The Current Financial Crisis and It's Impact on the Compound Semiconductor Industry

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Abstract

Wireless telecommunications companies and the compound semiconductor companies that supply them face a rapidly changing environment. This paper outlines changes to the compound semiconductor industry, and examines the impact of capital market changes in the context of current profitability and debt.

INTRODUCTION

Unlike the Asian financial crisis, the deflation of the Internet Bubble and subsequent telecom downturn, this financial crisis is neither regional nor sector-specific. This is a global crisis impacting all countries and all industries.

Consumer behavior and spending drive handset buying decisions. In the new economic environment, phones are being upgraded later than in prior years. Mobile handset shipments are projected to decline in 2009. The last downturn in the industry began in late 2000, accelerated in 2001, and did not see recovery until 2003.

The compound semiconductor industry's historical record on profitability would be kindly viewed as mixed. There are notable examples of success, but a balanced view of the industry notes both successful entrepreneurs and others who have struggled and failed. The compound semiconductor industry's growth has in part been fueled by extraordinarily forgiving capital markets. Debt and equity financing are difficult to secure in today's capital markets. Changes in capital markets will cascade into changes in the compound semiconductor supply chain. Companies low on cash with marginal profitability and debt payments due in the short to medium term are in a remarkably precarious situation.

THE IMPACT OF TIGHTER CREDIT AND CAPITAL MARKETS

Companies typically fund their operations through a cash on hand, credit, and cash generated from operations. Liquidity is necessary for routine transactions and unforeseen events. When they need more cash, companies typically sell stock or issue debt. The tightening of debt and equity markets forces companies to be increasingly reliant on existing cash and cash from operations. The tightening of credit can result in suppliers being less generous with terms of sale. Lines of credit can be revoked. In a tight credit environment, a company low on cash will encounter new challenges.

STOCK PRICES AND FINANCIAL FLEXIBILITY

When the price of a stock falls, momentum can build. the stock may be removed from a specific index such as the S&P 500, the Russell 200 Small Cap, or the Wilshire 5000 Index. The removal or addition of a stock to a specific index greatly affects the liquidity and share price of the stock. In addition, most institutional Mutual funds in the US and abroad have specific funds based upon sectors or market cap minimums. Once a stock's price has fallen below a minimum level, a particular institution such as Vanguard or Fidelity Investments may not be able to invest or continue to hold shares in that company's stock. Sale of the stock can be mandatory and need to be executed quickly, putting downward pricing pressure on the stock price.

Companies can raise capital through the sale of shares of stock, and stock can be used by a company as a kind of currency in mergers and acquisitions as an alternative to all- cash deals. When the value of a company's stock drops, it loses potential to use its stock as currency. This means only one thing…trouble: trouble raising new equity, as existing shareholder's investments will be highly diluted, and trouble from the low value of the stock in any desired M&A activity. The result is a company with reduced flexibility to react to both problems and opportunities.

PAYBACK TIME

Cash is king. Debt is an albatross. Unfortunately for those companies with massive debt, it may be payback time. Debt is normally paid back on a schedule. When credit markets are functioning normally, companies can often restructure their debt, stretching out the payment schedule over time or obtaining lower interest rates. This is challenging now as buyers for new debt are scarce. The potential for a cash-strapped company to default on debt increases.

SURVIVAL MODE

A few of the fundamental steps of a contraction:
1] Consumer demand is weak; handsets sales are down.
2] Equipment system suppliers have lower revenues, negative growth and financial losses.
3] These companies in turn reduce orders for components and other subsystem. They cut labor and overhead to minimize the financial impact of the downturn.
4] Component vendors (i.e. RF Micro Devices, TriQuint, Skyworks) experience reduced orders, lower revenues and potential losses due to lower capacity loading.
5] This leads to staff reductions at both system and component level.
6] Unemployement leads to further deterioration of consumer confidence and purchasing of end products.
7] Companies struggle to maintain profitability. Those that cannot reduce fixed costs record losses and burn cash.
8] Companies with a weak cash position and losses and/or debt payments due within the next 18-24 months get increased scrutiny from Wall Street vultures.
9] Institutional investment grading services (Moody's, S&P, Fitch) reassess (typically downward) the credit risk for corporate debt.
10] The reassessment increases the cost per dollar for companies to refinance debt and to secure new debt. This puts further downward pricing pressure on the common stock price. The company may also be de-listed – removed from trading on an exchange.
11] If debt payment is due and the company is unable to pay the full amount, the company is in default. It would likely need bankruptcy protection (e.g. Nortel Networks) against its creditors. The common stock price essentially goes to zero. The company can be re-organized or liquidated.

CARRIERS

In 2001, mobile operators were saddled with tens of billions of dollars of debt due to the 3G spectrum auctions. Most mobile networks were not running at full capacity and the world was still approaching 1 billion mobile subscribers. But credit was readily available to many companies and was very low cost - virtually free. To build up their cash positions, many companies issued convertible bonds that had a very low coupon rate, on the order of 1.5%. Today, profitability at the mobile operators is at all time highs. They are sitting on billions of dollars of cash and have paid off their debt.

INFRASTRUCTURE

Infrastructure companies were profoundly affected by the downturn of 2001. Many survived by issuing more debt to raise capital. Others merged or were acquired. Collectively, the sector went through massive consolidation. Alcatel merged with Lucent Technologies to form Alcatel-Lucent. Nokia and Siemens formed Nokia Siemens Networks. Powerwave Technologies made numerous acquisitions including LGP-Allgon, Remec, and Filtronic while Commscope bought Andrew Corporation.

Exhibit 1 Powerwave (PWAV) Stock Price, 2007-2009

Source: Yahoo Finance

Exhibit 2: Commscope (CTV) Stock Price (2007-2009)

Source: Yahoo Finance

Prior to the downturn within the telecom market from 2001-2003, many companies within the wireless subsystems were able to achieve low to mid 30% gross margins. During and after the downturn, the gross margin structure for the industry dropped into the mid teens to mid 20s which, after subtracting operating expenses, led to zero or negative operating margins for the companies.

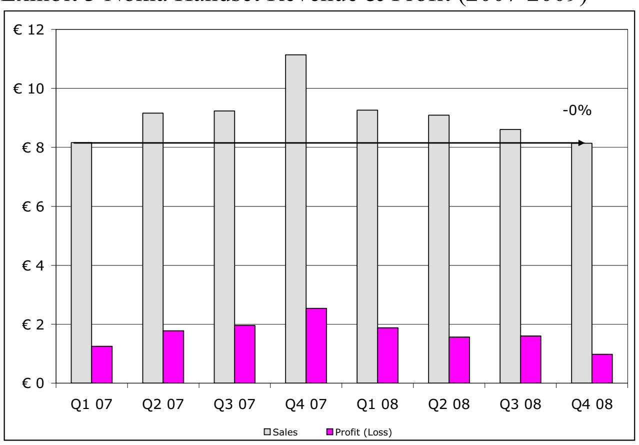
The last five years have seen strong growth from Chinese wireless equipment and component suppliers who are starting to lead innovation. Chinese base station OEMs such as Huawei Technologies and ZTE are the next generation of leaders in the industry, surpassing Alcatel-Lucent, Motorola, Nokai Siemens Networks and Nortel Networks. Funding from Chinese-controlled banks will allow them to finance network contracts that their competitors cannot. They should continue to gain significant market share.

MOBILE HANDSET OEMS

Prior to 2001, Nokia and Motorola were the leading handset OEMs. LG, Samsung and Sony Ericsson were struggling. Today Nokia remains the world leader Motorola has fallen dramatically and may drop from the top five. Samsung is second, and LG is third. Sony Ericsson continues to struggle. Chinese suppliers Huawei and ZTE were not shipping mobile handsets in 2001 but are now a notable presence in the market.

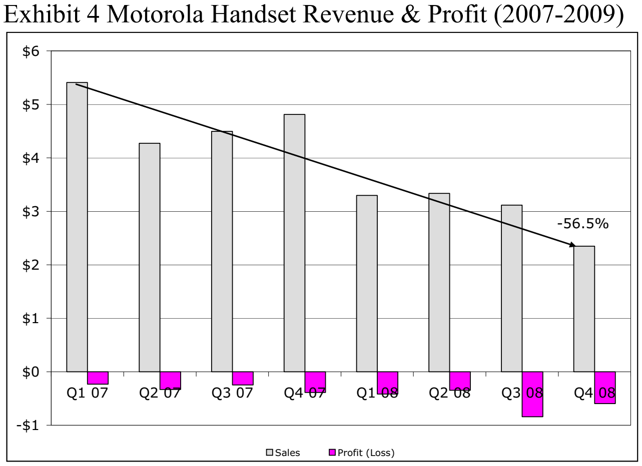
Nokia handsets earned EUR6.03 billion for 2008 compared with EUR7.53 billion in 2007, a decrease of 19.9%. Operating margins have dropped from 16.7% at the end of 2007 to 9.8% at the end of 2008. Nokia's revenues have returned to Q1 2007 levels at the end of Q4 2008.

Exhibit 3 Nokia Handset Revenue & Profit (2007-2009)



Source: Nokia

Exhibit 4 Motorola Handset Revenue & Profit (2007-2009)



Source: Motorola

Revenue for Motorola's Mobile Handset division declined by 56.5% since Q1 2007. The division lost $2.2 billion in 2008 compared with $1.2 billion in 2007.

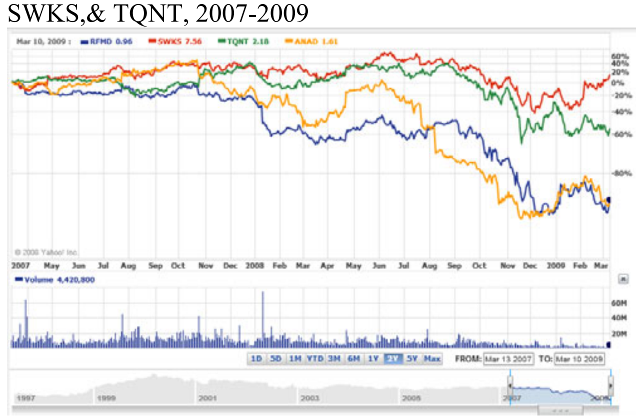
Smartphones are growing as a segment of the total market. Apple, RIM and HTC have emerged as leaders. Palm has pinned its hopes on the new Pre handset which may not keep it alive. Google has also entered into the market with its Android based platform.

GAAS IC MANUFACTURERS

The end-of-the century equity boom left most GaAs IC manufacturers flush with cash that helped them to survive. Alpha and Conexant formed Skyworks, TriQuint acquired TI's GaAs operation in Texas, Sawtech, and Infineon's GaAs operations. HP spun out their compound semiconductor activity into Agere which then sold the Ft. Collins GaAs operations to private equity as Avago. Motorola spun out Freescale which ultimately ended GaAs operations and RFMD embarked on a series of acquisitions that failed to produce financial results.

Since 2007, only Skyworks has been able to maintain a relatively flat common stock price. TriQuint Semiconductor common stock is down around 60%. Anadigics and RF MicroDevices common stock prices have both decreased by approximately 85%. The declines are similar but the stories behind these sharp declines are very different. Anadigics stock became a Wall Street darling based on potential growth but collapsed when GaAs operations proved problematic. RFMD's stock price decline reflects investor concern over both high debt levels and problematic acquisitions. Their core competency, GaAs operations, remains strong despite some revenue weakness in 2008.

Exhibit 5: Stock Price Comparison ANAD,,RFMD, SWKS,& TQNT, 2007-2009



Source: Yahoo Finance

Exhibit 5 shows the relative common stock price performance of the GaAs semiconductor IC suppliers.

RFMD's ill fated acquisition of Sirenza MicroDevices was completed at an extremely high valuation. The deal sapped RFMD's cash and sharply increased debt just as the financial crisis was beginning. It is difficult to see how the timing could have been worse. The 85% decrease leaves RFMD with a stock price near US$1.00, hampering the ability of the company to refinance debt of US$610 million that will come due between 2010 and 2014. And while it has been mentioned as a possible acquisition target, the high level of debt decreases the company's takeover appeal.

As of this printing, the company's cash position was US$257 million and the market cap was roughly USD $250 million, at or below cash. Can RF MicroDevices survive? At current profitability, they would be able to make their debt payments. RFMD will need to continue to generate significant cash to make debt payments. A decline in profitability would increase liquidity concerns.

EPITAXIAL FOUNDRIES

In the last downturn, epitaxial foundries saw a relatively large number of changes, dramatized by financial improprieties at Procomp. Picogiga became part of SOITEC. ATMI's epi operation was acquired by Sumitomo Chemical. UK based IQE, itself a consolidation of UK-based EPI and US-based QED, acquired both Emcore's OMVPE foundry in the US and MBE Tech in Singapore.

Today, the contrast between the two largest epitaxial foundries could hardly be more dramatic. Kopin has over $100 million in cash and a long relationship with Skyworks, currently the best performing GaAs IC manufacturer. IQE has significant debt obligations, little cash, and a revenue stream impacted by the changing fortunes of Anadigics.

BULK CRYSTAL

The US government's GaAs Title III program purported to establish a stable domestic base of GaAs crystal production, but all 3 participants ceased domestic production. Notable GaAs supplier Litton-Airtron was closed. M/A-Com's bulk crystal growth operation faded from the merchant market, and AXT moved its operations to China.

AXT has no significant amount of debt, but it needs to balance its revenues and cost structure. If its financial picture does not improve, it could run out of cash in 24 months, with uncertain prospects for new debt or equity financing. The company could raise more cash through the issuance of more common stock but would probably need to attach warrants to the shares, which would further dilute existing shareholders value in the company. With a market cap below USD $30 million, AXT has been mentioned by securities analysts as being ripe for acquisition.

AXT's limited cash reserves are a sharp contrast with its peers. Japanese giants Sumitomo Electric and Hitachi Cable will certainly have enough cash to sustain their operations. Freiberger Compound Materials can dip into the deep pockets of Federman Enterprises, Ltd. to survive.

CONCLUSIONS

How will capital markets two years from now treat the chronically profit-challenged? One scenario is continued subjugation of shareholder interests to the enrichment of executives through bonuses, options and severance packages, and the enrichment of investment bankers through bloated fees. This is highly probable absent stronger corporate governance and more active shareholders. Another scenario has investors pressing for accountability and long term return on investment. In this scenario, investors have learned the lesson that executives' get-rich-quick bubble-driven compensation dilutes long term shareholder value, as the bubble inevitably bursts and assets are written down. In this scenario, corporate boards (or the shareholder that elect them) would tie rewards more rigidly to long term profitable operations.

As usual, reality will be a mixed bag. The degree to which recent events will affect longer term capital markets remains to be seen. Public discourse can incrementally change laws, regulatory structures, and enforcement actions. Those changes will play out over time. But for the immediate future, we have a new model - the glass is not half empty, it's half broken.

Capital markets will be extremely risk adverse for 18-24 months, and what will follow that period is uncertain. Weaker players are already moving to preserve cash. They know that new financing will be extremely dilutive of current shareholder value, if it is available at all.

The good news: Consumers now view mobile phones as a necessity. The mobile phone market will recover even if some OEMs do not. The world continues to slowly progress towards 3G technology and services. Shipment of handsets with 3G and 3.5G technology will climb. Touchscreen smartphones such as the Apple iPhone 3G, the RIM Blackberry Storm, the Nokia E75 are becoming mainstream with consumers. The GaAs content within these phones for power amplifier modules and switches will sustain or grow.

Wireless-enabled netbooks that support 3.5G services may expand the opportunity for GaAs. Expect tens of millions of these devices with embedded TD-SCDMA, LTE or WCDMA HSPA modules. The wireless market will return to growth and continue to present opportunities for the compound semiconductor industry.