

Strategic
Computing and Communications
Technology

CS 294, EE 290X, IS 290, BA 296
Spring 98

Standards wars

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Examples

- RR gauges
- Edison v Westinghouse
- NBC v CBS in color TV
- 3Com v Rockwell/Lucent

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Classification of wars

	Compatible	Incompatible
Compatible	Rival Evolution	Evolution v Revolution
Incompatible	Revolution v Evolution	Rival Revolution

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Recent standards wars

- AM stereo
 - auto industry invested, radio didn't
- Digital wireless phones
 - Europe: GSM
 - US: GSM, TDMA (cousin of GSM), CDMA
 - TDMA: 5 million
 - CDMA: 2.5 million
 - GSM: 1 million

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Standards wars

- Ericsson (TDMA) has AT&T, SBC , Bellsouth
- Qualcomm (CDMA) has Bell Atlantic, US West, etc
 - performance play strategy
- How big are the network externalities?
 - Geographic scope
 - investment is sunk, systems interconnect

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Standards wars, cont

- 56K modems
 - US Robotics x2 attempted preemption
 - Rockwell/Lucent K56 Flex
 - expectations management, switching costs
 - settled Dec 97: estimated will triple size of market

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Key assets

- Control over an installed base
- Intellectual property rights
- Ability to innovate
- First-mover advantages
- Manufacturing
- Strength in complements
- Reputation and brand name

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Two basic tactics

- Preemption
 - build installed base early
 - but watch out for rapid technological progress
- Expectations management
 - manage expectations
 - but watch out for vaporware

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Once you've won

- Stay on guard
 - Minitel
- Offer a migration path
- Commoditize complementary products
 - Intel
- Competing against your own installed base
 - Intel again
 - durable goods monopoly

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Once you've won, cont

- Attract important complementors
- Leverage installed base
 - expand network geographically
- Stay a leader
 - develop proprietary extensions

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What if you fall behind?

- Adapters and interconnection
 - Wordperfect
 - Borland v Lotus
 - translators, etc
- Survival pricing
 - hard to pull off
 - different from penetration pricing
- Legal approaches
 - Sun v Microsoft

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Microsoft v Netscape

- Rival evolutions
- Low switching costs
- Small network externalities
- Strategies
 - Preemption
 - Penetration pricing
 - Expectations management
 - Alliances

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