

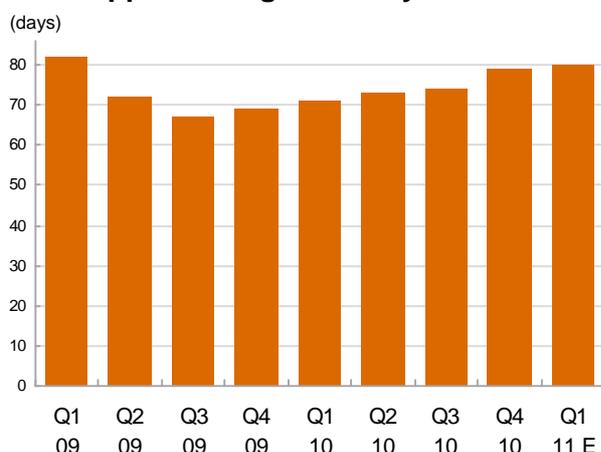
PwC Industry Analysis - Consumer Electronics



Re-focus on risk management

Although the effects of the March earthquake and tsunami have been considerable for Japan and its economy, the effect on the broader consumer electronics and semiconductors industries has been minor. Major mitigating factors included a component inventory surplus and alternate supply sources. The natural disaster, however, highlights the need for improved risk management and business continuity planning for Japan's consumer electronics and semiconductor companies.

Semi suppliers: Avg inventory levels



Source: HIS iSuppli, May 2011

Damaged Semi Wafer Facilities in Japan

Company	Global market share of wafers	Percent of global production affected
Sumco	20%	11% of global production in 2011
Shinetsu	30%	
MEMC	5%	

Source: IDC, April 2011

Global supply chain disruption?

Soon after the earthquake, several large technology companies — Japanese and otherwise — halted production because of damage sustained at facilities in northern Japan. Initially, it appeared the situation would affect the global economy and supply of electronics products.

Months later, it is clear that while supply disruptions at individual companies will have an impact on those companies' financial results in the short-term, the global supply chain has held up surprisingly well.

Seasonal inventory build

Typically, excess inventory of semiconductor components has a negative impact on pricing and profitability. Ironically, a 2-month high inventory level in the industry in 1Q11 (80 days) was a positive following the Japan disasters. This seasonal build helped act as a supply buffer to satisfy demand while many facilities re-tooled after the initial damage was sustained.

Short-term shortages in Japan

Japan's semiconductor sector accounts for roughly 20% of global semiconductor sales, though only half from units produced in Japan. This is still a significant number, and puts risk into the equation for Japanese suppliers and consumer electronics companies. Initial quarterly reports suggest impacts have been minimal to date. As inventory is depleted, more significant effects may emerge if operations are not swiftly restored. (Although many operations are fully functioning, risk remains.)

Wafers and DRAM see biggest impact

Japan-based production accounts for 60% of wafers sold globally to semiconductor manufacturers. The chart above shows how affected facilities in Japan will impact a large number of production units in 2011. Although auto companies were among the most affected in the immediate aftermath of the disaster, companies selling DRAM memory are also feeling the effects.

Facility disruptions and recoveries of note

Company	Notes
Sony	Among the nine facilities originally closed, eight are now partially or fully operational; most affected areas are Blu-ray disc and magnetic tape.
Renesas	Significant hard disk and auto capacity offline. End of September for return to full capacity.
Toshiba	Plant making components for smartphones and displays affected.
NEC	Back to full production.
Fujitsu	Back to full production.
Canon	Most facilities back to full production; 100% in September. Speeding construction of new Kyushu facility.
Texas Instruments	Plant closed until September affecting 10% of revenue stream.

Slowing demand, alternate sourcing

Another factor that has mitigated the risk of the Japanese crisis was an already slowing demand for certain consumer electronics in the United States and Europe. Because of this, there was less pressure on supply, following high production rates coming out of the holiday season. In addition, many consumer electronics companies are able to shift production to other facilities or source components from multiple vendors in a crisis. As a result, diversification of suppliers outside of affected areas in Japan has allowed for continued production in many cases.

Issues to consider

In the aftermath of the crisis, there are many lessons to be learned and business issues to address:

Risk management. During the recession, many companies pared expenses, including in the areas of risk management and business continuity planning (BCP). The crisis in Japan brings the need for risk management and BCP back into focus. The response to the earthquake and tsunami raises questions about Japanese companies' risk management and BCP. While some foreign companies implemented their plans, moving functions where possible to safer areas in western Japan, for example, domestic consumer electronics companies and semiconductor manufacturers did not. Hereafter, those companies and manufacturers are expected to strengthen BCP, Supply Chain Diversification and Supply Chain Visibility.

Supply chain diversity. To provide for sustainable supply chain and to better manage risk, consumer electronics/semiconductors companies must tackle supplier diversification, especially away from seismically active geographies where 90% of foundries are located. Also pertinent: power shortages and concerns about higher electricity costs arising from the lingering Fukushima nuclear crisis. High power costs over the longer term may accelerate the shift of procurement and manufacturing away from Japan.

Supply chain visibility. Understanding inventory numbers and demand characteristics fully is a highly valuable asset for an electronics or components vendor. Following the notion that better visibility makes for better planning, companies may need to improve relationships with key suppliers and customers. For some, reaching that goal may require improved functionality in ERP systems and customer portals, for example.

Supply chain visibility is critical for effective risk management and BCP. Companies must be prepared to quickly assess whether their suppliers will be able to maintain normal production levels and delivery schedules when disaster strikes. Similarly, companies must also be prepared to inform their own customers when conditions affect their ability to deliver as expected.

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<Contact>

PwC Japan

Email: pwjcjpr@jp.pwc.com