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## GlobalFoundries Launches as U.S. Foundry

The spin-out of AMD's manufacturing arm into a global foundry named GlobalFoundries became official today. CEO Doug Grose said the foundry will offer customers a high-k/metal gate 32 nm technology in fabs that are not endangered by earthquakes. Analysts said the new foundry enters a highly competitive sector where many large customers are likely to remain loyal to TSMC and other foundries.

David Lammers, News Editor -- Semiconductor International, 3/3/2009 10:01:00 PM

**GlobalFoundries** (Sunnyvale, Calif.) launched today as a new player in the foundry market, with CEO Doug Grose saying he plans to attract large customers with a high-k/metal gate 32 nm technology available ahead of Taiwan Semiconductor Manufacturing Co. Ltd. (TSMC, Hsinchu, Taiwan). The foundry also will offer customers a "continuity of supply," which he said is endangered by the prevalence of earthquakes in Taiwan.

Analysts said GlobalFoundries spins out of Advanced Micro Devices Inc. (AMD, Sunnyvale) with a major challenge ahead of it: convincing the largest fabless customers that they should "take the risk" of endangering their relationship with TSMC, which dominates the leading-edge foundry business. "I think it is going to be pretty tough for them, because the top 10 or so fabless companies are not going to take the risk" of alienating TSMC and other established foundries, said Bill McClean, president of IC Insights Inc. (Scottsdale, Ariz.).



**Doug Grose,**  
CEO,  
GlobalFoundries

Grose rebutted that argument by saying, "I wouldn't discount the fact that the large fabless guys are looking for choice. On their list of concerns is continuity of supply, security of supply. They tell us they get a little nervous about having their assets sitting in one geography."

Also, Grose said TSMC may be late with high-k, which he said is critical from a leakage standpoint. "There is a lot of interest in high-k at 32 nm," he said. "It is a differentiator in terms of scaling. Between 32 and 28, device scaling is going to be a tough nut to crack, and a pure oxide/poly technology is not the approach to take."

McClean said the new foundry's best shot may be in serving the IDMs that seek to become fab-lite, including the big European chipmakers NXP Semiconductor (Eindhoven, Netherlands) and Infineon Technologies (Munich, Germany), or Freescale Semiconductor Inc. (Austin, Texas) in the United States.

Grose, who was AMD's senior vice president of manufacturing, said early discussions with the largest fabless companies revealed "some gaps" among the existing foundries, with high-k technology and worries about earthquakes high on the list. Potential customers have said that in today's economic environment, it is unclear if United Microelectronics Corp. (UMC, Hsinchu, Taiwan) and Chartered Semiconductor Manufacturing Ltd. (Singapore) will be able to keep up with the technology roadmap and investment levels needed to stay at the leading edge.

McClean said oil-rich Arab investors are intrigued by promises of growth in the foundry sector. GlobalFoundries marks the **first major investment in semiconductor manufacturing** by a Middle East nation, in this case the Advanced Technology Investment Company (ATIC), an investment arm of Abu Dhabi.

### Dresden reorg

GlobalFoundries will soon offer 32 nm technology, with its first shuttles out in Q2 and a shrink to 28 nm next on the schedule. The new foundry is expanding capacity at the previously named AMD Fab 36/Fab 38 complex in Dresden, Germany, which is now GlobalFoundries Fab 1, with Module 1 initially focused

on 45 nm silicon-on-insulator (SOI) technology and Module 2 being the soon-to-be-completed 32 nm bulk silicon fab. Jim Doran, a long-time AMD manufacturing executive who in recent years worked at Spansion Inc., is now in charge of the Dresden facility as a GlobalFoundries senior vice president.



**The AMD manufacturing spin-off has a new name, a logo, and competitive challenges ahead of it, analysts said.**

The foundry also plans to break ground this summer on a planned \$4.2B fab at the Luther Forest Technology Campus in Saratoga County, N.Y., that will be capable of 32/28 nm technology in 2012. Grose said the largest fabless companies, as well as IDMs quickly moving toward fabless manufacturing, are encouraged by the new foundry's plans.

"I can tell you the customers are very interested in our investment plans. And we are not going after 20 or 30 customers; we are going after perhaps 10-12," Grose said. "We plan to proceed carefully and build deep partnerships with those customers who want leading-edge capability going forward."

While many of the largest customers have their own EDA tools and intellectual property (IP) cores, Grose said GlobalFoundries will move to build out the "customer facing" infrastructure needed for many other customers. "IP is an ecosystem, and we have already begun talking to the supplier base. They are interested in working with us," he said.

Joanne Itow, foundry analyst at Semico Research (Phoenix), said GlobalFoundries' strategy is reminiscent of the approach IBM took when it said it would be a major foundry. "IBM also took a premier customer strategy when IBM first thought it was going to conquer the foundry business," she said. IBM's strategy ran up against what Itow called TSMC's "nearly perfect reputation" for serving its customers. She said many foundry customers also find that if they give TSMC nearly all of their wafers, they get "added benefits" that keep them tied closely to TSMC.

Itow said GlobalFoundries starts out with existing fabs, deep pocket investors, some experienced managers, and a leading-edge technology based on the Fishkill Common Platform strategy. But, she said, "I think they will find out how hard it is in the foundry business. The question is whether GlobalFoundries will be offering anything different than what UMC and Chartered can offer now. I think Samsung also is finding it a little more difficult than originally expected."

Grose said his team "has its eyes wide open" to TSMC's vaunted reputation for serving customers' needs, which he said "is what this business is all about." But he said major customers question the ability of the other major foundries to keep up the pace.

2008 Rank	2007 Rank	2006 Rank	Company	Headquarters	2006 (\$M)	2007 (\$M)	% Change	2008 (\$M)	% Change
1	1	1	Qualcomm	U.S.	4,528	5,619	24%	6,477	15%
2	3	2	Broadcom	U.S.	3,648	3,754	3%	4,509	20%
3	2	3	Nvidia	U.S.	2,980	3,979	34%	3,660	-8%
4	4	4	Marvell	U.S.	2,198	2,830	29%	3,055	8%
5	5	6	MediaTek	Taiwan	1,628	2,445	50%	2,845	16%
6	6	5	Xilinx	U.S.	1,872	1,810	-3%	1,906	5%
7	7	10	LSI Corp.	U.S.	1,222	1,769	45%	1,795	1%
8	8	9	Altera	U.S.	1,286	1,264	-2%	1,367	8%
9	12	13	Avago	U.S.	858	820	-4%	905	10%
10	10	14	Himax	Taiwan	745	918	23%	833	-9%

**GlobalFoundries will pursue IDMs and the major fabless IC companies.**

"There is good interest in what we are talking about," Grose said. "In this economic environment, not a lot of people other than TSMC are investing and pushing forward the asset base and technology requirements. The customers are concerned whether other parts of the foundry environment are going to be able to do that, so they are questioning us about our own plan to make the investments to do that."

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