

Pricing Games: Sony PlayStation and Microsoft Xbox

The home video game industry can be traced back to May 1972 in the United States with the release of the Magnavox Odyssey, the first home television game console, which sold for \$100. Though the game had no sound and no color, console sales grew from 100,000 in the first year to 350,000 units by 1975.¹ Competitors soon entered the marketplace, and within two years there were at least eleven major video game manufacturers, including Atari, Coleco, Magnavox, and National Semiconductor.²

Atari released the Atari VCS/Atari 2600 in 1977, featuring its soon to be world-renowned game, *Pong*. Because of its full-color output, sound, and cartridge-based games, the Atari 2600 soon became the market leader in home consoles. In 1982, Coleco entered the market with its graphically superior Colecovision. Atari then introduced the Atari 5200, with enhanced graphics, for \$269, and retailers began discounting the 2600 model.³

The promise of success in this market attracted a flood of imitators, with many distinct manufacturers each promoting their own systems. An inevitable industry shake-out occurred in 1983.⁴ Nevertheless, prospects for renewed strength in the market came with the release of the Nintendo Entertainment System in 1985.⁵ At \$199, the basic console was bundled with one of the most popular video games of all time, *Super Mario Brothers*. Once again, success attracted more competition, and the following year Sega Enterprises introduced the Sega Master System, which soon became a serious challenger to Nintendo.

Some generations of technology later, the industry's first CD-based console was introduced by Sega in 1995. Sales of Sega's 3-D graphical Saturn, however, totaled only 1.4 million units in the U.S. over the product's life. This was attributed mainly to two factors: (1) the complex multiprocessor made it difficult to design games for the system, and (2) the \$399 price was perceived as too high for many consumers. That September, Sony's CD-based PlayStation was unveiled at \$100 less than the Saturn. It became an instant hit, selling about 1.5 million units within 14 months.⁶ In its traditional second-mover style, Nintendo released its Nintendo 64 console a year after, pricing it at \$199. Though it maintained its cartridge-based format, rather than moving to CD-based technology, Nintendo sold more consoles on the launch date than Sony had sold within 13 weeks of PlayStation's release.⁷ Sega eventually ceased console production in 2001.

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The early 2000s again brought an influx of new-age consoles. Sony's PlayStation 2, released in 2000 at a price of \$299, became the best-selling game console in history.¹ The following year, Microsoft's \$299 Xbox beat Nintendo's GameCube to the market by three days. Neither the Xbox nor the GameCube fared well, with fewer games available for their systems, as well as service and support issues for the Xbox. Microsoft spent several years redesigning its console and released the much-anticipated Xbox 360 in late 2005. For its part, Sony introduced the PlayStation 3 (PS3) in November 2006.⁸ This was the start of a period of heightened price competition between Sony and Microsoft, which continued throughout the remainder of the decade.

Pricing Decisions

Sony positioned the PS3 as its top video game system, based on its Blu-Ray disc player and powerful processor. There were two versions of the PS3 console. In 2006, the basic model was priced at \$499 and the premium model sold for \$599.⁹ Microsoft also had a low-end Xbox 360, priced at \$299, and a high-end version, dubbed the Xbox 360 Elite, priced at \$479.¹⁰ Nintendo launched the Wii in late 2006, priced at \$249.¹¹

In the second half of 2007, things began to heat up. In August 2007, Microsoft reduced the price of the Xbox 360 Elite to \$450.¹² Two months later, Sony reacted to a loss in market share by reducing the price of each of its two PS3 consoles by \$100.¹³ In September 2008, Sony cut the price of its high-end model again, to \$399.¹⁴ In the same month, Microsoft also cut the price of the Xbox 360 Elite to \$399.¹⁵ Nintendo did not change its prices.

These price levels held steady for a year. But by August 2009, as the holiday season approached and with the economy still mired in a major recession, gaming blog speculators and analysts at the *Wall Street Journal* debated whether one or both of the companies would cut prices in the near future.¹⁶ If so, they expected console price cuts of about \$100, and they speculated about the resulting sales levels. **Exhibit 1** summarizes the expectations about likely sales levels for different pricing scenarios. **Exhibits 2** and **3** present the cost schedules for Sony and Microsoft. The "overhead" expenses in these exhibits represent the allocation of management and other fixed costs to the console division in each company. The "distribution" costs are negotiated with retailers on a per-unit basis. The lower distribution costs at higher levels of production reflect negotiated reductions in retailer margins available at higher sales volumes.¹⁷

Questions

1. Given the information in **Exhibits 1, 2, and 3**, would you predict that Sony and/or Microsoft will want to reduce console prices by \$100? Use a 2-by-2 one-shot simultaneous game to analyze this short-run situation. You can assume Nintendo monitors its competitors' actions, but has no plans to change its price.
2. Assume that demand curves are all linear. Calculate the own-price point elasticities of demand implied by the data at prices of \$299 and \$399 for both Sony and Microsoft. Are your answers consistent with your understanding of short-run profit maximization for firms with market power?
3. Can you think of reasons why these firms would be particularly aggressive in pricing their consoles?

Exhibit 1
Prices and Projected Annual Sales Volumes for Sony PlayStation 3
and Microsoft Xbox 360 Elite

| PS3 Price | Xbox 360 Price | PS3 Projected Number of Units Sold (millions) | Xbox 360 Projected Number of Units Sold (millions) |
|-----------|----------------|---|--|
| \$299 | \$299 | 11.25 | 11.5 |
| \$299 | \$399 | 11.75 | 7.0 |
| \$399 | \$299 | 8.25 | 12.5 |
| \$399 | \$399 | 8.75 | 8.0 |

Exhibit 2
Sony PlayStation 3 Production Costs per Unit (US dollars)

| Units Produced (in millions) | 8.25 | 8.75 | 9.25 | 9.75 | 10.25 | 10.75 | 11.25 | 11.75 | 12.25 | 12.75 |
|---------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Production Labor | 98 | 80 | 67 | 55 | 45 | 38 | 32 | 28 | 26 | 28 |
| Materials & Parts | 168 | 161 | 155 | 145 | 143 | 141 | 140 | 140 | 141 | 142 |
| Overhead | 56.67 | 62.86 | 59.46 | 56.41 | 53.66 | 51.16 | 48.89 | 46.81 | 44.90 | 43.14 |
| Distribution | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 30 | 30 | 30 |
| Per Unit Total Cost | \$372.67 | \$343.86 | \$321.46 | \$296.41 | \$281.66 | \$270.16 | \$260.89 | \$244.81 | \$241.90 | \$243.14 |

Exhibit 3
Microsoft Xbox 360 Elite Production Costs per Unit (US dollars)

| Units Produced (in millions) | 7.00 | 7.50 | 8.00 | 8.50 | 9.00 | 9.50 | 10.00 | 10.50 | 11.00 | 11.50 | 12.00 | 12.50 |
|---------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Production Labor | 78 | 69 | 62 | 56 | 52 | 48 | 46 | 45 | 44 | 44 | 44 | 44 |
| Materials & Parts | 180 | 172 | 167 | 161 | 156 | 153 | 149 | 147 | 146 | 145 | 144 | 144 |
| Overhead | 64.29 | 60.00 | 56.25 | 52.94 | 50.00 | 47.37 | 45.00 | 42.86 | 40.91 | 39.13 | 37.50 | 36.00 |
| Distribution | 50 | 50 | 50 | 40 | 40 | 40 | 40 | 40 | 40 | 30 | 30 | 30 |
| Per Unit Total Cost | \$372.29 | \$351.00 | \$335.25 | \$309.94 | \$298.00 | \$288.37 | \$280.00 | \$274.86 | \$270.91 | \$258.13 | \$255.50 | \$254.00 |