



Miracles

Hermann Hauser

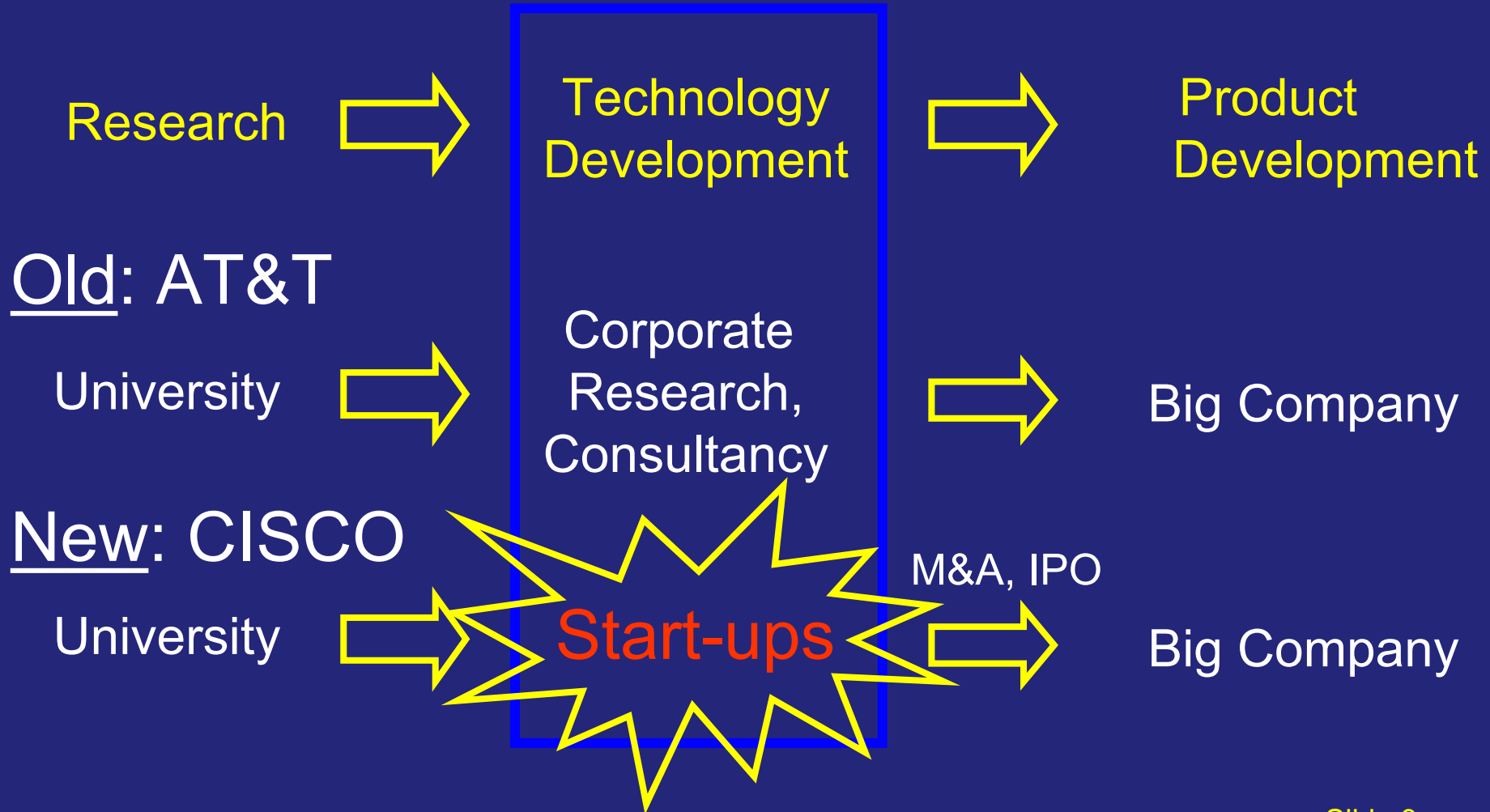


Why do Miracles happen?

- People
- Disruptive Technology
- Clusters and Venture Capital
- Community



From R to D





European Miracles

- Google
- Willex
- ARM
- CSR
- Skype
- Solexa
- Plastic Electronics



Wilex

- Biopharmaceuticals
- Cancer
- Munich based
- > \$200m market cap
- 1996: winner business plan competition
- Frankfurt stock exchange



ARM

- Acorn Team plus Sir Robin Saxby
- Acorn Risc Machine
- Value: Low Power, Low Cost, Instruction set
- ARM Platform: 2 BILLION in 2005
- De Facto Standard:
 - Mobile Phones
 - PDAs
 - iPod
 - Gameboy
- ARM Community
- Market value \$3bn



Skype

- Founded 2002
- Nicolas Zenstroem
- Janus Friis
- Sold to Ebay €2.6bn +€1.4bn earn out
- P2P VOIP on internet

Microsoft
 WindRiver
 symbian
 integrated systems
 E KADAK
 EPOC
 Sun
 Axe Inc
 JAVA
 ETNOTEAM
 eL
 GEOWORKS
 Acorn
 Tao Systems
 FIRMWARE SYSTEMS
 Eonic
 microware
 Mentor graphics
 ACCESS
 U S SOFTWARE
 CMX CORP

Tektronix
cadence
 CoWare
 TEXAS INSTRUMENTS
 hp HEWLETT PACKARD
 OROGAWA
 Mentor graphics
 Aliant Communications
 MetaWare
 EPI
 Green Hills SOFTWARE
 ADS
 SYNOPSYS
 COGENT
 CYGNUS
 LAUTERBACH



Acorn
TEKNOA
SYMBIONICS
SSL
Sirius communications
ORIGIN
neXus
WIPRO
Virata
Acapella
 N1
 PANTEC
 OXFORD SEMICONDUCTOR

ORACLE
ENSIGMA
JAVA
POLYHEDRA
MOTOROLA
 Lexicus Division
AltoCom
RONIER
 VOCALIS
 VITAL
 MOTOROLA
 BBT Limited



CSR

- CCL team spun out in 1999
- First Single chip Bluetooth: low power, low cost, small form factor
- First single chip 802.11: low power, low cost, small form factor
- Fabless Chip company
- BT, 802.11 WIFI standard
- Mobile phone community
- 2005: Revenues:\$500m, Profits: \$100m
- Market value \$2bn



Cambridge

- University ranked #3 in the world
- 72 Nobel laureates:
 - global #1
 - More than any country except US and UK
- High-tech cluster: #1 in Europe
 - 1,000 high-tech companies
 - 40,000 employees
- ARM, CSR, CDT, Plastic Logic



Cavendish Laboratory

- Maxwell: useful equations
- JJ Thomson: electron
- Earnest Rutherford: Proton
- Chadwick: Neutron
- Crick & Watson: DNA
- Richard Friend, Jeremy Burrows: OLEDs
- Henning Sirringhaus: Plastic transistors, C-mos



Plastic Electronics

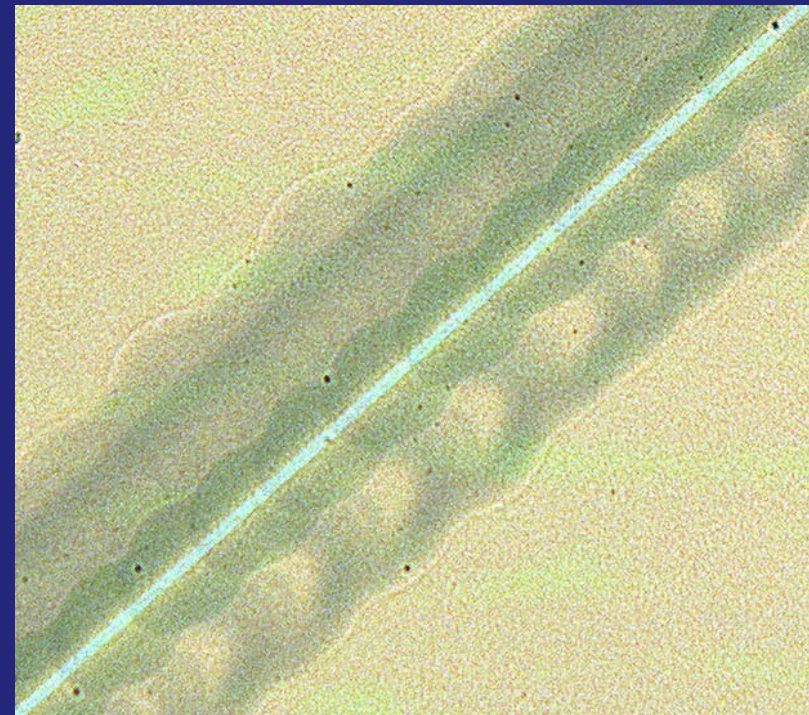
- Richard Friend, Henning Sirringhaus, Stuart Evans + Ink-jet cluster
- Plastic transistors: low cost, flexible, large area
- New Value stack for Plastic Electronics
- Flexible displays
- Cambridge Ink-jet, polymer community
- PEM centre?

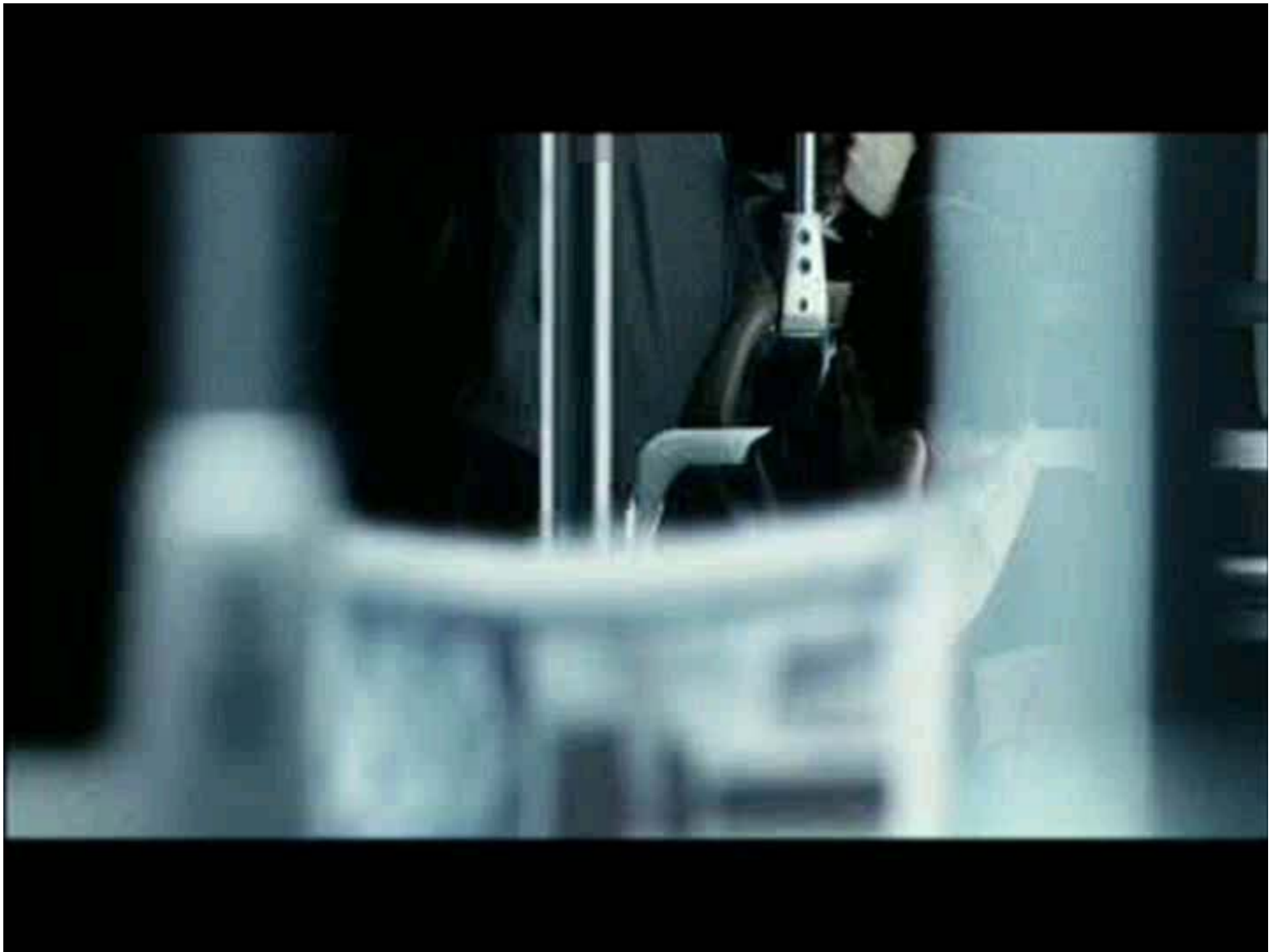


First Transistor 20th Century



Printed Transistor 21st Century







Amadeus Capital Partners

E-Newspapers

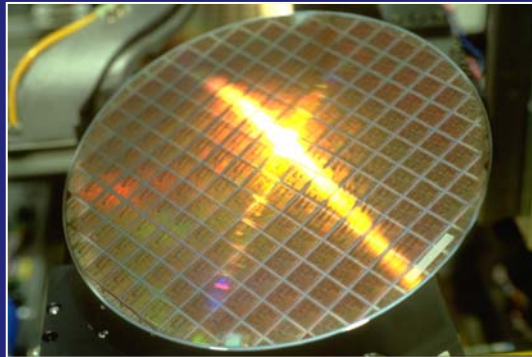


Source: IBM



Silicon vs. Plastic...

Conventional
Semiconductor



Photolithographic patterning, high temperatures & vacuum processing

Printed Plastic
Electronics



Direct printing & solution processing

Plastic Logic Flexible Display



Solexa

- Ultrafast Gene-sequencing
- Origin: Chemistry Dept. David Klenerman, Subramanan
- CEO: John West
- Whole Genenome in less than one Week, for less than \$100,000
- Personalised medicine
- Camp: Sanger centre, Lynx



Corporate Venture Capital

- ICT: Intel, Cisco, Siemens
- BIO: more UK activity
- Most important MISSING link



When is Innovation Successful?

When a defensible break-through connects with a large market.



Where does Innovation happen?

In Clusters like

Silicon Valley, Route 128, North Carolina

Cambridge, London

Munich, Paris, Stockholm, Helsinki,

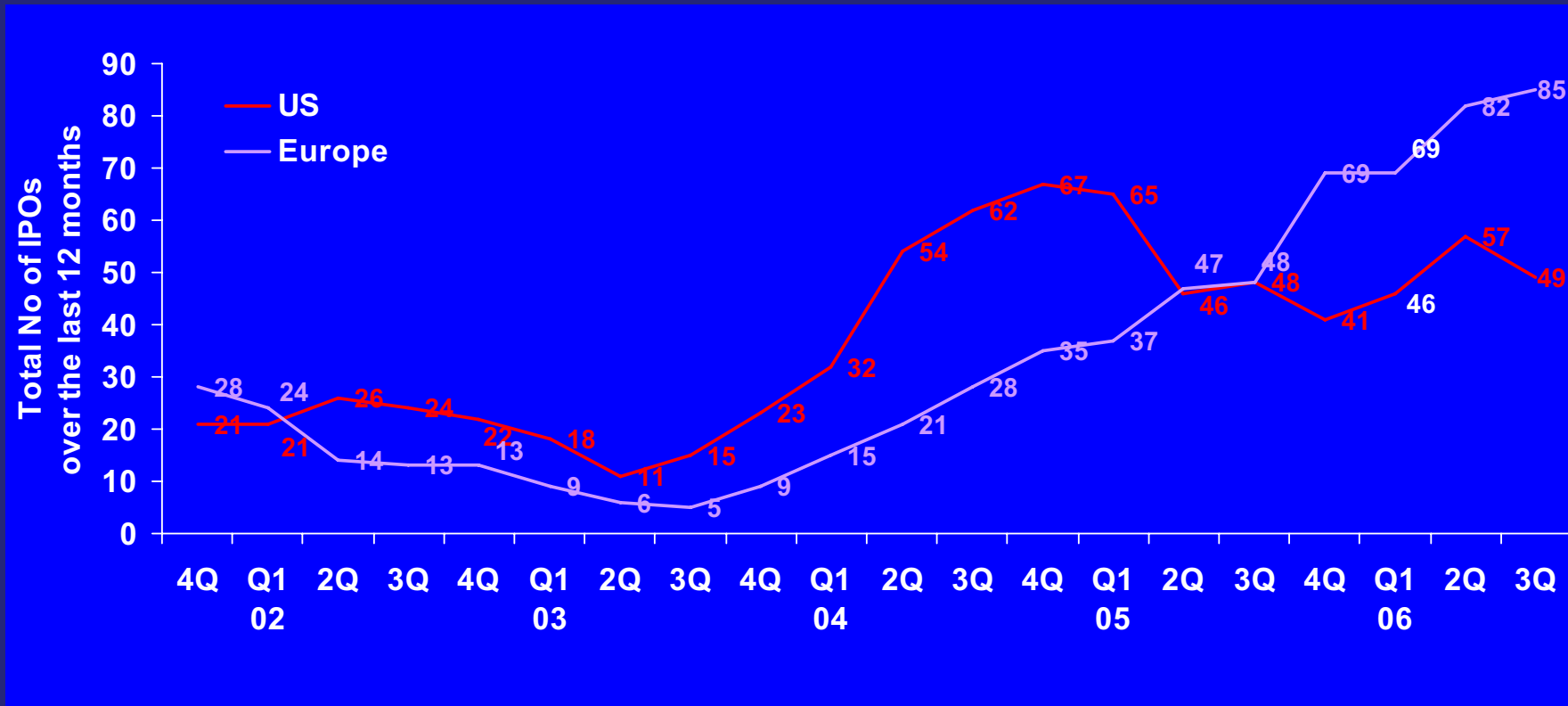


Clusters

- World Class University
- Entrepreneurial Spirit
- Venture Capital
- Supportive Government: CGT, R&D credits, Immigration
- Close Relationship with Lead Companies
- Infrastructure: Legal, Accounting, Leasing
- Real Estate: Availability, Short Leases
- People Network!

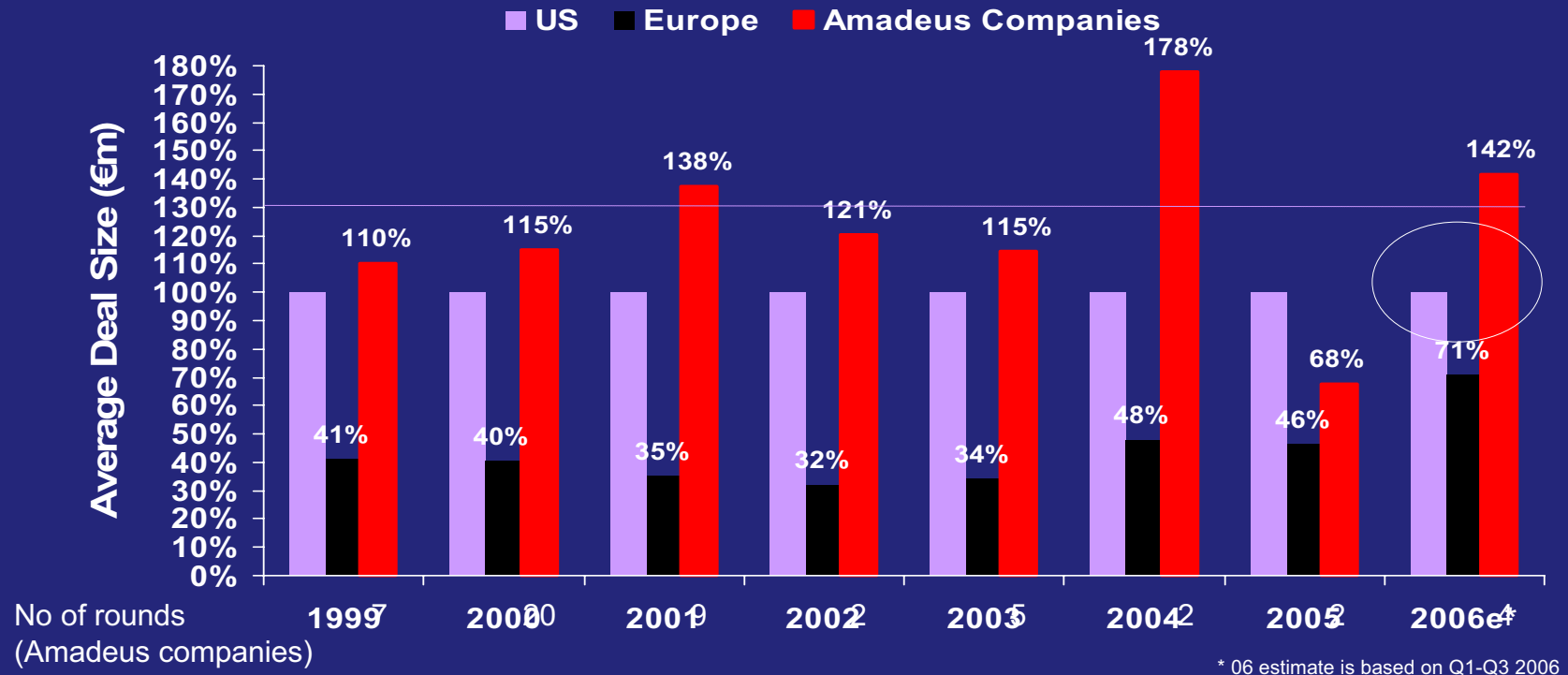


Venture backed IPO's





Average Deal Size, Seed & First stage



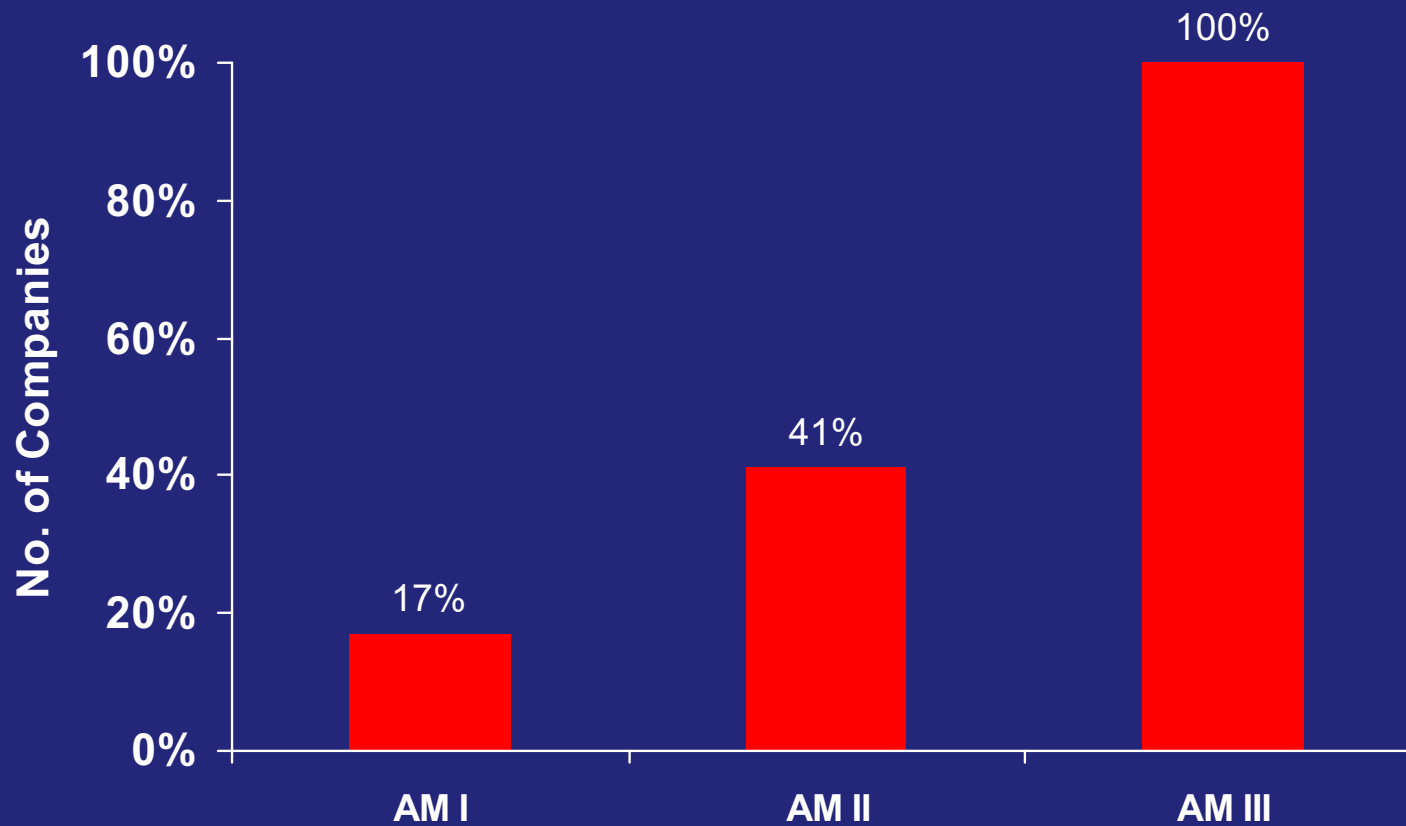
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Note: Later Rounds include Second, subsequent Rounds & Restarts.
Europe shown as percentage to US
Source: VentureSource, Amadeus Analysis



Serial Entrepreneurs

Serial Entrepreneurs





Conclusion

- Miracles happen all the time
- Technology Development Key
- Plastic Electronics NEXT Growth Sector
- Needs Clusters and VC
- Have Faith in Europe