

AKIMINE LTD.

INDUSTRY NOTE

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This industry note describes the market size, the industry trend and major players in the following industries where Akimine belongs to :

- A. World LCD TV Industry,
- B. World PC Industry and
- C. Digital Signage Industry.

Since Akimine is a minor player in each industry, its performance is not reflected in the statistics shown below.

A. WORLD TV INDUSTRY

1. World TV Shipment

In 2011, worldwide TV shipments fell for the first time since 2004, slipping 0.3% to 247.7M units and a substantial slowdown from the double digit growth in previous years for Liquid crystal display TV (LCD), with just over 205M units in 2011 with plasma TV shipments declining almost 7% in 2011 to 17.2M units, the largest decline yet, and cathode ray tube (CRT) TV shipments falling 34%. The LCD growth was not enough to offset these declines (see Table 1. World TV Shipment)

The causes of slow demand in 2011 were complex. Although LCD TV showed growth, results were well below industry expectations. The low level of shipments were partially caused by excessive inventory levels early in 2011 for the US and European markets, as well as a sharp demand drop in Japan, following the end of the government-sponsored Eco-Points Program and the switch from analog to digital broadcasting in 2011, causing a surge in replacement activity during 2009-2010.

Globally, Q4'11 shipments went down 4% Y/Y to 74.2M units, with LCD TV shipments rising just 1%, the lowest growth rate since 2024. Plasma TV units were down 8% and CRTs were down 43%. The decline in units was most pronounced in Japan and Western Europe with only mild growth in North America. Collectively, TV shipments declined 21% Y/Y in Q4'11 in the developed regions (North America, Japan and Western Europe). But, growth of TV shipment in emerging regions continues to be strong though, increasing 12% Y/Y in Q4'11 with LCD TV unit shipments rising 20%.

The LCD TV shipment market share increased to a record 86.5% in global TV shipments in Q4'11, up from 83% in Q3'11 and 82% from a year ago. LCD TV shipment growth is strongest for larger screen sizes with very aggressively priced models for the holiday season. Shipments of 40" and larger LCD TVs rose 20% Y/Y while sub-40" fell 7%. Average prices for 40/42" LCD TVs were down 11% Y/Y, and 60"+ average LCD TV prices went down more than 16% Y/Y. LED backlight penetration continues to grow slowly, rising above 50% of LCD units for the first time in Q4'11, although only about three percentage points higher than in Q3'11. The high premium for edge-lit LED LCD TVs is still an inhibitor to adoption, but new low-cost direct-lit LED models arriving in 2012 will help speed adoption.

Plasma TV unit shipments continued to decline, falling 8% Y/Y in Q4'11 after a 14% decline in Q3'11 and a 6% decline in Q2'11. This decline in demand coincides with a shift to larger screen sizes and focus on greater profitability, with the 50"+ share of plasma TV shipments increasing more than 50% for the first time in Q4'11.

Table 1: Q4'11 Worldwide TV Shipments by Technology (000s)

Technology	Q4'11 Units	Q/Q Growth	Y/Y Growth
LCD TV	64,237	24%	1%
PDP TV	5,195	26%	-8%
OLED TV	0.1	470%	-73%
CRT TV	4,772	-25%	-43%
RPTV	32	46%	-51%
Total	74,236	19%	-4%

Source: NPD Display Search Quarterly Global TV Shipment and Forecast Report -

China remained the top region for TV shipments at 21%, unchanged from the previous quarter, totaling 15.6M units for the quarter and 49M units for the year. China also had strong growth in 2011, with shipments increasing 19% Y/Y in Q4'11, the highest in any region. More than 90% of TV sets in the region were LCD as of 2011. North America was the second largest region for TV shipments, accounting for 20.5% of shipments in Q4'11, and was the only developed region to experience Y/Y shipment growth.

Market Share for 3D Shipment continues to rise, increasing to 14% of Global TV Shipments in Q4'11. Worldwide, 3D continues to show gains in the percentage of TV shipments, posting gains in every region, but most impressively in China and Europe. In a somewhat surprising result, 3D penetration continues to be lackluster in North America, accounting for just 9% of Q4'11 TV shipments, as opposed to 21% in Western Europe and 23% in China. 3D TVs accounted for more than 24M units shipped worldwide in 2011.

2. World TV Market Share

In the past decade of the analogue era, Japanese electronics manufacturers such as Sony and Panasonic dominated the world TV market. However, since the late 2005, their market shares have been shrinking dramatically, an acknowledgment that they failed to compete in the age of digital flatscreens.

In November 2011, Sony announced that it will halve its medium-term sales target for liquid crystal display TVs to 20m a year, giving up an ambitious goal it had set in 2009. Sony followed Panasonic's decision to cut flatscreen panel output by nearly half, to 7.2m a year, and merge or scrap production lines in Japan.

Japanese companies pioneered thin LCD and plasma displays more than a decade ago. But their high production costs – compounded by the recent record-breaking strength of the yen – meant they had fallen behind, as flat screens evolved from luxury items into relatively cheap, mainstream commodities. Today the biggest sellers of TVs worldwide are Samsung and LG of South Korea (see Table2., Global TV Market Share).

In Q4 of 2011, Samsung's global flat panel TV revenue share increased to 26.3%, a record level for any brand and a three percentage point increase from Q3. Samsung was

also the leader in the revenue market share, for both LCD and plasma. This was the first time that a brand other than Panasonic led in global plasma TV market revenues. Samsung was also the top brand in 3D TV and LED TV shipments. LGE was the #2 brand worldwide at 13.4% and, besides Samsung, was the only other top five TV brand to see revenue growth Y/Y in Q4'11. Sony rounded out the top three at almost 10% revenue share, but saw a more than 30% decline in revenues Y/Y.

Sony, whose TV operation was in the red for eight years, needs to book a ¥50bn restructuring charge this year. It had already began edging away from in-house production, for instance by selling factories in Slovakia and Mexico to the Taiwanese contract manufacturer Hon Hai. Of the 40m TVs it had hoped to sell in the year to March 2014, only about half were to have been built by Sony itself.

Other Japanese companies are also reconsidering their commitment to TVs. In July 2011, Hitachi said it was looking at outsourcing all its production to foreign contract manufacturers. Even Sharp, the leading seller of LCD sets in the Japanese market, is converting some of its domestic production capacity to making smaller screens for smartphones and tablet computers.

Japanese groups' TV problems rose to a crisis this year, because a slowing global economy reduced demand, even as supplies continued to soar. Many had pinned their hopes for profitability on an ever-growing sales volume, which they counted on to make production cheaper. But retail prices have plummeted faster than their costs.

Indeed, the effect of falling prices now exceeds that of the strong yen. Panasonic says it lost six times more operating profit than it did to exchange rate swings, because of price declines in the last six months to September. With the drive for volume now effectively abandoned, Sony and Panasonic will definitely have a more difficult time making their remaining operations profitable, particularly given their commitment to build at least some hardware themselves in Japan. Many analysts and investors would prefer them to outsource production altogether and focus on marketing and design, as Apple does with its iPhones and computers. That would allow them to shift resources to less commodities products with higher profit margins.

What is certain is that, after the war, this is the most critical time for the Japanese technology sector. The yen remains a burden on exports and many manufacturers are still shaking off the effects of the country's earthquake and tsunami in March 2011, which damaged factories and disrupted supply chains.

Manufacturers are also facing new problems in flood-ravaged Thailand, home to hundreds of Japanese parts and assembly plants, resulting in shortages of everything from computer hard-disk drives and semiconductors to household appliances. (Source: The Financial Times, November 2, 2011, Display Search, Quarterly Global TV Shipment and Forecast Report)

Table 1.

Global market share of leading flat panel TV brands Q2 2012

	Q3, 10	Q4, 10	Q1, 11	Q2, 11	Q3, 11	Q4, 11	Q1, 12	Q2, 12
Samsung	21.60%	21.40%	22.20%	22.70%	23.00%	26.30%	25.90%	28.50%
LG	13.50%	12.70%	14.50%	14.40%	13.00%	13.40%	13.40%	14.60%
Sony	11.80%	14.20%	11.40%	11.80%	9.90%	9.80%	9.40%	8.30%
Panasonic	9.10%	8.30%	6.60%	9.40%	8.40%	6.90%	5.30%	6.80%
Sharp	8.00%	8.10%	7.40%	7.00%	7.50%	5.80%	6.50%	5.00%
Others	36%	35.30%	37.90%	34.70%	38.20%	37.70%	38.30%	36.30%
<p>Note : In Q4 of 2005, the world TV market share was as follows:</p> <p>Sony 19.1%, Sharp 13.4%, Samsung 11.8%, Philips 11.7%, LG 6.0%, Others 38%</p>								

Source :Display Search

B. WORLD PC INDUSTRY

1. Market Size

Sales volume worldwide grew rapidly in the late 1990s, but declined during the early 2000s recession. Sales increased again for the rest of the decade until a slowdown in the late 2000s recession, followed by a strong recent recovery.

In 2011, the global PC shipments declined 1.1% only to 84.25 million units. As new products enter the market, long-term stimulation of growth in previously low-cost consumer computers are no longer attractive to consumers. Consumers now pay more attention to the tablet PCs and other consumer electronic products and buy tablet PC as a PC alternative devices.

In 2012, the global PC shipments rose 12% in Q2 2012. Growth in tablet more than compensated for disappointing sales of other personal computers. The new iPad had the biggest single impact on growth rates in the quarter. Apple retook the overall lead with an estimated 19% share of global PC shipments, helped by strong iPad sales. Asus and Samsung made progress with their Transformer and Galaxy Tab product lines. Total tablet shipments increased 75% to 24 million units, representing 22% of all PCs (see Table 1., World PC Shipment from 1999 to 2011, and Table 2., World PC Shipment by Region).

Table 1.

World PC Shipment from 1999 to 2011

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Units (M)	113.5	134.7	128.1	132.4	168.9	189	218.5	239.4	271.2	302.2	305.9	351	352.8
Growth (pct.)	21.7	14.5	-4.6	2.7	10.9	11.8	15.3	9.5	13.4	10.9	1.2	13.8	0.5

Note: Figures include desktop PCs, laptop PCs and tablet PCs.

Source: Wikipedia, Market share of World PC vendor

Table 2.

World PC Shipment by Region

Region	Q2 2011 Shipment	Share	Q2 2012 Shipment	Share	Growth
Asian Pacific	37,243,920	38.3%	40,206,900	37.0%	8.00%
Europe, Middle East & Africa	26,154,810	26.9%	30,673,690	28.2%	17.30%
Latin America	9,607,930	9.9%	10,927,860	10.1%	13.70%
North America	24,326,540	25.0%	26,900,330	24.7%	10.60%
Total	97,333,200	100.0%	108,708,780	100.0%	11.70%

2. World PC Market Share

In the 2000s, some PC makers changed hands. HP and Compac merged in 2002. IBM sold its PC business to Lenovo. Acer acquired Gateway and eMachines in 2007. After years of expansion and numerous acquisitions, Lenovo Group has managed to become the world's second largest supplier of personal computers.

In 2011 to 2012, total shipment of Apple increased almost 60% thanks to dramatic sales growth of iPad.

In contrast to PC tablet, Windows PC shipments continued to be a disappointment. Ultrabooks did not hit the price points that could excite large numbers of buyers and the share of the overall market taken by Windows fell to a new low of 73%. Lenovo continued to gain shares, thanks to a strong home market, a focus on emerging markets and increased attention to the consumer category overall. Acer improved too, compared to a terrible Q2 a year ago. While results in its former strongholds of Italy and Spain remained poor, it made good progress in the more buoyant markets of Russia, Germany and the UK. Furthermore, improved brand awareness through its Olympics sponsorship should translate into increased sales in the second half of the year.

HP was the second largest PC vendor in Q2 with 12% share. The sensible cost-saving decision to merge its PC and printing divisions impacted its first half. The biggest impact of the quarter was Microsoft's decision to launch its own pads – the Surface and Surface Pro. 'The information available to date suggests the prices of both will be too high to capture significant market share, and a direct sales approach will prove inadequate (see Table 3. World PC Market Share)

Table 3.
World Market Share

Vendor	Q2 2011 Shipment	Market Share	Q2 2012 Shipment	Market Share	Growth
Apple	13,193,640	13.6%	21,061,430	19.4%	59.60%
HP	15,280,400	15.7%	13,554,340	12.5%	-11.30%
Lenovo	10,354,590	10.6%	13,154,570	12.1%	27.00%
Acer	10,243,790	10.5%	10,688,190	9.8%	4.30%
Dell	10,827,750	11.1%	9,652,310	8.9%	-10.90%
Others	37,433,030	38.5%	40,597,940	37.3%	8.50%
Total	97,333,200	100.0%	108,708,780	100.0%	11.70%

Source: Canalys 2012

References:

1. IDC, World PC Market Summary 2012
2. Wikipedia, The world leading PC vendor
3. Canalys, Apple to dominate world PC market
4. IDC, World PC Market Summary 2012.

C. WORLD SIGNAGE INDUSTRY

1. Signage Applications. All signs are becoming more and more popular among businesses of all sizes. Digital signage is used for many different purposes and there is no definitive list. However, given below are certain most common applications of digital signage:

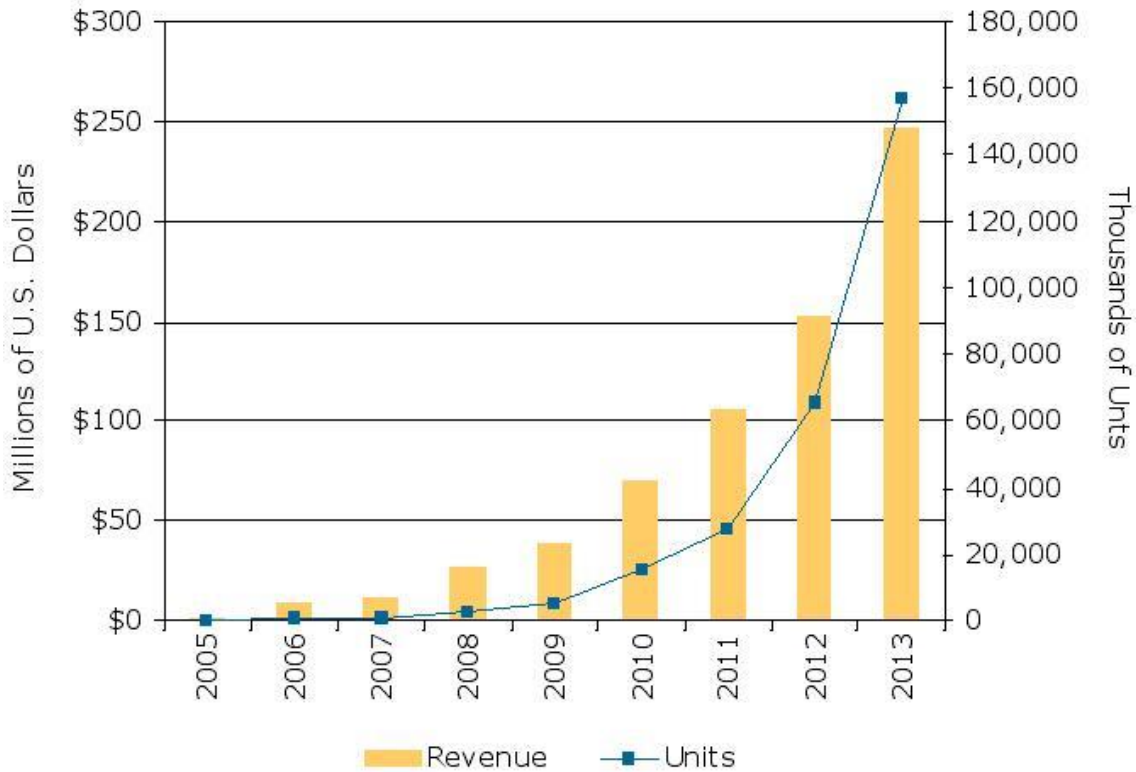
- (1) **Public information** – news, weather, and local (location specific) information such as fire exits and traveler information
- (2) **Internal information** - corporate messages, health & safety, news, etc.
- (3) **Menu information** – pricing, photos, ingredients, and the other food information including nutritional facts
- (4) **Advertising** – either related to the location the signage is in or just using the audience reach of the screens for general advertising
- (5) **Brand building** – in-store digital signage to promote the brand and build a brand identity
- (6) **Influencing customer behavior** – directing customers to different areas, increasing the dwell time on the store premises
- (7) **Enhancing customer experience** – applications include the reduction of perceived wait time in restaurant waiting areas, bank queues, etc., as well as recipe demonstrations in food stores
- (8) **Enhancing the environment** – with interactive screens (in the floor for example) or with dynamic way-finding

2. World Signage Market Size

Since 2006, the world signage market has been expanding rapidly, in line with wider applications and lower cost of advanced technologies, such as LCD, LED and plasma to display content.

The market sees digital signage as more beneficial in comparison with static signage, as the contents can frequently be digitally updated, saving the cost of printing. Digital signage also has the ability to be interactive with embedded touch screens, movement detection, and image capture devices (see Table 1., the growth of signage market).

Table 1., Growth of Signage Market



Source: ABB Advertising

3. Major Signage Providers

The following are some of the major players in certain countries:

NEC Display Solutions, Ltd (Japan), AU Optronics (Taiwan), Scala (U.S.), Planar Systems Inc. (U.S.), UCView (U.S.), Navori (Switzerland), Adflow Network (Canada), Keywest technology (U.S.), Nanonation Technology (U.S.), Omnivex Corporation (Canada), Onelan Limited (U.K.), Brightsign LLC. (U.S.), Samsung Electronics Co. Ltd (South Korea), Winmate Communication Inc. (Taiwan), Broadsign International Inc. (Canada), and Cisco Systems (U.S.) .

Source: DigitalSignageToday.com

D. DEFINITION OF SME IN JAPAN

According to the Small and Medium-sized Enterprise Basic Act and Japan's Ministry of Economy, Trade and Industry (METI), the definition of SME is as follows:

Industries	Capital size(¥m)	Number of Employees
Manufacturing and others*	300 or less	300 or fewer
Wholesale	100 or less	100 or fewer
Retail	50 or less	50 or fewer
Services*	50 or less	100 or fewer

* This sector includes Software and IT industry.

Source: Small and Medium Enterprise Agency, White Paper Year 2011

E. PROPORTION OF SMALL AND MEDIUM SIZE COMPANIES IN JAPAN

The Japanese economy has a very high proportion of small manufacturing firms. About 99.4% are small and medium-sized firms with less than 300 employees, comprising of all firms and employ three quarters (75.1%) of manufacturing industry employees.

These smaller firms produce about half (51.6%) of the manufacturing output. Most wholesale and retail firms are also small, with 85 % having less than 10 employees.

About half (48.7%) of all retail stores have only one or two employees. However, the number of retail stores owned by individuals is decreasing. Many small stores do not have a successor, and they are losing business to convenience stores and larger retailers.

Generally, small firms pay lower wages and cannot offer their employees the same level of security and benefits as large firms. And because they cannot compete with the large firms for the new school graduates they want to hire, they are more likely to hire older and part-time workers

Source: White Paper 2011, Small and Medium Enterprise Agency, Ministry of Economy, Trade and Industry.

F. JAPANESE GOVERNMENT GUIDANCE AND SUPPORT FOR SMES

1) Information-Technology Promotion Agency of Japan (IPA) was established originally as a Specially-Approved Corporation, based on the Law on Promotion of Information Processing (enacted May 22,1970, Law No.90). By amendments enacted on December 11,2002(Law No. 144), IPA was reorganized to become an incorporated administrative agency dated January 5, 2004

One of its missions is to strengthen development capability of SMEs and to improve sustainability. It helps SMEs to shift from simple subcontracting work to higher added value businesses. The agency will provide human resource training and educate small and medium sized users how to utilize computer systems.

2) Organization for Small & Medium Enterprises and Regional Innovation, JAPAN was founded in 2004m based on the Act on the Organization for Small & Medium Enterprises and Regional Innovation, JAPAN, Independent Administrative Agency. Its main functions are:

(a) Support for Start-Ups

Provide various support measures including consultation at advice counters and dispatching experts, in order to resolve problems related to start-ups and new business development.

(b) Support for SME Growth and Development

Provide support towards business enhancement, such as responding to the advanced management issues of SMEs, in collaboration with local SME support organizations

(c) Support for Safety Net

Provide “security” through a small-scale enterprise mutual aid system and business safety mutual relief system to those who wish to be prepared for future what-ifs.

(d) Support for Infrastructure

Offer support in terms of infrastructure to those who wish to improve facilities, or who are looking for new sites/ space for business.

3) Credit Guarantee Corporations

Credit Guarantee Corporations (CGCs) are public institutions that support small and medium enterprises (SMEs) by serving as guarantors to make it easier for them to borrow funds, which are necessary for their business operations, from financial institutions. SMEs play an important role in Japan's economy.

The credit guarantee system improves the credit worthiness of SMEs, which lack physical collateral and have weak credit standings. It helps direct funds to them from private financial institutions and provides them with smoother access to A key characteristic of the credit guarantee system in Japan is that it is actually a combination of the credit guarantee system operated by CGCs, which were mainly established through financial assistance from local government, and the credit insurance system operated by the Japan Finance Corporation, an institution owned by the national government. The combination of these two systems is often referred to as the credit supplementation system.

Brief History

1937	Japan's first Credit Guarantee Corporation, CGC of Tokyo, established and registered
1948	Policy Principles for SME Financing (i.e. use of a credit guarantee system) adopted by the Cabinet
1950	The Small and Medium-sized Enterprise Credit Insurance Act was enacted (Establishment of Credit Insurance System)
1951	National Association of Credit Guarantee Corporation was established
1953	The Credit Guarantee Corporation Law was enacted
1958	Small Business Credit Insurance Corporation was established as a new organization, now the Japan Finance Corporation, for providing credit insurance instead of the national government's special account for SME credit insurance)
1963	Small and Medium-sized Enterprise Basic Act was enacted
2006	Introduction of a Guarantee Fee Rate that Takes Credit Risk into Account
2008	Revision of the Credit Guarantee Corporation Law

Operations of CGCs expanded to include the underwriting of stock warrants issued by SMEs receiving guarantees, the assumption of claims towards debtors, and the taking of stakes in revitalization funds

2008 The National Federation of Credit Guarantee Corporations was designated as a guarantee business support organization.

Ceilings on guarantees for SMEs are as follows:

	<u>INDIVIDUALS / CORPORATIONS</u>	<u>COOPERATIVES, ETC</u>
General Guarantees	Yen 200 million	Yen 400 million
Guarantees without Collateral	80 million	80 million
Bond Guarantees	450 million	n.a.

Source: Credit Guarantee Corporations Home Page