The State of the Semiconductor Industry



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國際半導體設備材料產業協會

Agenda

- What is the outlook for worldwide semiconductor industry?
  - How will recent weakness impact 2H10 and 2011?
  - How have Gartner's key forecast assumptions changed from last quarter?
- How will mainstream and emerging applications impact short and long-term semiconductor growth?
- What is the outlook for Asia/Pacific semiconductor market growth?

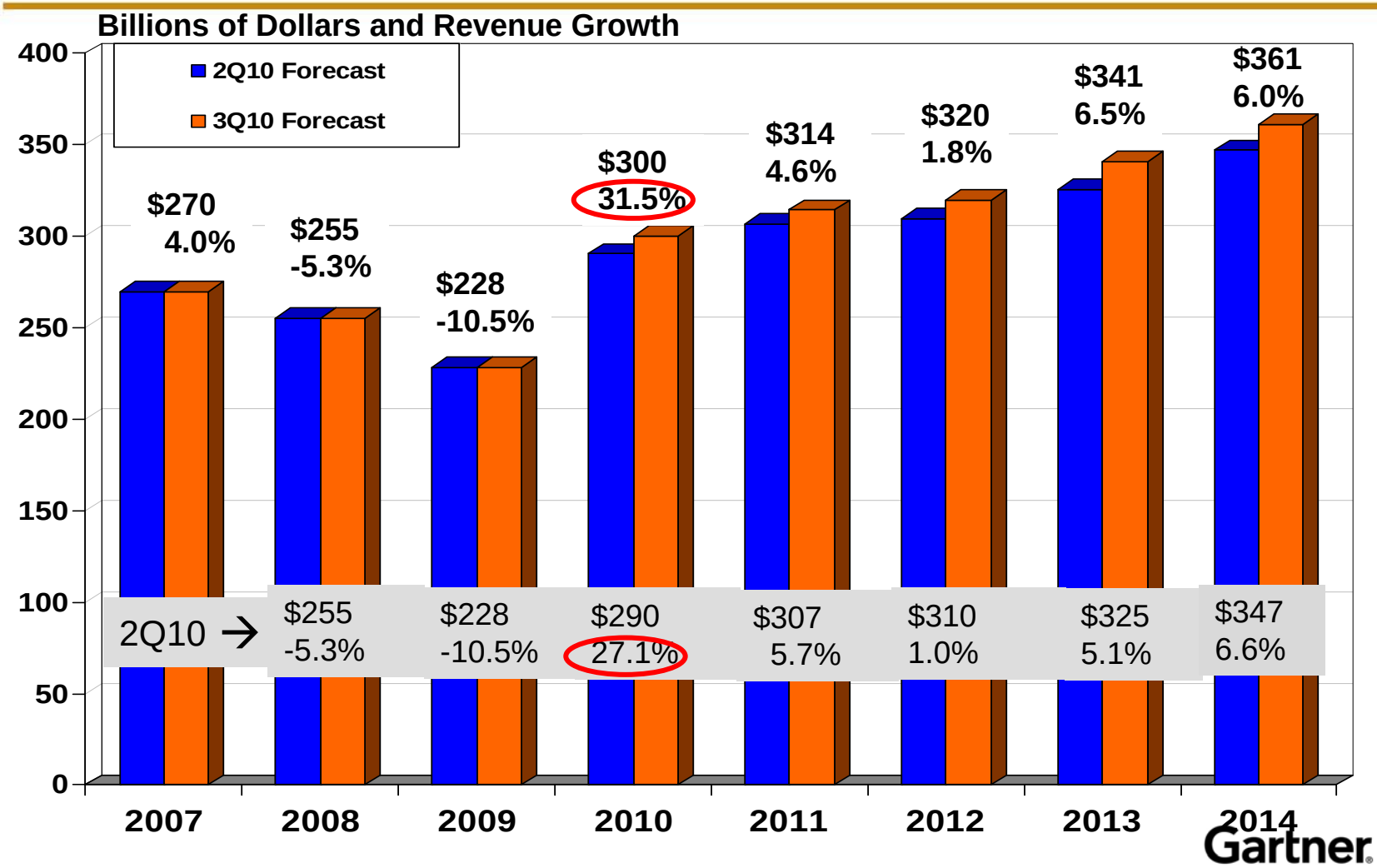
Are We Approaching a Revenue Peak? - Examine the Evidence

- Sequential quarterly growth has been amazingly strong the last five quarters.
- Intel revised its Q3 guidance downward, and several other semi companies have experienced weakness
- Slowdown reported in mid-June to mid-July – blamed on European fears; however going forward global economic recovery weakening
- We are at a turning point in front end and back end manufacturing utilization rates

The key question is, "Will the slowdown cause an inventory adjustment?"

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Worldwide Semiconductor Revenue Forecast, 3Q10 Update



3Q10 Key Assumptions

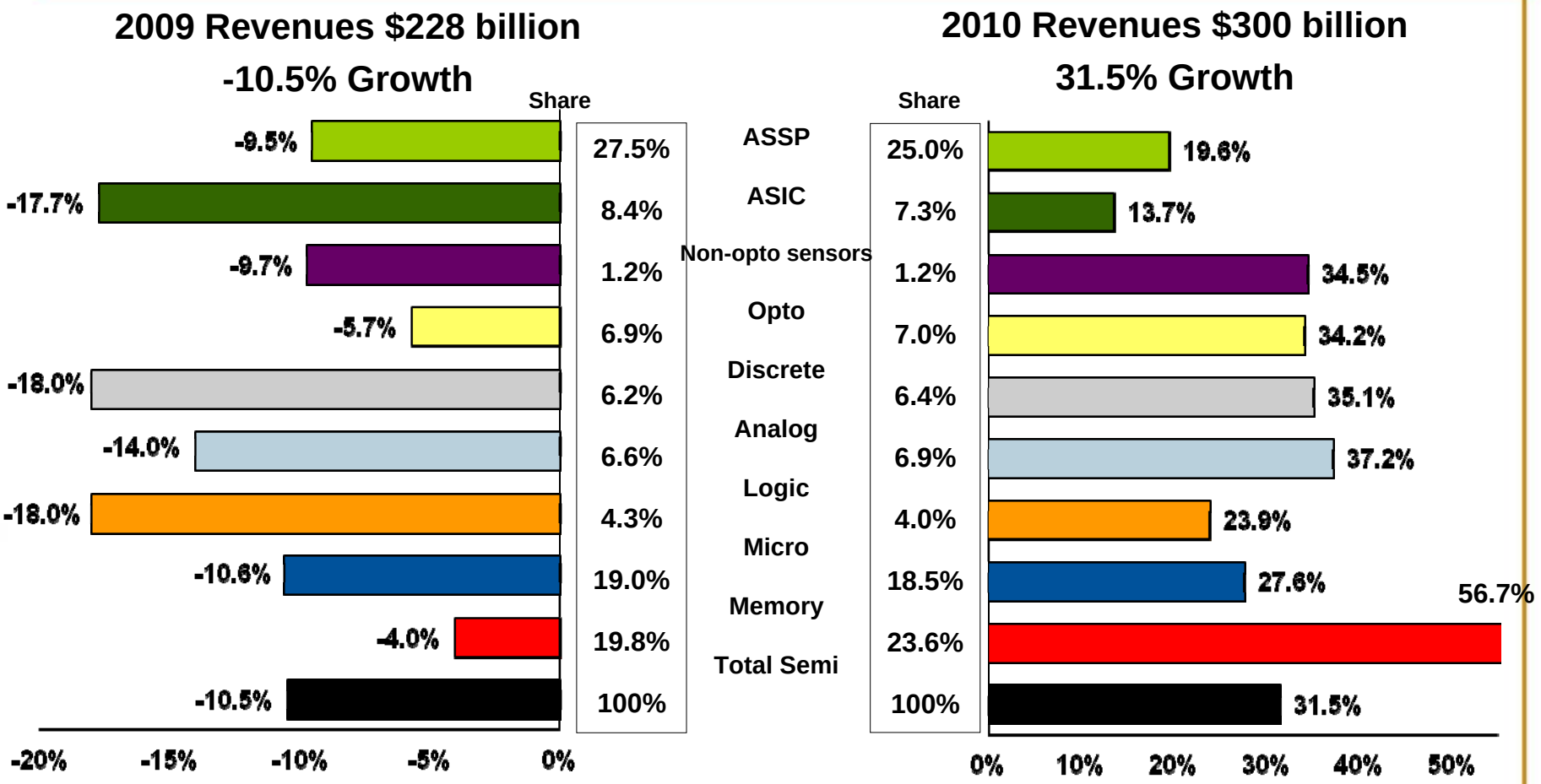
- PC production unit growth in 2010 is now expected to be 19%, down from 22% in 2Q10 update.
- Increase in Media Tablet production – now 13.6M units in 2010, up from 10.4M units in 2Q10 update; longer term revised upwards significantly
- Cell phone production unit growth in 2010 now expected to be 15%, up from 14% in 2Q10 update. Application specific cell phone chip revenue is expected to grow only about 13% due to significant ASP pressure
- Light Vehicle production growth revised up to 17.9% in 2010 (up from 13.5% in 2Q10 Update)
- Second half 2010 growth is expected to be below seasonal norms as semiconductor sales align with electronic system sales

Broad-based Recovery Driving 2010 Upside (3Q10 versus 2Q10 Forecasts)

Applications	2010 Change from Last Quarter ($B)	% of Total
PCs & Cell Phones	3.04	30.0%
Automotive	2.03	20.0%
TV, LCD	0.41	4.1%
All Other Applications	4.66	45.9%
Total Applications	**10.14**	**100.0%**

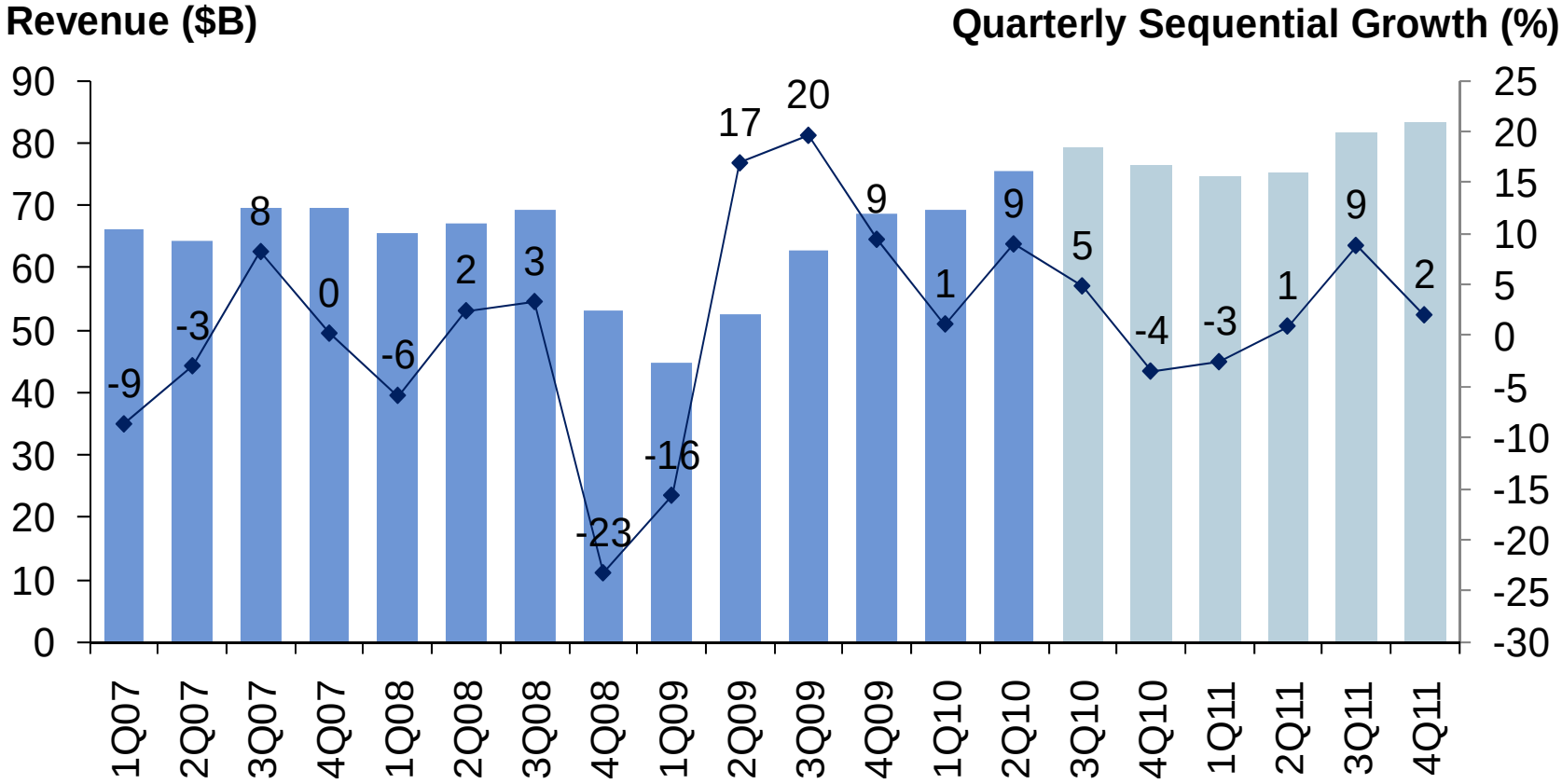
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Worldwide Semiconductor Forecast, 3Q10: Market Growth by Device, 2009 and 2010



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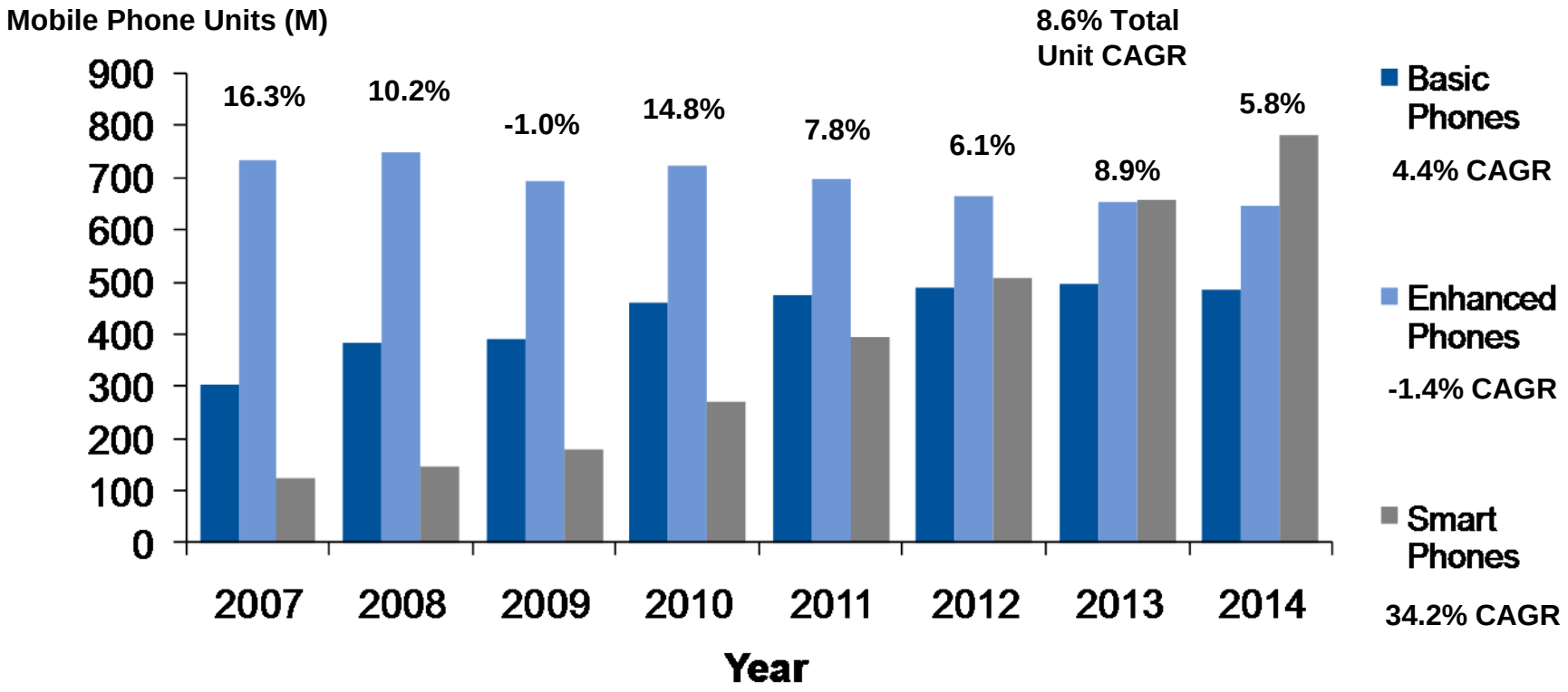
Worldwide Semiconductor Forecast, 3Q10: Quarterly Growth Profile



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Mobile Phone 2010 Outlook Continues to Improve, Smart Phones Set to Outperform

	2007	2008	2009	2010	2011	2012	2013	2014	CAGR '09-'14
Semi TAM ($B)	46.4	42.7	39.2	46.8	50.3	52.4	57.3	60.2	9.0% CAGR
Yr/Yr Growth	7.4%	-8.0%	-8.3%	19.4%	7.5%	4.2%	9.3%	5.1%	



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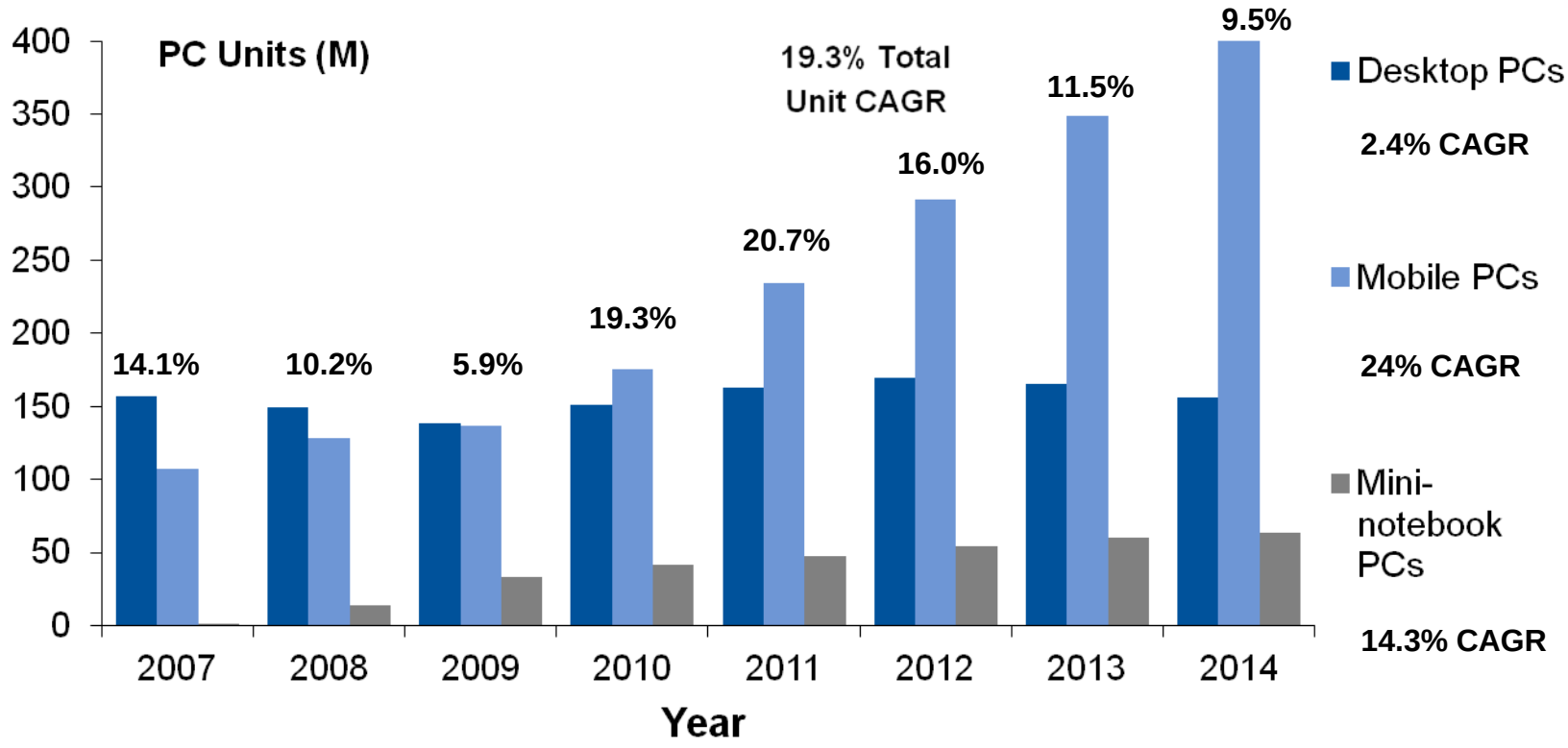
Trends in Mobile Phones and Semiconductor Content

- Smartphone market continues to drive semiconductor TAM in mobile phones:
  - 2010: 18 percent of units and 36 percent of semi TAM
  - 2014: 41 percent of units and 64 percent of semi TAM
- Application-specific semis will grow 12.7 percent in 2010, driven by apps processors and wireless connectivity with growth of 33 percent and 37 percent respectively. Significant ASP pressure in baseband limits revenue increase to 10 percent.
- Expect entry-level smartphones to become a major driver beginning in 2011. This is the key to a second wave of growth in smartphones.
- Expect smartphones to use a mix of discrete and integrated apps processor in 2010 and 2011 and start to trend towards integrated solutions as entry-level smartphones represent a larger share
- In the enhanced and basic phone categories integration is critical. Expect solutions that integrate the baseband/application processor with PMICs, transceivers and connectivity solutions.

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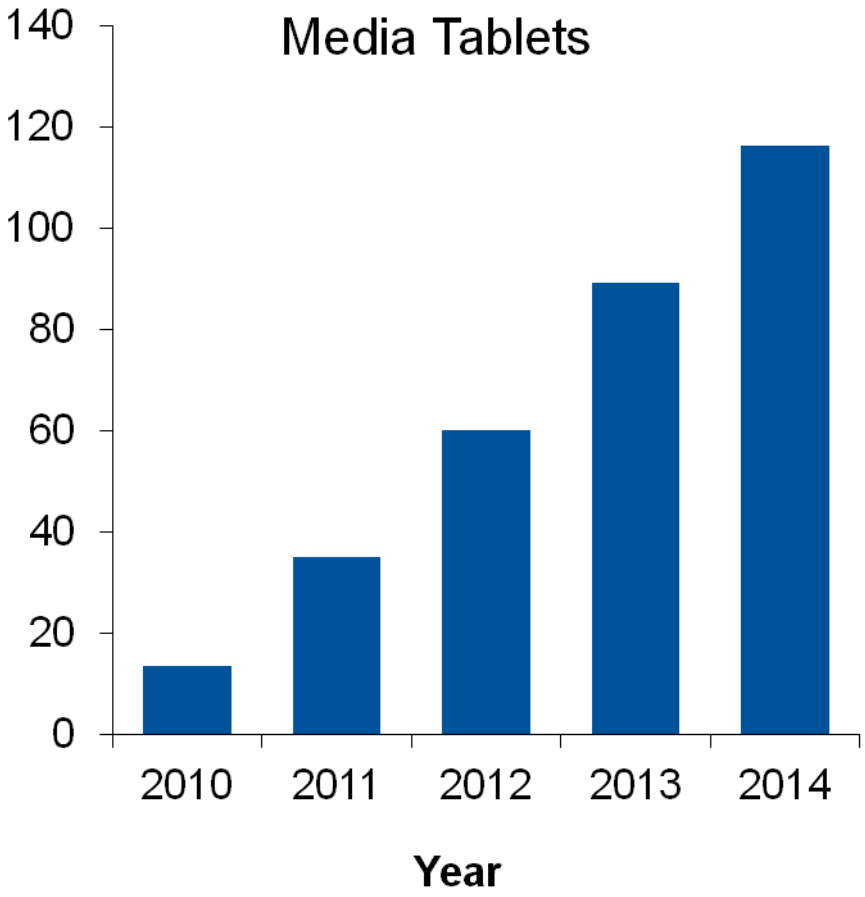
PC Production Forecast: Enterprise Replacements Pick Up Consumer Slack

	2007	2008	2009	2010	2011	2012	2013	2014	CAGR '09-'14
Semi TAM ($B)	50.3	47.3	47.6	67.5	68.9	65.2	69.9	73.7	9.3% CAGR
Yr/Yr Growth	4.6%	-8.1%	0.5%	41.9%	2.1%	-5.4%	7.2%	5.5%	



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Media Tablets Outlook



Media Tablet Production (Millions of Units)

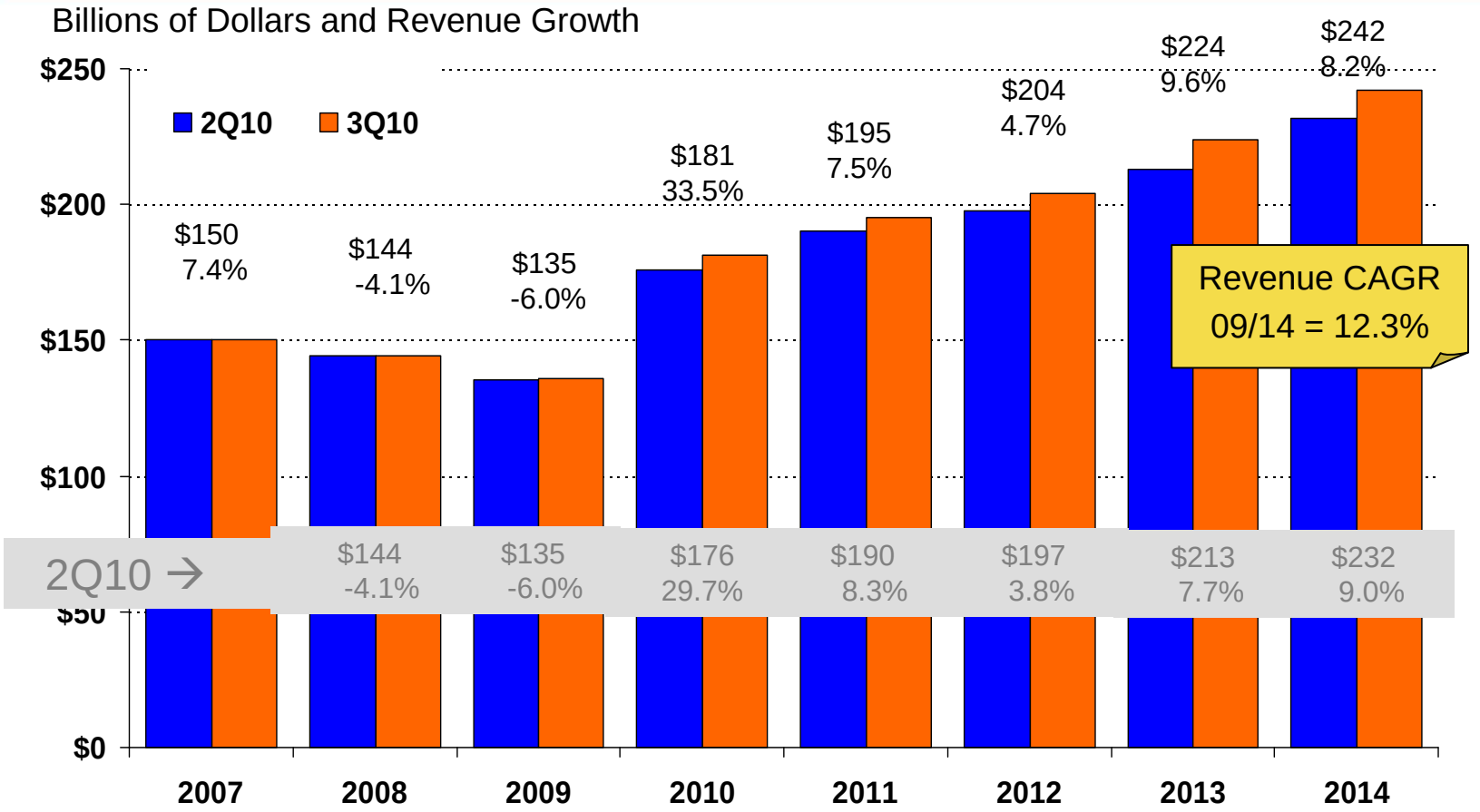
- Immediate adoption has been faster than expected
  - iPad surprisingly versatile.
  - Viable but expensive substitute for netbook.
  - OS limitations mean not a viable substitute for a full-featured PC
- OS and hardware evolution will make Media Tablets viable PC alternative in 2012
- The iPad has proven demand for 10" tablets. 7" tablets are likely to emerge as a more media-focused segment
- Early hints of strong interest from enterprises in media tablets.

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Key Applications Summary

- Outlook for mobile phone market steadily improving throughout 2010
  - Total market expected to grow 15 percent and smartphones are driving both unit and semiconductor growth.
- Consumer PC purchases below expectations
  - Economic concerns are weighing on consumers minds. Consumer PC purchases in mature markets were slightly weaker than expected in second quarter. Outlook for third quarter is below seasonal growth.
- Some of this lost consumer demand in 2010 is being made up for by stronger than expected uptake of Media Tablets
  - By 2014, cannibalization by Media Tablets has reduced forecast by about 30m units.
- Enterprise PC replacement cycle has been pulled in
  - Close to 500 million professional PCs to be replaced in next 3 years
  - First signs of volume deployments this quarter.
  - However, as cycle wanes, unit growth outlook in 2013 and 2014 is significantly lower

Asia/Pacific Semiconductor Market Forecast, 3Q10 Update



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SEMICON Taiwan 2010

Asia/Pacific Semiconductor Market Major Trends

- Asia/Pacific will continue to grow its share of worldwide semiconductor revenues, reaching around 67% in 2014, from 60% in 2010
- China continues to dominate the Asia/Pacific semiconductor market…accounts for around 65% of the total market. However, will experience sustained lower growth over the forecast period
- Emerging market like India expects to achieve higher CAGR (2009-2014) between 20-25%; Driven by favorable government policies and growing domestic demand for wide range of electronic products

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Conclusions

- Semiconductor revenue still poised to hit record levels in 2010
  - Most-likely 2010 growth 31.5%, down-side scenario possible
  - DRAM fastest growing device type in 2010
- PC supply chain showing most evidence of a correction
- Modest chip correction programmed in back-half 2010 and into 2011 as semiconductor growth re-aligns with system growth
- China continues to dominate the Asia/Pacific semiconductor market; India and 'Other AP' show long-term growth potential

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