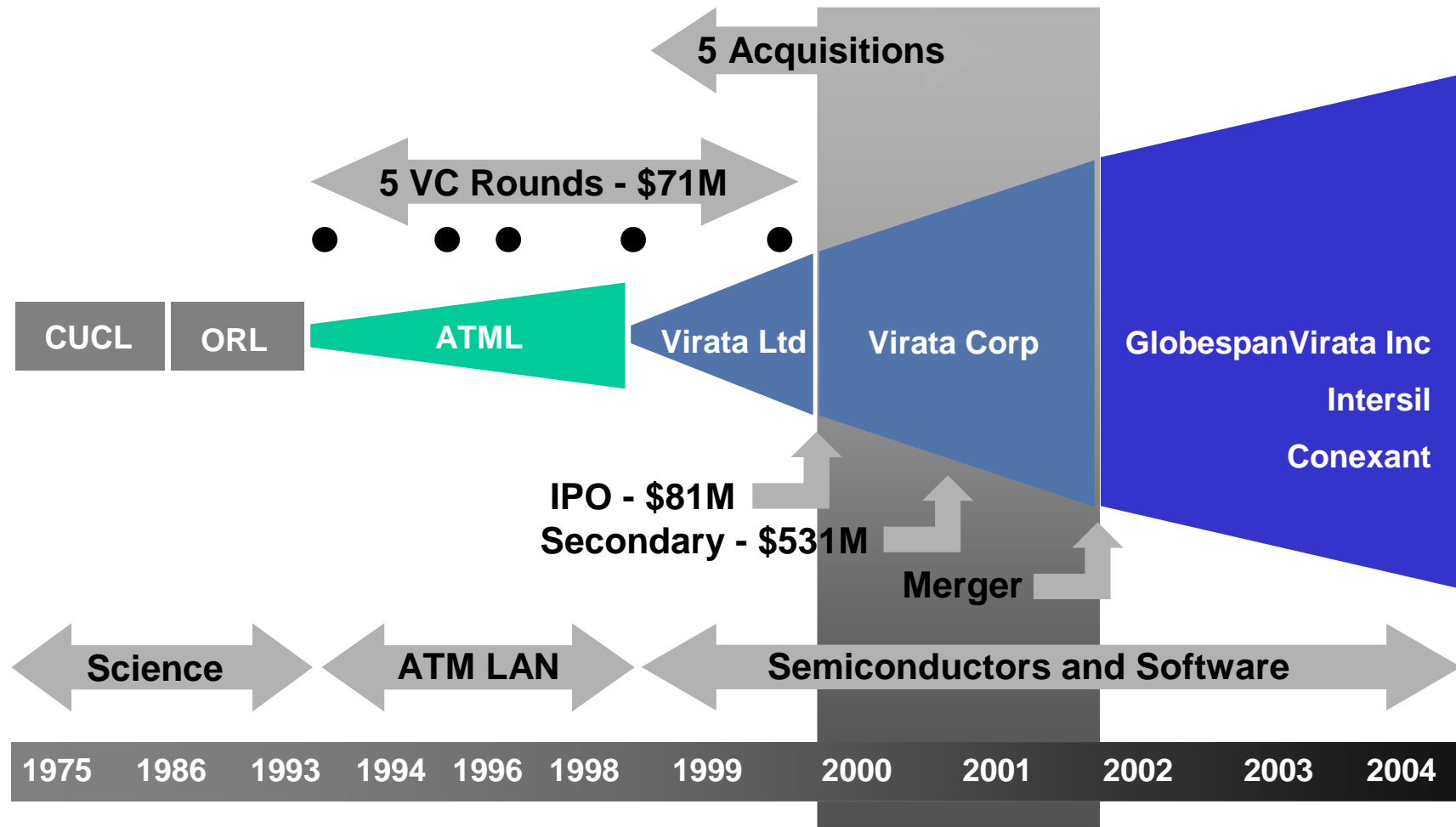
# The ATM LAN Years



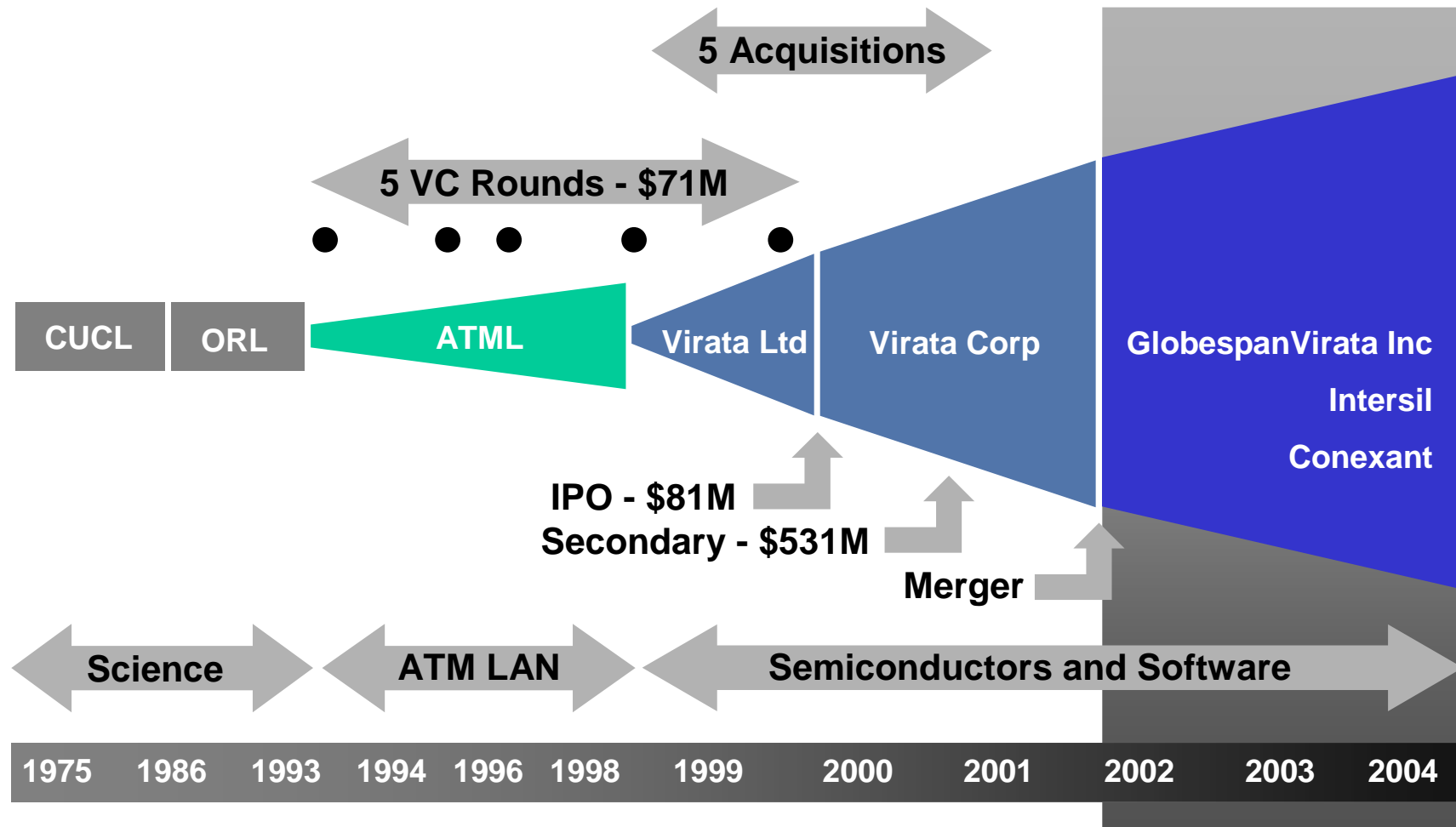
# New Direction: DSL Chips



# The Meteor Years



# Industry Consolidation



# What Was It?

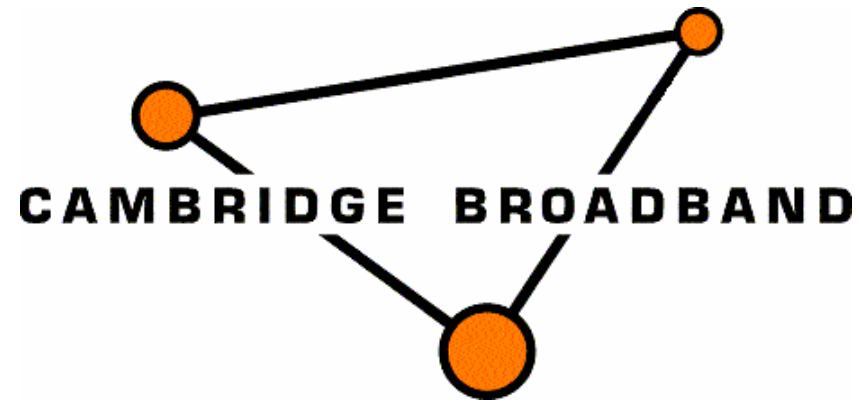
- 40% of world's DSL connections
- 1-5 \$Bn Valuation
- 20+ years from university research to public company
- 7 financing rounds - \$682 Million capital raised
- 6 years from formation to IPO
- 5 acquisitions
- 4 Sales VPs
- 3 CEOs
- 2 different businesses
- 1 merger





# My Examples

- 1978** **Orbis Ltd**, networking equipment.  
Sold to Acorn in 1979.
- 1979** **Acorn Computer plc**, (formerly CPU Ltd), BBC microcomputer system.  
IPO on Unlisted Securities Market (London) in 1982, spun out ARM in 1990, de-listed in 1999 and ARM shares distributed in lieu.
- 1985** **Qudos Ltd**, semiconductor prototyping and CAD software, based near Oxford.
- 1986** **AT&T Labs Cambridge Ltd**, (formerly Olivetti Research Ltd), industrial research, closed in 2002.  
Sold to AT&T in 1999.
- 1993** **Virata Corp**, (formerly ATM Ltd), DSL semiconductor, based in Newport Beach.  
IPO on NASDAQ in 1999, secondary offering raised \$550M in 2000, merged with Globespan Corp in 2001, sold to Conexant 2003.
- 1996** **Telemedia Systems Ltd**, (now IPV Ltd), video management software, based in Cambridge.
- 1998** **Adaptive Broadband Ltd** (now Axxcelera Inc), fixed wireless equipment, based in Santa Barbara/Cambridge.  
Sold to California Microwave Corp in 1998.
- 2000** **Cambridge Broadband Ltd**, fixed wireless equipment, based in Cambridge.
- 2002** **RealVNC Ltd**, remote control software, based in Cambridge/Cyberspace.
- 2002** **Level 5 Networks Ltd**, (now Solarflare Inc), network semiconductor, based in Irvine/Cambridge.
- 2002** **Ubisense Ltd**, location systems, based in Cambridge/Denver.
- 2005** **AdventiQ Ltd**, remote control semiconductor, based in Cambridge.



## Fixed Wireless Backhaul

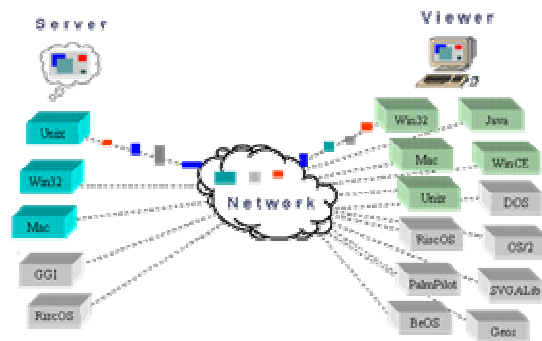


# My Examples

- 1978 **Orbis Ltd**, networking equipment.  
Sold to Acorn in 1979.
- 1979 **Acorn Computer plc**, (formerly CPU Ltd), BBC microcomputer system.  
IPO on Unlisted Securities Market (London) in 1982, spun out ARM in 1990, de-listed in 1999 and ARM shares distributed in lieu.
- 1985 **Qudos Ltd**, semiconductor prototyping and CAD software, based near Oxford.
- 1986 **AT&T Labs Cambridge Ltd**, (formerly Olivetti Research Ltd), industrial research, closed in 2002.  
Sold to AT&T in 1999.
- 1993 **Virata Corp**, (formerly ATM Ltd), DSL semiconductor, based in Newport Beach.  
IPO on NASDAQ in 1999, secondary offering raised \$550M in 2000, merged with Globespan Corp in 2001, sold to Conexant 2003.
- 1996 **Telemedia Systems Ltd**, (now IPV Ltd), video management software, based in Cambridge.
- 1998 **Adaptive Broadband Ltd** (now Axxcelera Inc), fixed wireless equipment, based in Santa Barbara/Cambridge.  
Sold to California Microwave Corp in 1998.
- 2000 **Cambridge Broadband Ltd**, fixed wireless equipment, based in Cambridge.
- 2002 **RealVNC Ltd**, remote control software, based in Cambridge/Cyberspace.
- 2002 **Level 5 Networks Ltd**, (now Solarflare Inc), network semiconductor, based in Irvine/Cambridge.
- 2002 **Ubisense Ltd**, location systems, based in Cambridge/Denver.
- 2005 **AdventiQ Ltd**, remote control semiconductor, based in Cambridge.



## Universal Remote Control



# My Examples

- 1978** **Orbis Ltd**, networking equipment.  
Sold to Acorn in 1979.
- 1979** **Acorn Computer plc**, (formerly CPU Ltd), BBC microcomputer system.  
IPO on Unlisted Securities Market (London) in 1982, spun out ARM in 1990, de-listed in 1999 and ARM shares distributed in lieu.
- 1985** **Qudos Ltd**, semiconductor prototyping and CAD software, based near Oxford.
- 1986** **AT&T Labs Cambridge Ltd**, (formerly Olivetti Research Ltd), industrial research, closed in 2002.  
Sold to AT&T in 1999.
- 1993** **Virata Corp**, (formerly ATM Ltd), DSL semiconductor, based in Newport Beach.  
IPO on NASDAQ in 1999, secondary offering raised \$550M in 2000, merged with Globespan Corp in 2001, sold to Conexant 2003.
- 1996** **Telemedia Systems Ltd**, (now IPV Ltd), video management software, based in Cambridge.
- 1998** **Adaptive Broadband Ltd** (now Axxcelera Inc), fixed wireless equipment, based in Santa Barbara/Cambridge.  
Sold to California Microwave Corp in 1998.
- 2000** **Cambridge Broadband Ltd**, fixed wireless equipment, based in Cambridge.
- 2002** **RealVNC Ltd**, remote control software, based in Cambridge/Cyberspace.
- 2002** **Level 5 Networks Ltd**, (now Solarflare Inc), network semiconductor, based in Irvine/Cambridge.
- 2002** **Ubisense Ltd**, location systems, based in Cambridge/Denver.
- 2005** **AdventiQ Ltd**, remote control semiconductor, based in Cambridge.



Ethernet Everywhere



# My Examples

- 1978** **Orbis Ltd**, networking equipment.  
Sold to Acorn in 1979.
- 1979** **Acorn Computer plc**, (formerly CPU Ltd), BBC microcomputer system.  
IPO on Unlisted Securities Market (London) in 1982, spun out ARM in 1990, de-listed in 1999 and ARM shares distributed in lieu.
- 1985** **Qudos Ltd**, semiconductor prototyping and CAD software, based near Oxford.
- 1986** **AT&T Labs Cambridge Ltd**, (formerly Olivetti Research Ltd), industrial research, closed in 2002.  
Sold to AT&T in 1999.
- 1993** **Virata Corp**, (formerly ATM Ltd), DSL semiconductor, based in Newport Beach.  
IPO on NASDAQ in 1999, secondary offering raised \$550M in 2000, merged with Globespan Corp in 2001, sold to Conexant 2003.
- 1996** **Telemedia Systems Ltd**, (now IPV Ltd), video management software, based in Cambridge.
- 1998** **Adaptive Broadband Ltd** (now Axxcelera Inc), fixed wireless equipment, based in Santa Barbara/Cambridge.  
Sold to California Microwave Corp in 1998.
- 2000** **Cambridge Broadband Ltd**, fixed wireless equipment, based in Cambridge.
- 2002** **RealVNC Ltd**, remote control software, based in Cambridge/Cyberspace.
- 2002** **Level 5 Networks Ltd**, (now Solarflare Inc), network semiconductor, based in Irvine/Cambridge.
- 2002** **Ubisense Ltd**, location systems, based in Cambridge/Denver.
- 2005** **AdventiQ Ltd**, remote control semiconductor, based in Cambridge.



The Smart Space company



# My Examples

- 1978** **Orbis Ltd**, networking equipment.  
Sold to Acorn in 1979.
- 1979** **Acorn Computer plc**, (formerly CPU Ltd), BBC microcomputer system.  
IPO on Unlisted Securities Market (London) in 1982, spun out ARM in 1990, de-listed in 1999 and ARM shares distributed in lieu.
- 1985** **Qudos Ltd**, semiconductor prototyping and CAD software, based near Oxford.
- 1986** **AT&T Labs Cambridge Ltd**, (formerly Olivetti Research Ltd), industrial research, closed in 2002.  
Sold to AT&T in 1999.
- 1993** **Virata Corp**, (formerly ATM Ltd), DSL semiconductor, based in Newport Beach.  
IPO on NASDAQ in 1999, secondary offering raised \$550M in 2000, merged with Globespan Corp in 2001, sold to Conexant 2003.
- 1996** **Telemedia Systems Ltd**, (now IPV Ltd), video management software, based in Cambridge.
- 1998** **Adaptive Broadband Ltd** (now Axxcelera Inc), fixed wireless equipment, based in Santa Barbara/Cambridge.  
Sold to California Microwave Corp in 1998.
- 2000** **Cambridge Broadband Ltd**, fixed wireless equipment, based in Cambridge.
- 2002** **RealVNC Ltd**, remote control software, based in Cambridge/Cyberspace.
- 2002** **Level 5 Networks Ltd**, (now Solarflare Inc), network semiconductor, based in Irvine/Cambridge.
- 2002** **Ubisense Ltd**, location systems, based in Cambridge/Denver.
- 2005** **AdventiQ Ltd**, remote control semiconductor, based in Cambridge.



ADVENTIQ

- ▶ **Home**
- ▶ KVM-over-IP Technology
- ▶ Products and services
- ▶ White Papers
- ▶ About us
- ▶ Press
- ▶ Contact

## Welcome

Welcome to **Adventiq**, the home of high performance KVM-over-IP silicon solutions.



# My Ecosystem

