

Coming of Age Information Tehnology grows up

The Economist

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The Future of Technology

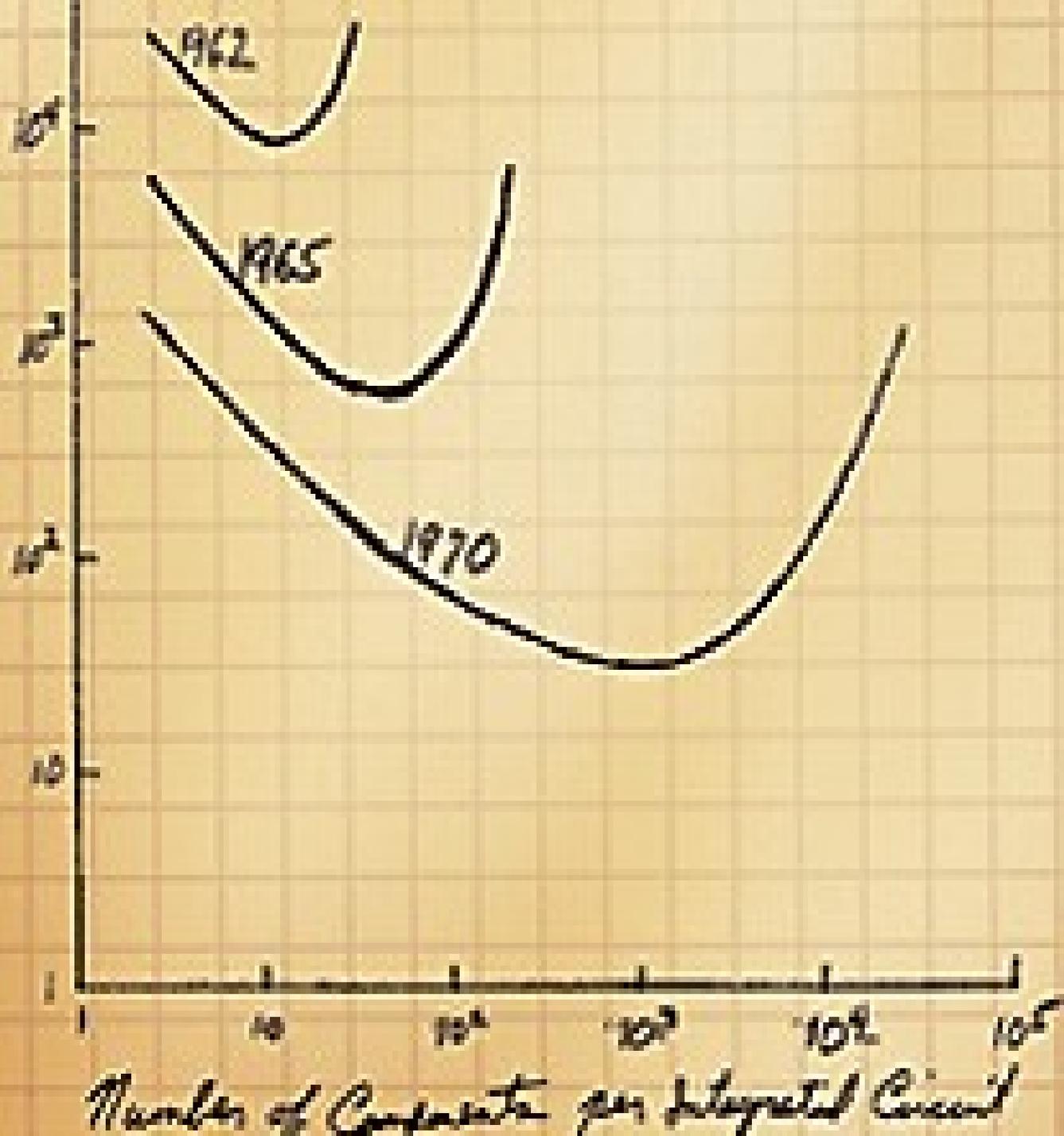
Edited by Tom Standage

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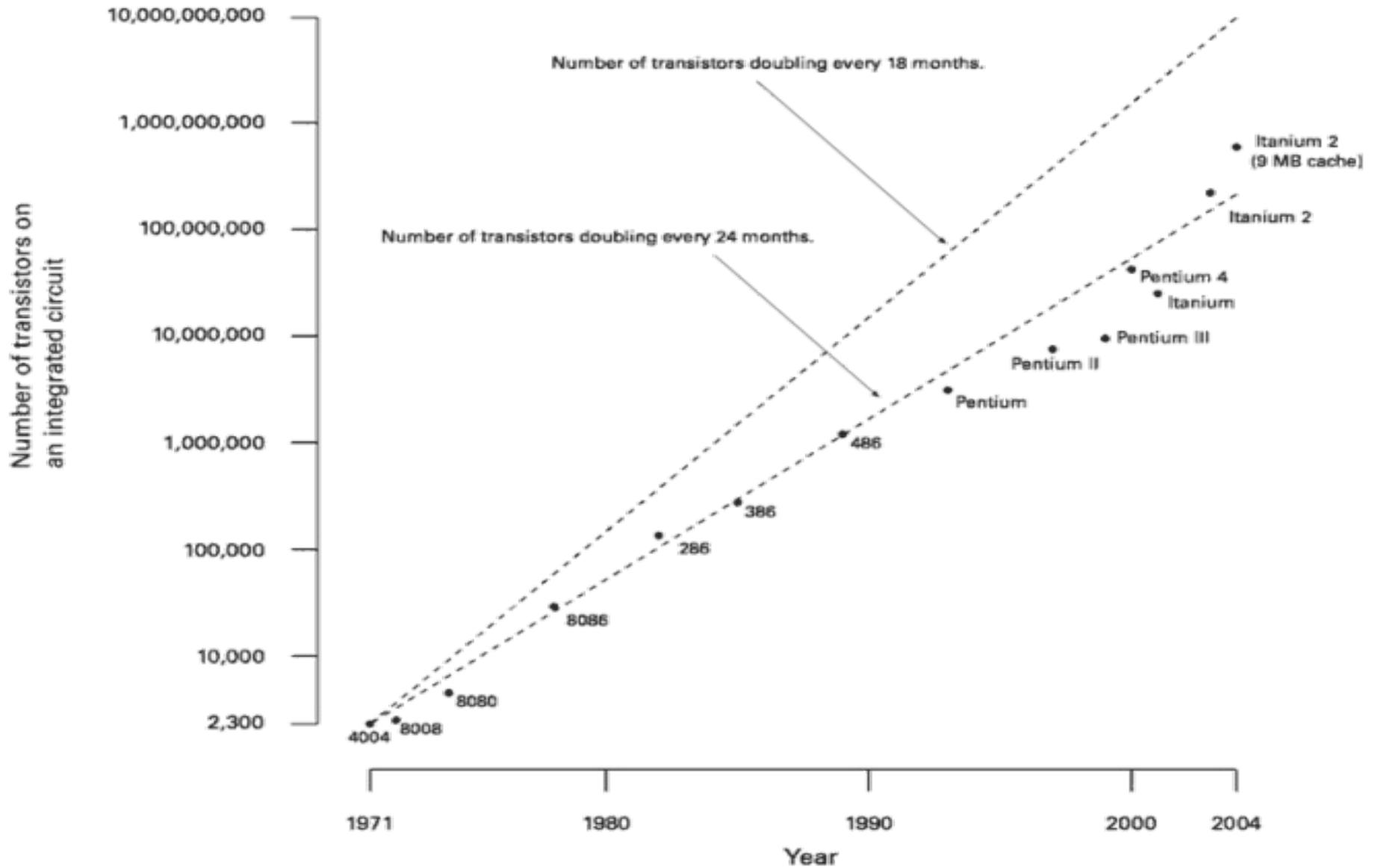
The economics of IT

- Moore's Law
 - Transistor density on single chip doubled every 18 months
 - Increase in processing power
 - Reduction in price
- Correct betw 1971 and 2001
- Self-fulfilling prophecy → ground for optimism
- Internet boom

Relative Manufacturing Cost per Component



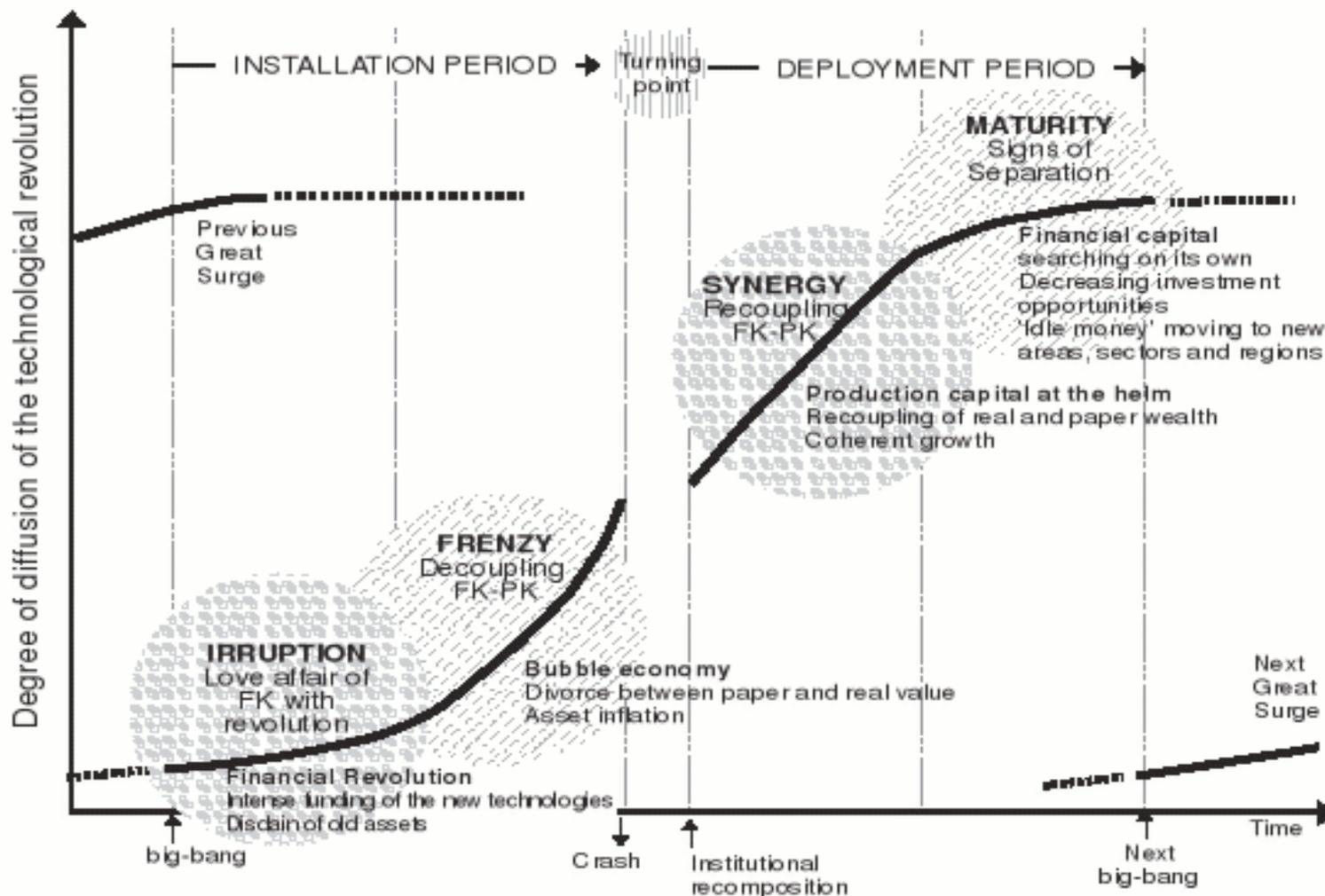
Moore's Law



Structural changes

- Maturing effect → post-technological period
- Technology no longer central → value provided
- Life cycle of technology →
 - Installation period (exploration & exuberance) → big bang / bubble / golden age
 - Turning point → choices determine future of technology
 - Deployment period → emphasis on use, reliability, security (slower, bigger leading firms)

Figure 7.1 The recurring sequence in the relationship between financial capital (FK) and production capital (PK)



Carlota Perez, *Technological Revolutions and Financial Capital, The Dynamics of Bubbles and Golden Ages*, 2002

Value fluctuations

- Sedimentation effect → with standardisation, widespread use and greater understanding, value of technology falls.
- *Undershoot* → technology not stabilised → people willing to pay more for better
- *Overshoot* → improved technology have less value, profit margins lower
- PCs vs servers

Commoditisation / 'Bricolage'

- Computing = utility → networks rather than single terminals
- Supply → Services, e.g. online software, business consulting
- Demand → for open standards
 - Hardware → electronic commodity parts
 - Software → OSS: Linux, Apache, Gimp
- Advantages
 - Lower costs
 - Modularity
 - Strength / easy maintenance
 - Lower replacement costs

Networking

- Shift from era of mainframes, minicomputers, PCs and servers to grid computing → network (*Gaia?*)
- No replacement but managing existing gear → Organic IT → adaptative
- Managing system more expensive than buying it (vs. 1980's) Cost of ownership / maintenance vs cost of acquisition

A warped system

- Up to recently, consumers bear higher risks
→ no real warranty (see Microsoft licenses), bugs, breaches of security
- Locking-in effect → cannot switch easily
- Shelfware → licences not used
- Premature releases to be first on market → bugs

Change for the better?

- Shift of implementation risk to vendors
- On-demand computing → billing per service thru ASPs → Computing = utility (.NET & Java)
- Adoption of open standards vs. proprietary systems for inter-operability (Linux) (vs. locking-in effect)
- Network effects → value depends not only on quality but also on number of users → positive feedback
 - Microsoft encouraging firms to develop for its OS
- Today positive feedback in favour of open standards

Favouring open standards

- TCP/IP + HTML → production of workable open standards
- IETF + W3C → online
- Global open source communities thanks to Internet
- Pbm: where to draw line
 - Too large common area might kill innovation
 - Too small area → incompatibility pbms
- Need for etiquettes (XML)

The new IT buyer

- Steep learning curve
- Previously → IT = black magic because of complexity + fear of high-skilled people → divinisation → gut feeling & wheezes → wastage in IT investment
- Today → wiser and more knowledgeable