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Test Technology Technical Council

Burn-in & Test Socket Workshop

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Hilton Phoenix East / Mesa Hotel
Mesa, Arizona

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Keynote Address
Tuesday 3/04/03 8:00PM
“IC Market Recovery Outlook”

Bill McClean
President
IC Insights, Inc.
IC Market Recovery Outlook

Presented by:
Bill McClean
President, IC Insights

BiTS 2003 Workshop Keynote
March 4, 2003
Mesa, Arizona
About IC Insights

IC Insights, Inc., based in Scottsdale, Arizona, is dedicated to providing high-quality, cost-effective market research for the integrated circuit industry. Founded in 1997, IC Insights offers coverage of global economic trends, the IC market forecast, capital spending and fab capacity trends, product market details, and technology trends, as well as complete IC company profiles and evaluations of emerging markets for ICs.

IC Insights Products & Services

The McCLEAN REPORT
An In-Depth Analysis and Forecast of the IC Industry

STRATEGIC REVIEWS
Extensive Profiles of the World’s IC Manufacturers and Fabless Suppliers

EMERGING IC MARKETS
A Study of Future Market Opportunities for Integrated Circuits

Additional Information
www.icinsights.com
1-480-348-1133
Electronic Industry Interdependence

WW Electronic System Sales

2000: $972B (-14%)
2001: $837B (-6%)
2002: $790B

Semiconductor Market

2000: $204.4B (-32%)
2001: $139.0B (1%)
2002: $140.5B

Semi Equipment Market

2000: $52.5B (-38%)
2001: $32.8B (-28%)
2002: $23.5B

Semi Materials Market

2000: $26.6B (-24%)
2001: $20.2B (7%)
2002: $21.6B

Source: IC Insights, SEMI
Cycle Amplitude Comparisons

25-Year Averages

- World GDP: 3.4%
- Electronic System Market: 7%
- IC Market: 14%
- Semiconductor Capital Spending: 14%

Note: Points shown are the peak deviations from the 25-year average figure.

Source: IC Insights
Electronic System Semiconductor Content

Source: STMicroelectronics, TI, IC Insights

*Forecast
The IC Industry Cycle

- Rising Market
- Aggressive Capital Spending
- Excess Capacity
- Price Softening
- Weak Market
- Conservative Capital Spending
- Little Capacity Added
- Price Firming

History Repeats Itself

Source: IC Insights

Source: WSTS, IC Insights

*Forecast

Source: IC Insights

*Forecast
1992-2002 Quarterly IC ASP and Unit Volumes

92-02 Average Annual IC Unit Growth = 9%
92-02 Average Annual IC ASP Growth = 0%

Source: WSTS, IC Insights
2001-2002 IC Market Cycle

Source: WSTS, IC Insights
## IC Insights' IC Industry Forecast Assumptions for 2003

<table>
<thead>
<tr>
<th>2003 Factors</th>
<th>&lt;10% Growth</th>
<th>10% to 20% Growth</th>
<th>&gt;20% Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worldwide Economic Situation</td>
<td>&lt;2.8% GDP Growth</td>
<td>2.8%-3.4% GDP Growth</td>
<td>&gt;3.4% GDP Growth</td>
</tr>
<tr>
<td>Non-Japan Asian Economies GDP Growth</td>
<td>&lt;4.5% GDP Growth</td>
<td>4.5%-5.5% GDP Growth</td>
<td>&gt;5.5% GDP Growth</td>
</tr>
<tr>
<td>IC Capacity Situation</td>
<td>&lt;85% Capacity Utilization</td>
<td>85%-90% Capacity Utilization</td>
<td>&gt;90% Capacity Utilization</td>
</tr>
<tr>
<td>IC Unit Volume Shipments</td>
<td>&lt;8% Increase</td>
<td>8%-13% Increase</td>
<td>&gt;13% Increase</td>
</tr>
<tr>
<td>Worldwide Electronic System Sales</td>
<td>&lt;4% Growth</td>
<td>4%-6% Growth</td>
<td>&gt;6% Growth</td>
</tr>
<tr>
<td>2003/2002 IC ASP Change</td>
<td>&lt;1% (ASP &lt;$1.55)</td>
<td>1% - 6% (ASP = $1.55-$1.62)</td>
<td>&gt;6% (ASP &gt;$1.62)</td>
</tr>
<tr>
<td>Foreign Currency/U.S. Dollar Exchange Rate</td>
<td>Deflationary</td>
<td>Moderately Inflationary</td>
<td>Highly Inflationary</td>
</tr>
<tr>
<td>IC Insights’ Forecasted Probability of Occurrence</td>
<td>25%</td>
<td>55%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Source: IC Insights

- Capital Spending % of Semi Sales
- Capital Spending Change

Source: IC Insights
Worldwide MOS IC Wafer Capacity Increases
(200mm Equivalents)

Source: SIA, IC Insights
First Quarter Worldwide Semiconductor Capital Spending Plans vs Actual Annual Expenditures

Source: IC Insights
IC Insights’ Summary

- IC unit volume shipments will continue to average 7%-9% growth/year.
- China will set the price for electronic system production, IC foundries will set the price for wafer processing — both will be deflationary.
- Chinese IC producers will “learn their economics lesson,” similar to Japanese, Korean, and Taiwanese companies. The Chinese are likely to be the last large group of “newcomers” to IC production.
- Foundries will increase IC production marketshare, but competition will be fierce. Likely to endure a period of “profitless prosperity.”
- Total share of a given market will continue to be limited to 100 points.
- Electronic system sales and IC industry cycles are forecast to continue, but with lower “average” growth rates during the cycles.
- An IC industry recovery has begun and is forecast to increase in intensity in 2003 and 2004.

Source: IC Insights