

**JUNE 25, 2008**

## **Semiconductor R&D Spending to Reach \$49.2 Billion in 2008**

*Expenditures rise 12% in 1Q08, but growth is expected to ease back to 8% for the year*

Worldwide spending on semiconductor research and development grew 12% in the first quarter of 2008 to \$11.1 billion compared to \$10.0 billion in R&D expenditures during 1Q07, according to a new analysis of data from IC Insights' *Strategic Reviews Online* database of integrated circuit suppliers. R&D spending as a percent of semiconductor market sales stood at 17.5% in 1Q08 compared to 16.4% in the same quarter last year.

### **MORE INFORMATION CONTACT**

Trevor Yancey  
Vice President  
IC Insights, Inc.  
Phone: +1-480-348-1133  
Email: [trevor@icinsights.com](mailto:trevor@icinsights.com)

In 2007, integrated device manufacturers (IDMs), fabless semiconductor companies, and pure-play wafer foundries spent a total of \$45.7 billion on R&D and related engineering activities for new IC products, according to data compiled by IC Insights. Industry-wide R&D expenditures grew 8% in 2007 from \$42.5 billion in 2006. R&D and engineering expenditures as a percent of semiconductor sales rose to 17.9% in 2007 from 17.2% in 2006. In contrast, R&D expenditures as a percent of semiconductor revenues averaged 14.9% between 1990 and 2007.

With next-generation IC processes becoming more expensive to develop and IC design costs exploding, R&D and engineering budgets have increased at a faster rate than the industry's sales growth since the early 1990s. R&D and engineering expenditures increased at a compound average growth rate (CAGR) of 12.7% between 1990 and 2007, while semiconductor sales grew at a CAGR of 9.9% in the 17-year period. Overall, IC Insights expects this trend to continue into the next decade, but R&D expenditures in 2008 are forecast to rise by just 8% to \$49.2 billion as some IC makers attempt to curb spending and transfer some development activities to third-party foundries. Historically, pure-play foundries have invested far less of their sales in R&D as can be seen in Figure 1.

In 1Q08, IDMs collectively spent 17.9% of revenues on R&D and related engineering activities, while fabless semiconductor suppliers averaged 25.1% of sales on R&D and engineering costs in the first

quarter of 2008, according to IC Insights' analysis. Meanwhile, pure-play silicon foundries spent only 7.1% of total sales on R&D and engineering expenditures in 1Q08, based on data from the *Strategic Reviews Online* database.

### R&D Spending Among IDM, Fabless, and Foundry Leaders

2007 Rank	Company	Business Model	Region	2006 R&D (\$M)	2007 R&D (\$M)	2007 Sales* (\$M)	2007 R&D as % of Sales	% of Industry R&D in 2007
1	Intel	IDM	U.S.	5,873	5,755	35,021	16.4%	12.6%
2	Samsung	IDM	Korea	3,395	4,263	19,951	21.4%	9.3%
3	TI	IDM	U.S.	2,195	2,155	13,309	16.2%	4.7%
4	Toshiba	IDM	Japan	1,755	2,020	11,850	17.0%	4.4%
5	AMD	IDM	U.S.	1,205	1,847	6,013	30.7%	4.0%
6	STMicroelectronics	IDM	Europe	1,533	1,802	9,966	18.1%	3.9%
7	Renesas	IDM	Japan	1,350	1,360	8,001	17.0%	3.0%
8	Broadcom	Fabless	U.S.	1,117	1,349	3,754	35.9%	3.0%
9	NXP	IDM	Europe	1,248	1,344	6,026	22.3%	2.9%
10	Qualcomm	Fabless	U.S.	1,220	1,215	5,619	21.6%	2.7%
11	Freescale	IDM	U.S.	1,204	1,139	5,447	20.9%	2.5%
12	Infineon**	IDM	Europe	1,011	1,067	5,772	18.5%	2.3%
13	NEC	IDM	Japan	1,138	1,043	5,593	18.6%	2.3%
14	Marvell	Fabless	U.S.	658	989	2,895	34.2%	2.2%
1	TSMC	Foundry	Taiwan	494	546	9,813	5.6%	1.2%
2	UMC	Foundry	Taiwan	284	289	3,247	8.9%	0.6%
3	Chartered	Foundry	Singapore	153	160	1,458	11.0%	0.4%
4	SMIC	Foundry	China	94	97	1,550	6.3%	0.2%

\*Semiconductor sales

\*\*Excludes Qimonda, which was spun out of Infineon as an independent memory IC supplier.

Source: IC Insights' *Strategic Reviews Online* database

**Figure 1**

### Report Details

- Detailed company profiles of more than 220 IC suppliers, including their 5-year sales, R&D, and capital expenditures figures, key management, product/services offered, strategic alliances, process technology, and detailed wafer fab information is offered in IC Insights' *Strategic Reviews Online* database. The online database recently completed a major revision and receives ongoing updates throughout the year. A 12-month, single-user subscription to *Strategic Reviews* is priced at \$2,290. Access is also available under a multi-user corporate license for \$3,990.
- Additional details about R&D spending and overall IC industry trends through 2012 can be found in the 2008 edition of *The McClean Report*, IC Insights' complete analysis and forecast of the integrated circuit market. Packed with 400 tables and graphs, the report is available in three-ring binder, CD-

ROM, and on-line formats, and also comes with free monthly updates by e-mail from March through November. A single copy of the report in CD-ROM or binder format is priced at \$2,790. A bundled CD-binder set is priced at \$3,285. An Internet access password is available as a \$695 option. The report is also available under a multi-user corporate license for \$5,990.

#### **About IC Insights**

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

**Web Site:** [www.icinsights.com](http://www.icinsights.com) • **Phone:** +1-480-348-1133 • **E-mail:** [info@icinsights.com](mailto:info@icinsights.com)