

Proprietary Standards in Complementary Markets: Learning from Apple?

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In the summer of 2004, RealNetworks released software (ironically called “Harmony”) that allowed music buyers to purchase from Real’s online store music that played on Apple Computer’s music player, the iPod. Apple quickly expressed displeasure. “We are stunned that RealNetworks has adopted the tactics and ethics of a hacker to break into the iPod,” the company declared in a press release. Apple further warned its customers that “when we update our iPod software from time to time it is highly likely that Real’s Harmony technology will cease to work with current and future iPods” (Macnewsworld 2004).

It is interesting to note that Apple did not embrace the opening of a market that provided a benefit to its iPod customers, who now had more choices for their music purchases. Ignoring the fact that Real’s actions made the iPod more attractive, Apple instead chose to fight against RealPlayer as a competitor to iTunes, Apple’s online music store.

Complementary effects between two products arise when the availability or sale of one product affects the utility that a customer can derive from the consumption of the other product. Apple's iPod and iTunes are complementary products with competitors such as Creative, iRiver, and Sony in the music player market and RealNetworks, Napster, and MusicMatch in the online music market. All of these firms must consider the interdependence between the complementary products as well as the competition within markets as they determine their prices and which standards to adopt. Apple's participation in both markets makes its balancing act more challenging, but also provides it with an opportunity to capitalize on its prominent position in both markets.

Is Apple's resistance to an open standard for music appropriate, or is it misguided? Is Apple best served by keeping its products closed to competitor's complementary products? For example, should Apple design the iPod to play only songs purchased from iTunes and/or should the iTunes shop sell files that can be played only on the iPod? Might Apple be better off by accepting an open standard? How are these dynamics affected by the relative attractiveness of the firm's products vis-à-vis competitor's products?

Interestingly, this is not the first time that Apple has dealt with decisions about open standards. In the 1980s, Apple Computer introduced a personal computer and software (complementary products) that were perceived by many as superior to the competition. In that setting, Apple also chose to keep its standards closed and saw its market share dwindle to approximately 5 percent. In contrast to the computer and software industry, Apple has dominated the player and music markets. In 2005, the iPod family owned 73% of the market for MP3 players and iTunes owned 75% of the market

for downloading (legal) music (Leonard 2006). Why did Apple fail with its strategy of closed standards in the 80s PC market, but now uses the same strategy to successfully leverage its dominance in the market for digital music?

To address these questions, we developed and analyzed a spatial model of two complementary markets, each featuring two products (Cattani and Heese 2006). Although the framework could be used more generally to analyze other ownership structures, we analyzed the specific scenario where one firm participates across both markets with complementary products of one standard. In each of the two markets, the firm faces a provider of a competing product. These two competitors act independently, but use an open standard. In contrast, the firm participating in both markets chooses whether to keep its standard closed (proprietary) in one or both of the markets, or to use the open standard. (The competitors are willing to have the standard be open to the one firm.)

We find that if a firm participates in two complementary markets and chooses a closed standard, it achieves lower profits compared to an open standard. But it achieves greater market share. And while moving from a closed standard to an open standard would increase the firm's short-term profits, it would increase profits for the firm's current competitors even more.

Surprisingly, we find that customers are better off under closed standards. It turns out that closed standards lead to an increase in price competition, as firms compete for market shares to leverage the positive cross-market externalities. The resulting reduction in retail prices more than compensates customers for the lost benefit from incompatibilities under proprietary standards.

Our results suggest that Apple is pursuing market share and an ongoing relationship to its customers, as opposed to singularly focusing on short-term profits. In the long run, Apple's customers are captive when Apple enforces its proprietary standards. If an Apple customer returns to the music player market to buy the next generation hardware, a closed standard increases the likelihood that the customer remain with Apple – the iPod is the only hardware that will work with the customer's portfolio of music from iTunes. A long-term closed strategy seeks to capture benefits that arise with higher market shares over multiple generations of players.

Hence, a firm with dominant market share can use proprietary standards to reinforce barriers to entry. The closed standard leads to even higher market share, leaving less share available to possible entrants in the markets for the complementary products. In Apple's case, its proprietary standards ensure that an entrant into the music business could sell only to non-iPod customers, while an entrant in the MP3 player market could not serve iTunes customers. In addition, the lower prices under a closed market strategy also contribute as a barrier to entry: with stiffer price competition, there simply is less money to be made per unit sold.

What is the difference between the iPod and iTunes results versus those of personal computers and operating systems? Apple chose a closed market for its personal computers and operating system, but its market share never rose much above 12%. When market shares are high, a closed strategy contributes to barriers to entry and captive customers. But when market shares are low, the closed market has little effect on competitors and it is hard to maintain market share as customers move to the dominant

standard. It is interesting to note that in 2006, Apple has moved to Intel processing chips that open its personal computer line to the alternate operating system from Microsoft.

The results of our model indicate that Apple's reluctance to open markets for the iPod and iTunes is rational and defensible, but not without tradeoffs. Closed markets garnish higher market share and impede entry of new competitors, but also result in lower prices and lower short-term profits. Open markets might benefit Apple in the short run, but would benefit and strengthen Apple's current competitors even more. In addition, by keeping markets closed Apple maintains and defends its dominant position. And as long as there remains at least some competition, prices are lower and customers are better off. Given a design process that regularly develops attractive new products, closed standards can reinforce Apple's dominance in the market as customers remain with Apple's standard for new generations of iPods.

References

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