

Information Rules:
A Strategic Guide to the Network Economy

Standards Wars

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Examples

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

2

Classification of Wars

| | | |
|--------------|-------------------------|-------------------------|
| | Compatible | Incompatible |
| Compatible | Rival Evolution | Evolution v. Revolution |
| Incompatible | Revolution v. Evolution | Rival Revolution |

3

Examples

- Rival evolution
 - Video machines
- Rival revolutions
 - DVD v. Divx, high density disks (JAZ, etc.)
- Evolution v. Revolution
 - Windows 98 v. Rhapsody

4

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

5

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

6

Standards Wars, cont'd.

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

7

Key Assets

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

8

Two Basic Tactics

- Preemption
 - Build installed base early
 - But watch out for rapid technological progress
- Expectations management
 - Manage expectations
 - But watch out for vaporware

9

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

10

Once You've Won, cont'd.

- Attract important complementors
- Leverage installed base
 - Expand network geographically
- Stay a leader
 - Develop proprietary extensions

11

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

12

Microsoft v. Netscape

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

13

Lessons

- Understand the type of war
 - Rival evolution
 - Rival revolution
 - Revolution v Evolution
- Strength depends on 7 critical assets
- Preemption is a critical tactic
- Expectations management is critical

14

Lessons, continued

- When you've won the war, don't rest easy
- If you fall behind, avoid survival pricing

15