

Market and Technological Trends in LCD TVs

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Abstract

The market of flat panel displays is experiencing rapid growth with the advancement of digital technologies in media, broadcast and communication. Especially, LCD panels have created a new lifestyle as consumers are becoming more aware of the benefits they deliver, viz. low power consumption, thin profile and light weight, as well as improvements in image quality, size and resolution. More attractive pricing and increasing supply have also boosted their popularity. This paper describes market and technological trends in LCD TVs.

Introduction

We are witnessing a new era where digital video is delivered via a multitude of channels, as witnessed by the start of BS digital broadcasting, increasing adoption of broadband technologies, and growing market permeation of DVDs, DVCs, and digital cameras.

The flat panel display (FPD) market is experiencing rapid growth in response to these changes in the market environment. Within this market, LCD TVs are gaining popularity due to increases in screen size that are making possible panels that reach the 30-inch class as well as the unique benefits provided by LCD technology, including thin profile, light weight, compact size, and low power consumption. Korean and domestic Japanese manufacturers are continuing to enter the market in earnest, signaling the beginning of truly intense competition.

This paper explores LCD TV market trends, including changes in the FPD environment, market trends, and consumer trends.

1. The Move to Digital Broadcasting

Developments in the Japanese digital broadcasting infrastructure are summarized in **Fig. 1**, with steady progress being made in the move to digital content. Progress being made in this transition is illustrated by the start of BS digital broadcasting in December 2000, the start of BS/CS 110° broadcasting in July 2002, and the planned start of terrestrial digital broadcasting in December 2003.

In the American DTV market, rapid adoption of digital technology is predicted in the year 2004 and beyond given FCC recommendations establishing targets of DTV tuner inclusion in televisions of 36 inches and larger of 50% by July 1, 2004, and 100% by July 1, 2005.

Similarly, plans to provide the necessary infrastructure in Europe are being developed, with rapid adoption of related technologies predicted starting in 2004.

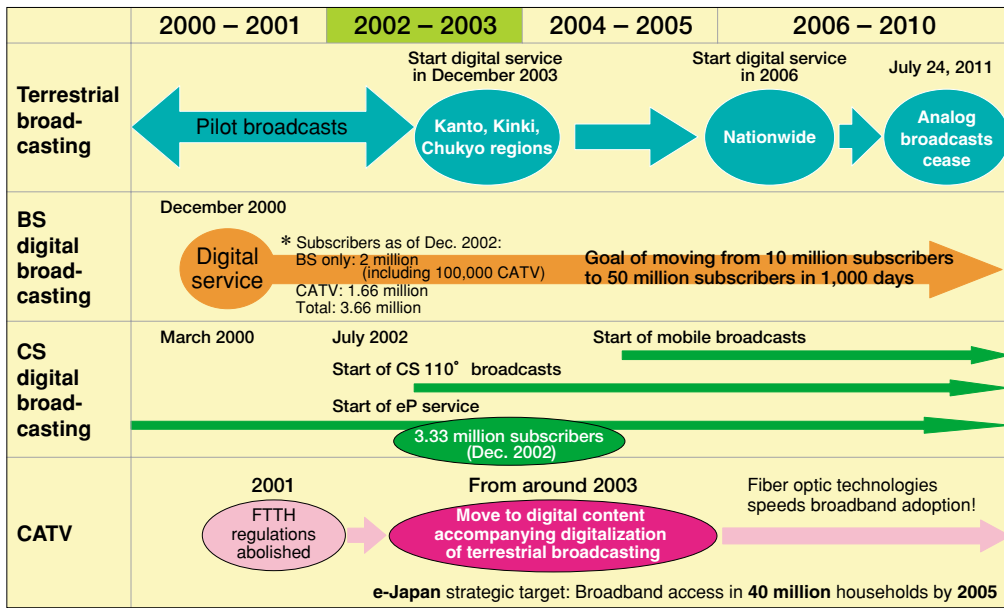


Fig. 1 The move to digital broadcasting in Japan

2. Rapid Growth in the FPD Market

Fig. 2 organizes display types by size and resolution, while Fig. 3 illustrates forecast television demand in Japan.

The LCD panel market has seen a shift from the traditional use of 20-inch and smaller panels in mobile and PC monitor applications to a new willingness to use the technology in television applications made possible by increasing panel sizes. The 30-inch and larger segment is also experiencing rapid growth.

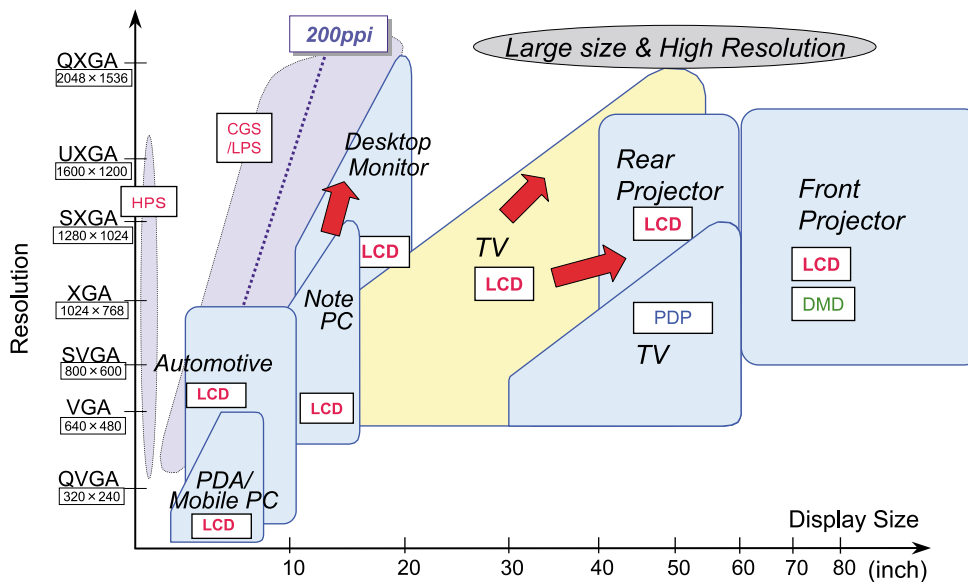


Fig. 2 Display types by size & resolution

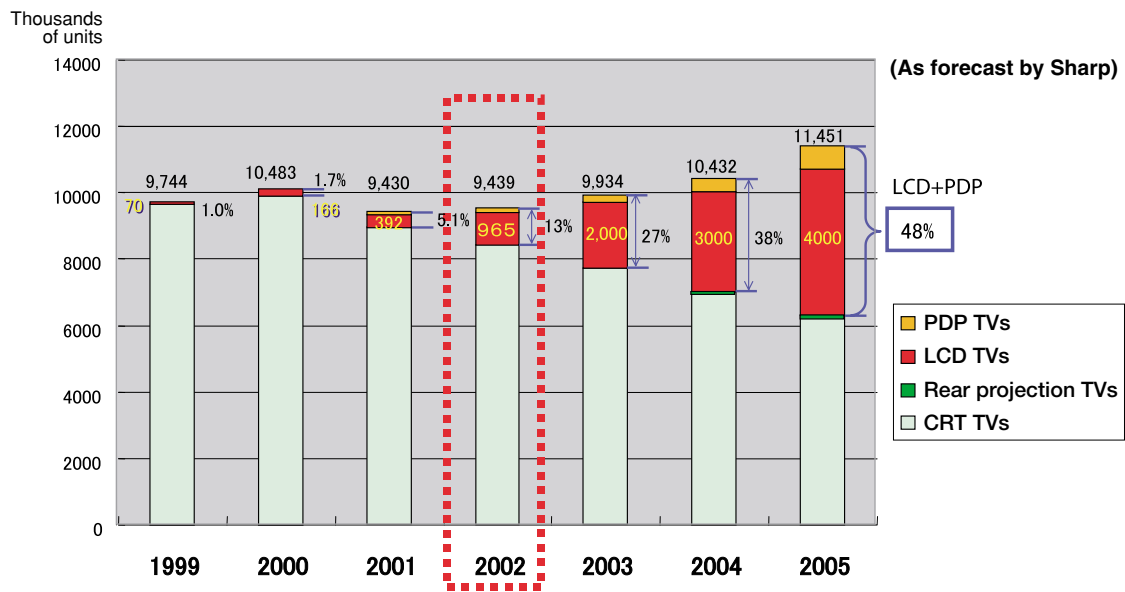


Fig. 3 Forecast of domestic TV market demand (qty.)

Results for fiscal 2002 suggest a dramatic market expansion driven by the combination of a rapid fall in product pricing with increasingly large product lines, with total sales of PDP and LCD TVs forecast to reach about 1.2 million units, a year-on-year increase of more than 250%. This rate of growth is seen continuing into fiscal 2003 and on, with forecast sales of over 12 million units in fiscal 2005 as the move to big-screen and wide-format models in particular gathers momentum. Significant investments in manufacturing facilities by Korean and Taiwanese LCD panel producers are expected to result in a dramatically more robust supply capacity, which should in turn contribute to a market expansion as favorable supply conditions permit domestic television manufacturers to intensify their participation in the segment.

3. Consumer Trends

Given the trend towards 24-hour, round-the-clock availability of television programming being fueled by factors such as the increase in the number of available channels made possible by digital broadcasting, increases in the number of early-morning and late-night programs, and growth in television applications being driven by the adoption of broadband communications technology, the significance of the low power consumption and long service lifetimes offered by LCD TVs is growing. Ease-of-use is also becoming a key consideration as an aging consumer base demands products that are simple to set up and move.

Furthermore, the trend towards high-definition LCD technology is well suited to increases in the amount of software and programming offering high-quality audio and video, including expanded availability of digital high-definition programming, DVD software, and new, higher-definition digital still cameras and camcorders.

4. LCD TV Trends

The market for super-large televisions with screen sizes of 30 inches and larger began with the introduction of the first 32-inch plasma televisions to offer broad-based commercial viability in the spring of 2001, and the thin-profile flat television segment has experienced rapid growth ever since.

The LCD market, which has traditionally centered on applications such as small, mobile devices and screens for car use, is experiencing a shift to larger screen sizes of between 30 inches and 40 inches, with demand for LCD TVs shifting from individual-use to family-centered products. The trend is towards thinner units for use in living rooms, and consumer interest is also growing in the new audio/visual experiences made possible by products such as home theater and wall-mountable monitors.

At the same time there has been a significant acceleration in both the move to embrace broadband broadcasting and communications and the adoption of home networking technologies. Growth is expected in the popularity of lifestyles characterized by the enjoyment of digital imagery and music over networks and by the integration of A/V components and IT hardware using memory cards, wireless A/V transmissions, and broadband communications.

Conclusions

The use of LCD TVs as primary (big-screen) household televisions is expected to grow, complementing traditional LCD-dominated markets such as small mobile devices. Manufacturers are seen making significant improvements in LCD TV features such as thin profile, light weight, low power consumption, and high contrast in brightly lit viewing environments, as well as working to deliver products at price points compatible with widespread adoption as they resolve technical issues related to further improvements in display response with moving images, viewing angles, and brightness.

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