



**Global and China Touch Screen
(Panel) Industry Report, 2013-2014**

Apr. 2014

STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

REPORT OBJECTIVES

- ◆ To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- ◆ To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- ◆ To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- ◆ To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- ◆ To help company to succeed in a competitive market, and

METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

INFORMATION SOURCES

The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

Abstract

Global and China Touch Screen (Panel) Industry Report, 2013-2014 covers the followings:

1. Brief Introduction to Touch Screen (Panel)
2. Technological Trends of Small, Medium and Large-sized Touch Screen (Panel)
3. Status Quo and Trends of Metal Mesh and AgNW
4. Touch Screen (Panel) Market
5. ITO Film Market
6. 9 Small and Medium-sized Display Companies
7. 19 Touch Screen (Panel) Companies

In 2013, the touch screen market was featured with fierce price war and far lower demand for touch screen laptops than expected.

In the GFF field, many vendors, especially the ones in Mainland China, conducted expansion aggressively in 2012, but had to trigger a price war to seize customers in 2013. As a result, some vendors witnessed a significant decline in revenue, even the winners also paid a heavy price. The high-profit era of touch screens was gone for ever. The Mainland Chinese vendor SHENZHEN O-FILM TECH won the crown of laurels in the GFF field, but its gross margin fell by about 4%. The revenue of South Korean company MELFAS violently surged by 322% year on year, while its operating margin plummeted from 8.6% to 0.04% in 2013. MELFAS has expressly claimed its exit from some low-margin areas in 2014, which means that its revenue is expected to drop sharply.

Revenue of Major Global OUT-CELL Touch Screen Vendors, 2010-2013 (USD mln)

Region	Vendors	2010	2011	2012	2013
Taiwan	TPK	2,046	4,736	5,963	5,332
Taiwan	Wintek	1,417	2,754	4,058	2,561
Taiwan	GIS			1,245	2,470
Mainland China	O-FILM	39	130	550	1,368
Mainland China	Truly			237	777
Japan	NISSHA Printing	579	322	506	690
South Korea	ILJIN Display	96	293	540	603
South Korea	MELFAS	201	171	177	570
South Korea	S-MAC	175	425	440	508
Taiwan	JTOUCH	176	245	154	283
Taiwan	Youngfast	554	561	443	277
South Korea	ELK	203	212	167	253
Taiwan	EELY	150	230	330	250
Mainland China	LAIBAO HI-TECH			132	236
South Korea	Digitech Systems	101	102	214	219
Mainland China	EACH			103	161
Mainland China	Top Touch			82	153
Mainland China	MUTTO	40	69	124	150

Source: Global and China Touch Screen (Panel) Industry Report, 2013-2014; ResearchInChina

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The vendors who focused on laptop touch screens felt frustrated because the demand for touch screen laptops was severely lower than expected. TPK is the most typical example. Owing to the insufficient demand, F-TPK turned to invest in Cando in order to save costs and expenses; on November 4, 2013, it announced the halt of Hsinchu Plant's 3.5-generation line and 4.5-generation line; in late November, F-TPK also stopped the production of its subsidiary G&P Optical Solutions(Xiamen) Inc.

As for the technical aspect, GFF occupies the mainstream market by virtue of low prices, but threatened by the fast-growing OGS. Truly's revenue soared by 328% year on year in 2013 with the core product -- OGS, so that the company dominated the domestic high-end mobile phone market.

Metal Mesh has the merits below:

- ✘ Ultra low impedance, support for the touch screen with the maximum size of 24 inches.
- ✘ Competitive price, much lower than the ITO Film price
- ✘ Foldable and bendable, especially suitable for smart wearable products like iwatch
- ✘ Support ultra-narrow border design

For 13.3-inch laptops, Metal Mesh can control the border at 4 mm or less; for 15-inch laptops, it can do the border at 5 mm or less. The upstream metal mesh industry chain is grasped by minority vendors including Fujifilm and Mitsubishi; moreover, it requires new equipment, so the initial cost is quite high. YOUNG FAST, SHENZHEN O-FILM TECH and J-Touch prefer Metal Mesh, and J-Touch targeting medium and large-sized fields makes the quickest progress.

The biggest advantage of AgNW lies in the small-scale transformation of touch sensor production equipment instead of buying new equipment. However, due to its high resistance and poor light transmission, it is not appropriate for the medium-sized field for the time being, but very suitable for the small-sized field which has lower requirements on quality. It is reported that TPK's SNW has got the order from Apple iwatch for touch screens.

Apple adopts the IN-CELL design for iPhone5 and iPhone6 because of the unsatisfying GFF's performance and OGS' screen intensity. TOL meets Apple's requirements, but TPK's TOL monthly capacity is only 2 million and TPK is unlikely to implement expansion simply for Apple, as TPK's over-reliance on Apple has caused declining performance. TPK's goal is to minimize the dependence on a single client, especially Apple.

As for iPhone6, Apple may still make advantage of IN-CELL or Hybrid In-cell/On-cell. Currently, JDI has performed maturely in Hybrid In-cell/On-cell, which can be accomplished through the original IN-CELL production lines to meet Apple's huge demand with higher signal-to-noise ratio (SNR) and panel yield. Besides, such technology is fit for large-sized cell phones. However, only JDI and Snaptics master the patent of the technology, so Apple needs to buy the patent from them and then transfer it to Sharp and LG DISPLAY. Few softwares make optimal design for Windows 8 Modern UI touch, and users can see the touch function mostly from Windows boot screen and photo / video zoom, while the most commonly used MS Office, browsers and other softwares do not need touch function. Therefore, touch laptop buyers feel sort of disappointed. The less useful the touch function becomes, the less consumers will pay, and the smaller the touch laptop market will be.

The cost difference between touch laptops (or Ultrabooks) and non-touch laptops does not rest with reduced costs of touch screens. Touch screen costs have dropped by over 50% over 2013, but the prices of solid state disk (SSD), lithium polymer batteries, thin casings and motherboards applied to Ultrabooks remain unchanged. Ultrabooks are still more expensive than ordinary laptops, so consumers prefer the latter.

1. Introduction to Touch Screen

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