

CLASSIFICATION OF STANDARDS WARS

Not all standards wars are alike. A critical distinguishing feature is the magnitude of the switching costs, or more generally the adoption costs, for each rival technology. We can classify standards wars according to how compatible each player's proposed new technology is with the current technology.

If both your technology and your rival's technology are compatible with the older, established technology but incompatible with each other, we say the battle is one of *rival evolutions*. Competition between DVD and Divx (both of which will play CDs), the 56k modem battle (both types communicate with slower modems), and competition between various flavors of Unix (all of which run programs written for older versions of plain vanilla Unix) all fit this pattern.

If your technology offers backward compatibility and your rival's does not, we have evolution versus revolution. The evolution versus revolution war is a contest between backward compatibility, evolution, and superior performance, revolution. Evolution versus revolution includes the important case of an upstart fighting against an established technology that is offering compatible upgrades. The battle between Lotus 1-2-3 and Excel in the late 1980s and early 1990s in the market for spreadsheets followed this pattern. So did the contemporaneous struggle between dBase IV and Paradox in the market for desktop database software. (The mirror image of this occurs if your rival offers backward compatibility but you do not: *revolution versus evolution*.)

Finally, if neither technology is backward-compatible we have *rival evolutions*. The contest between Nintendo 64 and the Sony PlayStation and the historical example of AC versus DC in electrical systems follows this pattern. These four types of standards battles are categorized in Table 9.1.

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KEY ASSETS IN NETWORK MARKETS

Just what does it take to win a standards war? Your ability to successfully wage a standards war depends on your ownership of seven key assets: (1) control over an installed base of users, (2) intellectual property rights, (3) ability to innovate, (4) first-mover advantages, (5) manufacturing abilities, (6) strength in complements, and (7) brand name and reputation. What these assets have in common is that they place you in a potentially unique position to contribute to the adoption of a new technology. If you own these assets, your value-added to other players is high.

The very same assets that bolster your position in a standards war also strengthen your hand in standards negotiations. For just this reason, we have already noted some of the key assets in network markets in our treatment of standard setting in Chapter 8. Here we offer a more complete list of assets, noting that some companies have used these assets to fight standards wars, while others have used them to help establish standards favorable to their interests.

- 1. Control over an installed base of customers.** An incumbent firm, like Microsoft, that has a large base of loyal or locked-in customers, is uniquely placed to pursue an evolution strategy offering backward compatibility. Control over an installed base can be used to block cooperative standard setting and force a standards war.
- 2. Intellectual property rights.** Firms with patents and copyrights controlling valuable new technology or interfaces are clearly in a strong position. Qualcomm's primary asset in the digital wireless telephone battle was its patent portfolio. The core assets of Sony and Philips in the CD and DVD areas were their respective patents. Usually, patents are stronger than copyrights, but computer software copyrights that can be used to block compatibility can be highly valuable.
- 3. Ability to innovate.** Beyond your existing IPRs, the ability to make proprietary extensions in the future puts you in a strong position today. In the color TV battle, NBC's R&D capabilities were crucial. If you have a crackerjack R&D group, it may be worth some current sacrifices if you think you can outrun your competitors in the long haul. Hewlett-Packard's engineering skills are legendary in Silicon Valley; it is often in HP's interest to compromise on standards since it can out-engineer the competition once the standard has been defined, even if it has to play some initial catch-up.
- 4. First-mover advantages.** If you already have done a lot of product development work and are farther along the learning curve than the competition, you are in a strong position. Canon is a good

example. It created the personal laser printer market and has continued to dominate the manufacture of the engines in laser printers, in part by exploiting the experience curve to keep costs lower and quality higher than its competitors. Netscape obtained stunning market capitalization based on its ability to bring new technology to market quickly.

5. Manufacturing abilities. If you are a low-cost producer, owing to either scale economies or manufacturing competence, you are in a strong position. Cost advantages can help you survive a standards war or capture share competing to sell a standardized product. Compaq and Dell have both pushed hard in driving down their manufacturing costs, which gives them a strong competitive advantage in the PC market. Rockwell has lower costs than its competitors in making chipsets for modems. These companies benefit from open standards, which emphasize the importance of manufacturing skills.

6. Strength in complements. If you produce a product that is a significant complement for the market in question, you will be strongly motivated to get the bandwagon rolling. This, too, puts you in a natural leadership position, since acceptance of the new technology will stimulate sales of the other products you produce. The larger your gross margins on your established products, the stronger this force is. Intel's thirst to sell more CPUs has driven in its efforts to promote new standards for other PC components, including interfaces between motherboards and CPUs, busses, chipsets, and graphics controllers.

7. Reputation and brand name. A brand-name premium in any large market is highly valuable. But reputation and brand name are especially valuable in network markets, where expectations are pivotal. It's not enough to have the best product; you have to convince customers that you will win. Previous victories and a recognized name count for a lot in this battle. Microsoft, HP, Intel, Sony, and Sun each have powerful reputations in their respective domains, giving them instant credibility.

Don't forget that *customers* as well as technology suppliers can control key assets, too. A big customer is automatically in "control" of the installed base. America Online recognized this in the recent 56k modem standards battle. Content providers played a major role in the DVD standards battle. IBM was pivotal in moving the industry from 5¼" diskettes to 3½" disks. Most recently, TCI has not been shy about flexing its muscle in the battle over the technology used in TV set-top boxes.

No one asset is decisive. For example, control over an older generation of technology does not necessarily confer the ability to pick the next generation. Sony and Philips controlled CDs but could not move unilaterally into DVDs. Atari had a huge installed base of first-generation video games in 1983, but Nintendo's superior technology and hot new games caught Atari flat-footed. The early leader in modems, Hayes, tried to buck the crowd when modems operating at 9600 kbps were introduced and ended up in Chapter 11 bankruptcy.

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LESSONS

- **Understand what type of standards war you are waging.** The single most important factor is the compatibility between the dueling new technologies and established products. Standards wars come in three forms: rival evolutions, rival revolutions, and revolution versus evolution.
- **Strength in the standards game is determined by ownership of seven critical assets.** The key assets are (1) control of an installed base, (2) intellectual property rights, (3) ability to innovate, (4) first-mover advantages, (5) manufacturing abilities, (6) presence in complementary products, and (7) brand name and reputation.
- **Preemption is a critical tactic during a standards war.** Rapid design cycles, early deals with pivotal customers, and penetration pricing are the building blocks of a preemption strategy.
- **Expectations management is also crucial to building positive feedback.** Your goal is to convince customers and complementors that you will emerge as the victor; such expectations can easily become a self-fulfilling prophecy. To manage expectations, you should engage in aggressive marketing, make early announcements of new products, assemble allies, and make visible commitments to your technology.
- **When you've won your war, don't rest easy.** Cater to your installed base and avoid complacency. Don't let the desire for backward compatibility hobble your ability to improve your product; doing so will leave you open to an entrant employing a revolution strategy. Commoditize complementary products to make your systems more attractive to consumers.
- **If you fall behind, avoid survival pricing.** A better tactic is trying to interconnect with the prevailing standard using converters and adapters.